

Super Genius DNA #Chapter 81: A-Bio Cancer Laboratory (5) - Read Super Genius DNA Chapter 81: A-Bio Cancer Laboratory (5)

Chapter 81: A-Bio Cancer Laboratory (5)

Feng Zhang looked remarkably happy when Young-Joon said he would meet David.

“Wow, the CEO of the world’s best pharmaceutical company is meeting the CEO of the company that will be the greatest company in the world. It’s like a union between generations.”

“Really?”

“Of course. I’ll call him and set up a meeting.”

Feng Zhang pulled out his phone right away and called David. After chatting for a little bit, Feng Zhang brought up how he was with Young-Joon right now and how he wanted to meet him.

—Sure. When is he free?

“When are you free?”

Feng Zhang delivered David’s question to Young-Joon.

“I can’t do tomorrow because I have to meet Director James. After that, my schedule is... I should be free from Monday next week.

Feng Zhang told David exactly what Young-Joon said.

—Alright. We can have the meeting on Monday.

“Where would you like to have it?” Feng Zhang asked David.

—Conson & Colson has a drug research lab in Pennsylvania. It’s about three hours from Washington by car. It might be a bother, but I will show you around if you come to our lab. I would like to introduce you to our lab for each other’s development in the future.

Feng Zhang confirmed the location with Young-Joon.

“Alright. I’ll be there.”

* * *

Director James greeted Young-Joon with a bright face.

“Welcome, Doctor Ryu. Your *Science* paper on the pancreatic cancer cure was great. Is the clinical trial also going well?”

“Yes. The clinical trial is going swimmingly,” Young-Joon said with a smile. Alice was standing beside him as his translator. There were three more men with Young-Joon: one was Park Joo-Hyuk, and the other two were lawyers from A-Bio’s legal team. Young-Joon just left them to explore the city when he was meeting Feng Zhang, but he needed their help now because he was going to sign a contract.

“Now, shall we talk about building A-Bio’s cancer lab that we discussed before?” Young-Joon asked.

“You said you wanted to build a lab that is partnered with the National Cancer Institute (NCI)?” James asked.

“Yes. We did catch a powerful disease like pancreatic cancer, but we’ve just put out the big flame. There may be pancreatic cancers that evade our treatment method, and we need to do a lot of research on other types of cancers.”

“Because cancer is a drug with a lot of variables.”

Each type of cancer felt like a different organism. As such, an anticancer drug that was effective in one patient may not work at all on another. A drug that was previously effective might not be anymore when the cancer cells suddenly gain resistance, or it was sometimes the opposite. There were some surprising instances where the cancer cells, which were addicted to the anticancer drug, died when they stopped using it. And after some cancer cells spread to other tissues, they acquired new properties and turned into a completely new type of cancer. That was how versatile of an enemy cancer cells were.

The pancreatic cancer cure using the birnavirus was more effective and precise than any other method developed before, but a patient with a type of pancreatic cancer that couldn’t be cured by this may someday come out.

This was what Young-Joon had to plan for. He couldn't be satisfied with making a few good anticancer drugs and saving a lot of patients.

'I originally studied anticancer drugs before, so...'

And the background behind this was Ryu Sae-Yi, his youngest sister who was caught by a catastrophe with a terrible probability called pediatric liver cancer.

Young-Joon wanted no one to suffer from cancer again, and he wanted that world to come as soon as possible.

'Overcoming all cancers...'

Curing Alzheimer's or diabetes was child's play compared to this grand goal. The whole world struggled because they couldn't do something about pancreatic cancer, so things like end-stage cancer that had metastasized to the entire body was something for despair.

Among some scientists, there were people who believed that overcoming cancer was an unattainable goal. But Young-Joon was going to challenge that, and he wanted to build A-Bio's cancer lab in the U.S. for that goal. He needed to use the vast amount of data, new technology, and equipment that the NCI had. It would be a catalyst that would accelerate Rosaline's research and development. Since it could take too much time for Rosaline to destroy the enemy alone, he was going to give her a weapon.

"You are aiding us with three million dollars of support, right?" Young-Joon asked.

"That's right. But you must establish it as an American corporation that follows U.S. law. You know that, right?"

"Yes, it doesn't matter to me." magic

"Then should we sign the contract? We've prepared it."

James got the contract from the federal government's lawyers and handed it to Young-Joon.

"Read through it thoroughly and let us know if you have any questions. You don't have to sign it right now."

"Thank you."

Young-Joon handed over the contract to Park Joo-Hyuk. Park Joo-Hyuk sat at the table beside him with the document and began to read through it with the legal team's lawyers, even focusing on one comma. Young-Joon was going to read it after they were done checking over it.

"Oh, did you meet CEO David from Conson & Colson?" James asked.

"I am going to go see him next week."

"Doctor Ryu, did he talk about the Illemina equipment?"

"The project to install Illemina's DNA analysis machines in every hospital?"

"Yes, that one."

"I only heard about it through rumors."

"Actually, I had a meeting with him the other day. He requested the federal government's investment in the project and the easing of related laws."

"Is that so?"

"Yes."

"Did you?"

"First of all, the amount he requested was quite large. Illemina's DNA analysis equipment is quite expensive, and it would be installing it in all major hospitals in America. But that's not all. They have to teach doctors and nurses how to use that equipment, and if that's not possible, they have to place technicians," James said. "And it needs deregulation because it is dealing with patient DNA, and that is a type of personal information. David is trying to do it with me because it's such a big project and David can't do it alone."

"So did you refuse?"

No. I told him I would give him an answer after consulting you."

"With me?"

"He said that this project would ultimately be of help to you."

"To me?"

“Yes. He talked about expanding the diagnostic market, conducting a clinical trial for the pancreatic cancer cure and establishing a structure to support the A-Bio Cancer Laboratory based on that.”

“Oh.”

David was definitely a skilled businessman. Young-Joon could see the picture he wanted. If Young-Joon didn't have the insane technology of the diagnostic kit, there was a very high chance that the situation would go exactly as David planned.

David was trying to sell the diagnostic information he obtained from the DNA analysis equipment installed around the country to A-Bio's cancer lab. That would be important data for future cancer research. And if they successfully completed this project, the United States could make tremendous strides in cancer research. If so, it was something that was worth trying for the U.S. federal administration since they didn't have much time left in office; it could be a huge political achievement if it succeeded.

“Personally, I think it is a great idea. It's a win-win for all of us. You get data on cancer patients, Conson & Colson gets rich, and we get a political achievement.”

James said that he would give David an answer after asking Young-Joon, but he was basically convincing him.

'It's a good move.'

In the end, Conson & Colson would be at the top of the biggest issue in the pharmaceutical industry: A-Bio's entry into the United States. It was a strategy that allowed them to lay back doing nothing and just suck out profit using Illemina's technology, the federal government's support, and Young-Joon's ingenuity. David really planned it well since without the diagnostic kit, neither James and Young-Joon would have a reason to reject the proposal, and they would have reached an agreement.

But that was it.

“Don't do it,” Young-Joon said.

“Pardon?”

James' eyes widened as if Young-Joon's response was so unexpected.

"Why are you telling me not to do it? This benefits you as well, Doctor Ryu. Aren't you going to develop more anticancer drugs at your cancer lab? You are receiving three million dollars worth of support from us annually, but if you don't do anticancer research with that..."

"We will do research."

"Then you need DNA diagnostic data from patients' cancers."

"That's right. But we are not going to obtain it in the way Conson & Colson think."

"Pardon?"

An extreme confusion took over James.

"I have a much more efficient diagnostic technology than that. It will be commercialized in a few weeks," Young-Joon said. "Since I was going to show CEO David anyways, I will show it to you too, Director."

Young-Joon took out his laptop from his bag.

"What are you going to show me?"

"It's a video of our product's prototype. We couldn't bring the actual project for security reasons. Just be satisfied with this."

Young-Joon opened a video file that was on the background of his laptop. And after the video hit the three minute mark...

"Oh god..."

James was so shocked that he almost screamed. "This is... No, this... This is possible?"

"It's a project that combines A-Bio's Cas9, A-Gen's lab-on-a-chip technology, and finally, SG Electronics' semiconductor technology."

James clenched his fists slightly. He didn't want to show his hands trembling as he was the director of the U.S. Office of Science and Technology.

“We are going to sell it in convenience stores and grocery stores. We will make diagnosing diseases an everyday medical service.”

“... How much is it?”

“All kinds of amazing technology went into it, but it won’t be very expensive because the sample itself isn’t really expensive, and we don’t need a lot of it,” Young-Joon said. “Excluding labor costs, it costs a little bit less than a dollar in raw material costs. If we machinerize it and produce it in factories, the supply price will probably be around ten to twenty dollars, even if we include the distribution costs.”

It was only ten thousand to twenty thousand won. James already knew that this wasn’t on the level of treating incurable diseases and things like that. He was confident that this was the greatest invention after smartphones.

James asked, “Are you going to make things more like this at the A-Bio Cancer Laboratory?”

“Unfortunately, this is an A-Gen product.”

“Or something similar...?”

“We have to focus on cancer research there.”

As Young-Joon answered with a chuckle, James looked disappointed.

“Please tell us if there’s anything you need to build the cancer lab. I will do anything if it’s something within my reach.”

* * *

Young-Joon arrived at Conson & Colson’s drug research lab in Pennsylvania.

“Hello, Doctor Ryu.”

Greeting him, David sat Young-Joon down on the chair across from him. After a brief introduction...

“Should we talk about business now?” David said. “You may already know, but we are planning to install DNA analysis equipment in a thousand hospitals in the United States and do a pilot operation. We have already put in our order to Illemina, and they are producing around two hundred right now.”

“Doesn’t one of them cost around five hundred thousand dollars?”

“That’s right.”

“You really did it big, didn’t you?”

David smiled at what Young-Joon said.

‘Did it big?’

Wasn’t it obvious? This kind of dramatic decision was needed to overcome a company like A-Bio and dominate the market first. So far, David had beat competitors several times by reading the market with his keen insight and making bold decisions. It was the same this time as well. He persuaded Jonathan from Illemina, who was scared and cowering, and James and pushed for the project.

“Because I know that you or Director James will not reject,” David said confidently.

“A-Bio will need a lot of DNA data on cancer patients to do cancer research in the future. There is a lot at the NCI, but that won’t be enough,” David said. “Before the end of this year, we will install Illemina’s DNA analysis equipment in all major hospitals around the United States and use that to obtain large amounts of data on DNA mutation.”

Young-Joon was just quietly listening. David went on.

“We will supply that data to the A-Bio Cancer Laboratory. In exchange, give us shares in your lab.”

“Shares?”

“Yes. We will buy shares in your lab. Thirty percent,” David said with a confident face.

But Young-Joon’s answer was very unexpected.

“Mr. CEO, stop this project when you can. It’s going to be trouble if you continue.”

“Pardon?”

David frowned a little.

“We developed a diagnostic kit. Patients aren’t going to be treated in the way you think.”

“What are you talking about? A diagnostic kit?”

“It’s a kit that an ordinary person can use alone to diagnose about one hundred diseases in less than three minutes. This kit can be linked to a phone and be diagnosed in detail with an A-Bio app. It can also send data to doctors at registered hospitals for real-time data-based treatment.”

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Every sentence was clear in Young-Joon’s explanation, but David could not understand it easily. David looked like he just heard that Young-Joon made a time machine or a transportation machine.

“What did you make?” David asked.

“I think it will be too difficult to explain, so I’ll show you a video.”magic

Young-Joon pulled out his laptop and played the video that he showed Director James.

[A-Bio Diagnostic Kit Prototype No. AB_01520]

The person in the video was Park Dong-Hyun. First, he put one hundred microliters of his blood in each of the five test tubes. Then, he put one microliter of water in the first test tube and mixed it with the blood; this was the negative control group. For three of the test tubes, he put in one microliter each of dengue virus DNA, HIV DNA, and variant DNA from pancreatic cancer cells in separate tubes and mixed it with the blood. Lastly, he put all three types of DNA into the tube.

The kit was flat, and it was made of a silicon and semiconductor that was the size of one’s palm. Park Dong-Hyun injected the five different blood samples in five separate kits. Blood moved along the tube as the built-in battery worked. The agarose net filtered out blood cells, only letting plasma and DNA pass through. The plasma sequentially passed through one hundred of the holes on the sides.

The first kit had no response, but from the first kit to the fourth, one hole at different locations in each kit shone with a green light. And in the last kit, all three holes were green.

—Each hole contains a target DNA amplification system and a Cas9 that discriminates the sequence of the DNA structure.

Park Dong-Hyun explained in the video.

—With this mechanism, you can detect the dengue virus, HIV, and pancreatic cancer cell variant DNA in order at the location of each hole. The corresponding disease DNA is marked with a green light-emitting signal, and all three were marked as all three disease DNA were detected.

Park Dong-Hyun explained as he showed the kits to the screen one by one.

—In order, the blood samples are from a dengue virus patient, HIV patient, and a pancreatic cancer patient, and for the last sample, it is a hypothetical case where the patient is suffering from the dengue virus, HIV and pancreatic cancer.

Park Dong-Hyun pulled out an additional test tube.

—This is a blood sample from an Alzheimer's patient that was provided by the Next-Generation Hospital. Alzheimer's is diagnosed by the seventh hole in the kit.

Park Dong-Hyun took out a new kit and injected the patient's DNA. After about two minutes, the seventh hole shone with a green light.

David was getting paler as the video progressed. Young-Joon kind of felt sorry for him as he watched his face.

'There's still one more big thing...'

Park Dong-Hyun pulled on the button that was located at the bottom of the kit he used to test the Alzheimer's patient's blood. A small connecting jack came out. It was a 5-pin terminal. He plugged that into his phone.

Ring!

With a brief sound of an alarm, an external memory recognition message popped up on his phone. He opened [A-Bio Diagnostic Kit Prototype

Application v2.17] on his phone. The application recognized the green light from the connected diagnostic kit and sent a message.

[Diagnosis: Stage 2 or 3 of Alzheimer's dementia. A precise examination and intensive care are recommended from nearby hospitals.]

[Stage 2 Alzheimer's: A very mild state of cognitive decline, causing minor memory problems, such as forgetting the location of everyday objects like keys or familiar names. It can be difficult for people around you to notice.]

[Stage 3 Alzheimer's: You may not remember where you put your valuables. Your planning ability declines and you cannot remember sentences well. People around you will be able to notice your cognitive decline.]

[Sign up for remote treatment.]

[Find nearby hospitals]

—There aren't any linked hospitals as it is still in development, and we cannot use the remote treatment system due to legal regulations. But we can find nearby hospitals using the phone's GPS.

Park Dong-Hyun said. He pressed the last option. When he did, a map popped up on the screen with nearby hospitals. When he pressed on the hospitals, a profile of the neurology and psychiatry doctors provided on the hospital's website came up as well.

—This is the end of the test of Diagnostic Kit Prototype AB_01520.

With Park Dong-Hyun's last comment, the video ended.

With his lips firmly shut, David glared at the black screen of Young-Joon's laptop.

"When this kit is commercialized, the DNA analysis equipment you are going to install in hospitals will be worthless," Young-Joon said. "I think it's best that you stop the project now."

"No way..."

David grit his teeth and glanced at Young-Joon.

"How is this possible? This actually exists? Are you bluffing, Doctor Ryu?"

Young-Joon was an unrivaled, talented individual in research and development of new technologies, but he was also skilled in business management. What if Young-Joon was trying to destroy Conson & Colson's business in the U.S.? What if he was bluffing with a technology that didn't actually exist?

"This is just a video, not even the actual product. How can I believe that this is real and not just some edited video? It does not make sense."

"You don't have to believe me. It doesn't matter. I only told you because I'm worried for you," Young-Joon replied calmly. "But is there a reason for me to lie to you? Assuming that this diagnostic technology does not exist, it would help our cancer laboratory if this business of yours succeeds."

"You could make me stumble on this business, then go to America and do it yourself. That kind of bluffing, information wars, and stealing ideas is common between large pharma companies."

"Not us," Young-Joon said. "This is science and medicine, not anything else. As long as I am the CEO, I will not fake something to make money or grow the company. I want to make a new rule in the pharmaceutical and scientific community. I want to create an atmosphere in the industry where we do not lose our moral and principled attitude as scientists. If you can't believe me, you don't have to. But you will be in trouble later."

"..."

David wrapped his head in his hands and thought hard.

"Doctor Ryu," said David after a moment.

"Yes."

"I want to trust you, Doctor Ryu. but in order to stop this project, I need to be sure. Please confirm a few things for me, only to the extent that you can answer."

"Yes, ask me."

"DNA amplification requires equipment such as thermo-cyclers. Isn't that the basic principle of PCR? You need to be able to adjust the temperature from sixty degrees to ninety-five degrees Celsius by the second. You can only

amplify DNA by doing that for two hours. In this kit, it seems like you just amplified DNA at room temperature without any equipment. How does that work?”

“The DNA double helix structure loosens if you use recombinase and attach a primer to the target location. If you attach a single-strand binding protein to the single-stranded DNA and amplify it with a polymerase, you can amplify DNA at room temperature without a thermo-cycler.”

“... But how do you amplify each target for one hundred different kinds of diseases? The primers would all mix.”

“We put in primer and magnesium, the starter for the amplification, in each hole. Only the target DNA will be amplified in each hole, so the primers will never mix.”

“ ... ”

David bit his lower lip.

“Then... How did you separate the plasma from the blood?”

“There is a vacuum pressure applied inside the kit by the air battery. The blood travels along a thin tube inside under that pressure, and the very low concentration of an agarose mesh in the tube filters out the blood cells.”

“What about the green illuminating mechanism?”

“We made it with a variant of Cas9. If the sequence of the amplified DNA matches the sequence entered in Cas9, it reacts to the DNA. The light-emitting signal is amplified by the principle of FRET (Fluorescence Resonance Energy Transfer) according to the structural change of Cas9.”

“ ... ”

“I cannot tell you what kind of Cas9 variant it is. That’s the most essential part of this technology.”

“ ... ”

‘I lost.’

This wasn’t a bluff. It was a completely plausible and reasonable explanation.

'How the hell did he do that? Is he human?'

David suddenly shot up from his seat.

“Shit.”

He no longer looked relaxed. Now, he was really in trouble as the project had already started.

Thump!

He stomped on the floor.

“Phew...”

David caught his breath and organized his thoughts.

Young-Joon said, “Director James knows this as well because I told him. He will give you an answer soon that it will be difficult for him to support your project.”

“I assume so.”

David let out a sigh.

“Your ingenuity is much more outstanding than I planned, Doctor Ryu.”

“I’m flattered.”

“... So, why did you show me this?” David asked.

David was definitely a fast, quick-witted person. He had already read half of Young-Joon’s mind.

“If you just let us be, you could have seen a powerful competitor like Conson & Colson step on a mine and have its legs blown off. Why did you tell us and stop us?”

“As I said before, I want to create a new atmosphere and rule in this industry. We are all advancing towards the future of science, are we not? I want co-prosperity and cooperation rather than competition,” Young-Joon said. “We will have no choice but to destroy those like Schumatix that severely damage

research ethics, but I want to have respect for people in the same field who research rightfully and legally.”

“ ... ”

David was a little ashamed.

“And there is some profit I would like to gain through this. It will be of help to you too, Mr. CEO.”

“What is it?”

“You can’t cancel the order for the two hundred pieces of the DNA analysis equipment, right?”

“Yes.”

“Sell that to me.”

“... For how much?”

“I will buy it at fifty percent of the price you bought it for from Illemina.”

“Oh.”

David covered his face with his hands.

“Don’t do this, Mr. Ryu. It hasn’t even been shipped out yet. It’s still being produced. It’s not used. It’s completely new.”

“You don’t have anywhere to sell it to if I don’t buy it.”

“That is true, but...”

“Even if there is demand, how high do you think it will be for a piece of equipment that costs five hundred thousand dollars? And even if we don’t have that equipment, we can commission DNA sequence analysis to a sequencing company that has the equipment. So, the demand for the actual equipment itself is very low,” Young-Joon said. “It will take a few years to sell two hundred of something like that. Then, it will really become used. And venture companies or labs who want to get one will get a new one from Illemina. They wouldn’t get a used one from Conson & Colson, which isn’t even a DNA analysis company.”

“ ... ”

“If you drag your feet and time passes, technology will advance more, and the price will drop even more. Fifty percent is a high offer. This is the only chance you have to get rid of two hundred of these white elephants at once.”

“Ugh.”

David clenched his eyes shut like this was painful. To be honest, the loss wasn't that burdensome to a company as big as Conson & Colson if they stopped the project right now. But there was clearly a reason why Young-Joon was taking two hundred of those super expensive pieces of equipment. That man was a scientist inside-out, but like a natural businessman, he never did business that would cause losses.

‘Just look at the talent that created that monstrous diagnostic kit.’

If a genius of the century took two hundred of Illemina's DNA analysis machines and went to his company? David was sure that he would bring something that would knock the scientific community out again in a few months.

‘What is it? What can he do with two hundred of those machines?’

“Are you not going to sell them?” Young-Joon asked.

“Um...”

“This is your only chance.”

Young-Joon smiled.

“Alright... I will sell them to you,” David replied helplessly.

David didn't have a choice. He couldn't even predict what was in that genius's view. Even if David took on some loss, he had to stop this project right now and get out.

Young-Joon said, “Thank you. But I will give you a very special opportunity to secure a share in the A-Bio Cancer Laboratory.”

‘What? An opportunity to get a share in A-Bio's cancer lab?’

David gulped.

'I went through hell to get here, but I didn't expect to be dragged along by a thirty-year-old CEO at this age...'

For some reason, David wanted to decline and say that he didn't need the share because of his pride, but he knew that he was in no position to do that.

"What is it?" David asked in a slightly exhausted voice.

Chapter 83: A-Bio Cancer Laboratory (7)

The way Conson & Colson was going to secure stakes in the A-Bio Cancer Laboratory... David didn't think Young-Joon would give it to him that easily, but it really wasn't simple.

"Conson & Colson have a patent for the Chimeric Antigen Receptor T-cell Therapy, one of the third-generation cancer immunotherapies. Schumatix originally had it, but it was transferred to Conson & Colson."

'No...'

David felt dizzy.

'Please not that technology.'

This technology was basically the future of Conson & Colson.

David's heart began beating wildly. He tried to keep a calm face.

Young-Joon said, "Please transfer that international patent to the A-Bio Cancer Laboratory. Then, I will give you shares."

Chimeric antigen receptor T-cell therapy, or CAR-T therapy, was a technology where one used immune cells to eliminate cancer. There was a mechanism in the body where immune cells tracked down cancer cells and destroyed them. It was a natural defense that the human body used to remove cancer on its own, and the chimeric immunotherapy helped that work better.

The process was extremely complicated. They would have to harvest T-cells, a type of immune cells, from the body and then manipulate their DNA. Then, they would attach a material that would allow the T-cell to recognize cancer cells better. And after the T-cells were injected into the body, they would find

the cancer cells and destroy them. It was a treatment method that was in the spotlight because it was especially effective on blood cancers like lymphoma and was relatively safe.

The problem was the price. It cost four hundred fifty thousand dollars for a single procedure. That was over four hundred million won in Korea.

“But I can drastically reduce the price of that treatment. And I can increase the efficiency as well.”

“How?” David asked.

“Because I have Cas9 and stem cell manipulation,” said Young-Joon.

“Because we have stem cell technology, we do not have to extract immune cells from the patient. We can just make stem cells from the patient, differentiate it into bone marrow, and mass produce immune cells from there since immune cells are made from bone marrow.”

“ ... ”

“And like we manipulated CCR5 with Cas9 to cure HIV, we can genetically engineer them to their most optimal state so that the immune cells can kill cancer cells better.”

“That’s... true...”

“Conson & Colson made it so that people couldn’t work on it easily by heavily raising the royalties on patent for the technology. It seems like you wanted to study it exclusively at Conson & Colson.”

“Honestly, yes. That’s right”

“But A-Bio has stem cells and Cas9. Conson & Colson will not be able to commercialize that. So, transfer it to us. We will let that technology see light.”

“Isn’t that the same for A-Bio as well? You have stem cells and Cas9, but not our technology.”

“We can develop another technology that bypasses the patent for the chimeric immunotherapy. I just think it’s a waste of time.”

“ ... ”

'This man talks about making a new technology like he's going to fry an egg or something.'

But the problem was that Young-Joon actually succeeded. Again, he said it without any evidence, but there was a power to it that could not be ignored. What if he really did develop a technology that bypassed chimeric immunotherapy? Then, Conson & Colson really wouldn't be able to get anything.

"If we transfer the technology to you, how much shares of the cancer lab are you going to give us?"

"We will give you two percent."

"Two percent! Only two percent?"

"It's not just two percent. I am giving you an amazing deal because you may be able to give us your help when we go to America."

"Mr. Ryu, chimeric antigen receptor T-cell therapy is the most important technology among three third-generation immunotherapies. You also know that, right?"

"But the only place it will be able to see light is A-Bio. If you just leave it like that, it will not be an important technology, it will die as a technology that could have been important. I am giving you a lot of shares by buying it at two percent."

"What are you going to do if I refuse?"

"Then like I said, I will develop a different technology," Young-Joon said. "And you will greatly regret that you lost the chance of a lifetime to secure two percent of shares of the A-Bio Cancer Laboratory. You may also be questioned during your board meeting."

"Phew..." David let out a deep breath.

How big was the potential value of the A-Bio Cancer Laboratory? The chimeric antigen receptor T-cell therapy was a technology with high potential value rather than being an excellent profit model right now. To be honest, it was true right now that it would only transform into something actually useful if it went through A-Bio.

“But to exchange two percent of shares of your lab with the chimeric immunotherapy...”

“You are good at making bold decisions, aren’t you, Mr. CEO?” Young-Joon grinned. “You don’t get a second chance for this.”

“This is not something I can decide on my own.”

“You can give me an answer after discussing it thoroughly at the board meeting.”

“I will think about it because you did really show us that you can cure pancreatic cancer. I will use that as evidence and bring it up during the next meeting,” David said.

* * *

A-Bio, which was always in the spotlight, received the most attention with its HIV eradication project. Even before that died down, news even bigger than that came pouring.

About a few weeks after Young-Joon returned from America, the door to targeting cancer had finally opened.

[A-Bio’s pancreatic cancer cure succeeds in Phase One of clinical trials.]

The first news that came out was about the pancreatic cancer cure. Phase One of its clinical trial, which was being carried out in Korea and America simultaneously, had already made significant progress when Young-Joon met Professor Feng Zhang. The same results came from Korea as well.

However, considering the time, it was not yet the point to declare the clinical trial a success. But there were two reasons why this kind of news was coming out.

The first was that the prognosis was quite good. The patient’s cancer cells died rapidly in a short amount of time, and the cure was highly efficient. Reporters ended up choosing provocative buzz words because they wanted to report on it as fast as possible.

The second reason was because of the huge breaking news in the United States. Like how everyone followed the popular kid, Korean reporters had

hopped on the bandwagon and took the opportunity to release the news about the pancreatic cancer cure. The news in the United States was obviously the announcement of the establishment of the A-Bio Cancer Laboratory.

[A-Bio signs contract to build a cancer laboratory in Maryland.]

[Federal government promises three million dollars a year in funding.]

[The National Cancer Institute to provide all its gathered data and technology.]

[Conson & Colson signs contract to transfer patent for chimeric immunotherapy to the A-Bio Cancer Laboratory.]

[Conson & Colson gives up rights to the most famous third-generation immunotherapy and joins forces with A-Bio.]

[The first step to the great achievement of conquering cancer.]

On top of that, the address Young-Joon gave at the groundbreaking ceremony of the A-Bio Cancer Laboratory spread through the media.

“Cancer is a difficult and complex disease with almost an infinite number of variables. But A-Bio has developed a medicine that cures pancreatic cancer, the most difficult type of cancer, and was greatly successful in the first phase of the clinical trial,” Young-Joon said. “From now, we will destroy all types of cancers: liver cancer, lung cancer, prostate cancer, brain tumors, ovarian cancer, leukemia, skin cancer, colorectal cancer, breast cancer, non-Hodgkin’s lymphoma, esophageal cancer, thyroid cancer, and more. We may not be able to get them all in a day, but we will conquer them one by one and open the doors to a cancer-free world in the near future.

The world was turned upside down again.

—Holy shit.

—I just called 1301. This is the number I should call to report my national pride right? Cause it’s making me high.[1]

—National pride is literally giving me hallucinations. I had a dream about him yesterday.

—The American government is giving them three million dollars yearly. What is our government doing...

—Have you ever seen the Korean government invest in fundamental science before? And our government doesn't have any money.

—But our government quietly gave A-Bio ten billion won when it was first opened. Don't hate on them so much.

—But is Conson & Colson high or something? Why did they do that all of a sudden? They just gave their key technology to their most powerful competitor.

—I think they aligned themselves. Smart choice.

Kim Hyun-Taek, the director of Lab One, grit his teeth as he read the posts that were coming up in Young-Joon's fan club

"He's building a cancer lab?" he said.

On the other side of the table, Doctor Kim Joo-Yeon, the principal scientist in the Anticancer Drug Research Department, sat there with a tense face.

"It's weird," Kim Hyun-Taek said. "Whatever about the pancreatic cancer cure. Sure, the U.S. federal government can support Ryu Young-Joon. But Conson & Colson is handing over the chimeric immunotherapy? For just a sliver of shares? What do you think, Doctor Kim?"

"It's very strange. I'm wondering if Doctor Ryu made some sort of deal when he went to America."

"From what I know, Conson & Colson were going to install Illemina's diagnostic devices in hospitals around the country to dominate the diagnostics market, then pressure Young-Joon to take a lot of shares of the lab. This was how the scenario was going to go."

"If that happened, we could have turned around the atmosphere by leaking a headline that the cancer lab isn't actually Ryu Young-Joon's, but Conson & Colson's, an American company."

"I know. But there's nothing like that, and they even gave them chimeric immunotherapy? This looks like they are supporting them. They are making someone who is already powerful stronger. What happened?"

"To be honest, I don't really know because it's so unexpected..."

Kim Hyun-Taek brushed through his hair like he was frustrated.

“He is going to be dangerous if we leave him be. He used to be a cancer scientist. He went back to his field of expertise. With the help of the U.S. federal government, the world’s best research institute, and the largest pharma company in the world.”

“You have to do something,” Kim Joo-Yeon said. “Sir, the center of cancer research will no longer be in our department. It will be transferred to Ryu Young-Joon’s cancer lab.”

“ ... ”

“Ryu Young-Joon is already being mentioned for the next CTO. He is more popular than you. If you give him the anticancer drug field in this situation...”

“The reason why Conson & Colson turned to supporting Ryu Young-Joon. Does it have anything to do with the diagnostic kit he is developing?” Kim Hyun-Taek asked.

“I don’t know for sure, but I think it will.”

“I should go down there.”

Kim Hyun-Taek got up from his seat. He put his coat on and went to the Mobile Diagnostic Device Research Department with Principal Scientist Kim Joo-Yeon.

“Who is the scientist that is working with Doctor Ryu?” Kim Hyun-Taek asked Principal Scientist Song Yu-Ra.

“Are you talking about Doctor Park So-yeon?”

“Park So-Yeon? Take me to her.”

* * *

Park So-Yeon was looking at Young-Joon’s experimental data on her laptop. It was truly fascinating and extraordinary. The idea of diagnosing DNA with Cas9 was so innovative, and his potential that pushed that idea and got results was amazing as well. The mechanism that DNA is amplified at room-temperature was shocking. Everything was just so surprising. It was only in its

development stages, but it really was an amazing item. The structure of the whole diagnostics field was going to be reformed.

'This probably affected Conson & Colson's decision.'

This item could potentially be a more powerful item than the pancreatic cancer cure.

"Doctor Park So-Yeon."

Someone called for her as they came inside. Startled, she instantly turned off her laptop.

"Director?"

"I came here because I want to ask you something."

Kim Hyun-Taek approached her.

"I want to see the experiment notes for the diagnostic kit that you and Doctor Ryu from A-Bio are developing together."

"Um... That is..."

"Hurry. This is important. I have to know what it does."

Park So-Yeon hesitated.

"O-One moment." magic

Click.

Park So-Yeon turned on her laptop. She followed the directory to find the experiment data and opened a few folders. She felt like cold sweat was running down her neck as Kim Hyun-Taek glared at her.

'Wait.'

Park So-Yeon stopped.

'Is it right for me to give this to him?'

Park So-Yeon also didn't know any information about the Cas9 variant, which was the most essential part of the diagnostics kit. It was because Young-Joon was strict about the security regarding that information, which was the most important. She had heard that only the members of the Life Creation Team knew that in A-Bio as well. As such, there was a low probability that it would cause a problem for Young-Joon even if she revealed the information she knew. And no one would be able to do anything because it is just before completion.

But did that mean she could give this information to him? This experimental data was developed by Young-Joon borrowing the samples and facilities at the Diagnostic Device Research Department as the CEO of A-Bio; it was not a collaborative research between labs, so it had nothing to do with Kim Hyun-Taek.

'Would Ryu Young-Joon have given it to him?'

Park So-Yeon didn't hope to get back with him or anything now. This was a different matter; it was not because of personal feelings. The scientists here had learned something from Young-Joon, and she had learned it better and harder than anyone else.

Park So-Yeon hesitated, then said in a quiet voice, "I... I'm sorry... But I don't have it..."

"You don't have it?"

Kim Hyun-Taek frowned.

"..."

"Talk clearly."

"...gainst..."

"What?"

"Against research ethics..."

1. 1301 is the number in Korea to report drug-related crimes. ?

Chapter 84: The Diagnostic Kit (1)

Kim Hyun-Taek stared at Park So-Yeon like perhaps he heard her wrong. There was a moment of silence between the both of them, and she just lowered her head, unable to say anything.

“What did you just say?”

“It is against research ethics...”

Park So-Yeon was basically mumbling because she was so scared, but Kim Hyun-Taek

understood what she said.

“Research ethics.”

Kim Hyun Taek scoffed like this was ridiculous.

“That damn research ethics. My ears are going to fall off. Do you know how the structure of work management works? Hey, So-Yeon-ssi, what department are you part of?”

“The Mobile Diagnostic Device Research Department...”

“What lab is that department part of?”

“Lab One...”

“And who is the director of Lab One?”

“ ... ”

“I have a right to know about the work that you do and the department does. You just give the lab director the data if they ask for it. Why are you talking about research ethics?”

“ ... ”

“Stop talking nonsense and open the data.”

Park So-Yeon clenched her eyes shut. To be honest, there would be nothing wrong with giving him the data right now. The diagnostic kit was near

completion already. Even if Kim Hyun-Taek saw part of the data, there was nothing he could do.

But this was about Park So-Yeon's own responsibility for her research ethics. The day Young-Joon went against Kim Hyun-Taek and was kicked out of the lab with punishment, she let go of him. This was only just a few months ago. After that, she regretted it like hell.

The current Park So-Yeon was different. She was still new to the workforce, but she wasn't a complete newcomer who had just joined the company like when the incident happened. Back then, she was walking on eggshells around her superiors from one minor mistake and worrying whether she would make a bad impression on anyone at the company.

'I was scared, too.'

Everyone at the lab basically knew that she and Young-Joon were dating. But he didn't fight with just some department head, he fought with the lab director—the future candidate for the CTO position. If she took his side, what kind of burden would she have to have taken on?

This was the first company she joined after studying for a total of ten years, from her bachelor's to her doctorate, and finally graduating. It was also Lab One, the most famous lab at A-Gen, the best pharmaceutical company in the country. It was a reward for her ten years of studying, and she did not want to give up on the wonderful dream and life that would unfold from this great position. She was just scared of everything.

Park So-Yeon was still scared. But now, she had the courage to overcome that fear.

"This is not a co-research project," Park So-Yeon said. "Mr. Ryu borrowed the facilities here, and I was dispatched as research support for the development of the PDMS lab-on-a-chip. Our department and lab do not have any rights about that project. Mr. Ryu has all the authority, and I cannot share the data at will."

"Ah, are you going to be troublesome like that?" Kim Hyun-Taek said irritably. "Excuse me, So-Yeon-ssi, why are you being sensitive about something so stupid? As long as Doctor Ryu experiments here, he probably knows that all the data produced here can be shared with me."

Kim Hyun-Taek snapped at her.

“You don’t think I know research ethics? I worked in this field thirty years more than you. Who are you trying to teach?”

“ ... ”

“It’s alright in practice. Then, do I have to go to Doctor Ryu because I want to see the data and get permission? When *my* subordinate at *my* lab has that data? When it’s obvious that he’ll say that I can see the kind of data that Park So-Yeon-ssi has?”

“Then request it from Mr. Ryu...” Park So-Yeon said.

“What?”

“Come find me after getting Mr. Ryu’s permission. That’s the proper procedure...”

“ ... ” magic

Kim Hyun-Taek grabbed the back of his neck in anger as he grit his teeth. The other scientists were staring at him, then quickly turned away when he looked back up. But he could hear people whispering, “What’s So-Yeon-ssi going to do...”.

“Damn it.”

He let out a sigh. Park So-Yeon still looked scared, but it seemed like she wasn’t going to back down easily. He knew that this wouldn’t happen even if he yelled at her.

“Whatever. I don’t need that data,” Kim Hyun-Taek said. “I will never forget this. I didn’t know that a rookie doctor who doesn’t know what she’s doing would screw me over like this.”

“ ... ”

Thud!!

Kim Hyun-Taek slammed the door behind him and left.

“*Sigh...*”

Park So-Yeon, who was no longer tense, sat back down. Her legs trembled. Suddenly, she felt tears in her eyes. She pulled out a handkerchief and wiped her eyes. She covered her face with her hands and thought in silence.

After breaking up with Young-Joon, she was in pain every time she hung out with the people from Lab One. Until Young-Joon turned around the company atmosphere with a powerful performance at the year-end seminar, they all talked badly about and laughed at Young-Joon. They weren't really careful because they were around Park So-Yeon, his ex-girlfriend. And she usually joined them in talking behind Young-Joon's back. Whenever she did, she felt uncomfortable in the back of her mind as if she had an upset stomach or something. She didn't even wish him congratulations for his success. Considering her hardships, regret, and how sorry she felt, she thought that she would rather fall out of favor with Kim Hyun-Taek.

* * *

The birnavirus was originally a virus that caused infectious pancreatic necrosis in fish of the salmon family. Young-Joon's strategy was to change the structure of this virus so that it only infected cancer cells in the pancreas. For this, he made a transferrin receptor and a ligand for ERBB2 on the surface of this virus, and he removed the BVP3 gene so that the virus could not multiply in the body. The pancreatic cancer cure team was the one who was in charge of it up to this point. It took A-Gen's Research Support Center to get their hands on the birnavirus because it was such a unique virus. It also took a long time to manipulate the genes and confirm the structure.

But there was another step. Because the virus would be destroyed by stomach acid, they had to make it pass through the stomach with a capsule coating, go through the pylorus, and allow the coating to dissolve in bile that is secreted from the pancreas. Celligener was the one responsible for the capsule coating technology.

It took a long time as it was a project that started with a very creative idea and had compiled all kinds of new technologies.

"But we successfully finished the first phase of clinical trials," Young-Joon said on the podium with a glass of wine in his hand.

Below him, around twenty people gathered to hear Young-Joon's speech after drinking the glasses distributed by the servers. It was a congratulatory dinner party. He had brought Principal Scientist Lee Jae-Chun's team that was in

charge of developing the pancreatic cancer cure and five scientists under Song Ji-Hyun from Celligener to a hotel restaurant.

“The establishment of the A-Bio Cancer Laboratory is all thanks to you. I congratulate and thank you for this success.”

Clink!

They all clinked their glasses and took a sip of wine.

—I will detoxify the alcohol.

Rosaline sent him a message.

‘I kind of want to get drunk today.’

—If you would like a calming effect, I will control your serotonin level. Let’s just get rid of the alcohol because it is harmful to your body.

‘It’s been months since I’ve had a day off. Can you just leave it?’

—I don’t want to use the same blood vessels as alcohol.

‘So picky... Do whatever you want.’

Rosaline began breaking down the alcohol.

“Doctor Ryu.”

Song Ji-Hyun approached Young-Joon.

“I saw the speech you gave at the groundbreaking ceremony for the cancer lab. You said you were going to conquer a variety of cancers one by one...”

“Yes, that’s right.”

“Is the clinical trial for Cellicure going to start now?”

“Um...”

Young-Joon looked a little hesitant. To be honest, he didn’t want to continue Cellicure’s clinical trial in this state. It was a good drug, but Rosaline could develop it into a better form.

Right now, Cellicure was effective in destroying liver cancer cells and didn't really have any side effects, but there was one drawback. It was that it broke down too much in the liver. So to increase the efficacy, they had to increase the amount while keeping in mind the amount that was broken down. However, they had to increase the number of doses instead of the intake as an increase in a single dose could damage regular cells. Patients would have to take the cure six times a day, which was a pretty severe drawback for a new drug. It was pretty bothersome that they would have to keep to a schedule in everyday life. People living in the busy and hectic modern society could easily forget their intake time.

But Young-Joon could rectify the drawback if he changed a few things about Cellicure. He just had to make the drug only go into cancer cells and not regular liver cells. Then, they could decrease the breakdown, and they could see a better efficacy with less of the drug and fewer doses.

'I should tell her, right?'

"Actually, I..."

"About Cellicure..."

The two people began talking at the same time, then stopped together.

"Oh, go ahead," Young-Joon said with a smile.

"Yes, sir. This is something I've been thinking about while working on the pancreatic cancer cure coating, but what if we coat Cellicure with an exosome and attach a receptor that targets liver cancer cells on the surface of the exosome? Then, we can send Cellicure only to the liver, which would decrease the number of doses and increase the efficacy..."

Young-Joon's eyes widened. Song Ji-Hyun flinched a little when she saw his face. Pitching an idea to a genius like Young-Joon needed a bit of courage.

Song Ji-Hyun's ears reddened.

"Haha, maybe not? It was just a thought. If it doesn't work, you don't..."

"No, it's fine."

It was exactly what Young-Joon was going to explain, even down to the idea of using exosomes.

“It’s a great idea,” Young-Joon said. “If we work on that, we could advance Cellicure a little more.”

Song Ji-Hyun’s expression brightened a little.

“Thank you.”

“Why don’t you work on it? We won’t have to repeat Phase One because it isn’t a change to the drug itself but only the delivery method. Let’s reinforce it and begin Phase Two.”

* * *

Kim Young-Hoon, a director at A-Gen, was someone the SG Group had put in. He wanted to put Young-Joon at the top of A-Gen.

‘Maybe Yoon Dae-Sung is fine, but Ryu Young-Joon is much better than someone like Yoon Bo-Hyun.’

To stop Yoon Dae-Sung from passing down his management rights and putting A-Gen in the possession of Young-Joon: Kim Young-Hoon even helped establish A-Bio for this goal. He was the one who sold the patent to the flu treatment that Young-Joon had to SG Pharmaceuticals so that he could secure capital for establishment. It was a win-win for everyone.

But recently, Kim Young-Hoon began starting more direct conversations. When the diagnostic kit was still in its early phases, Kim Young-Joon requested a meeting with Young-Joon, and he connected him to SG Electronics. That was how the smartphone-linking technology was born.

As Kim Young-Hoon was driving home, his heart beat in excitement.

‘Now, the world is going to be turned upside down.’

He had heard what stage the diagnostic kit was at when he called Young-Joon. It was almost done, and he had heard that it was going into mass production at A-Gen’s lab-on-a-chip production factory.

And everything was going to be revealed tomorrow. It was going to be on the cover of *Science* tomorrow, and it was going to be the main news on the Nine O'Clock News.

'It will be on the headlines of every news article tomorrow.'

Kim Young-Hoon took the four diagnostic kits he received as a prototype and came home. He gave one to his family, who were watching the TV together.

"What is this?" asked Kim So-Jung, his daughter who was in high school, as she examined the kit.

"You want to take out the sterile blood-collecting needle and get a drop of blood from your finger?"

With a curious look, she opened the needle and poked the end of her finger. With a stinging pain, the blood started moving into the kit with the pressure from the built-in battery.

Kim Young-Hoon watched the kit in silence. Thankfully, there weren't any signals.

"Oh my! Something is lighting up on mine!"

Kim Young-Hoon's wife held up the kit and tilted her head in confusion. There was a green light from hole forty-eight.

"It's because you have diabetes. That's been diagnosed," Kim Young-Hoon said.

"Diabetes?"

"This is the diagnostic kit that A-Bio developed."

When Kim Young-Hoon was about to explain, the Nine O'Clock News started on the TV.

—Welcome to the Nine O'Clock News. Do you remember CEO Ryu Young-Joon, who drew attention for his HIV eradication project and the establishment of his cancer laboratory in the United States of America? At A-Bio, his company, they developed a real-time blood diagnostic kit.

The news anchor announced.

—This kit allows people to self-diagnose one hundred types of diseases, including various types of cancer, HIV, and the dengue virus, in three minutes.

The structure of the kit appeared on the screen.

—This kit finds and amplifies the disease-related DNA in the blood and uses the Cas9 system to determine the DNA sequence. It shows the diagnosis through a green light.

The anchor said.

—There are a total of one hundred disease diagnosis spots, and each of the spots show the presence of the disease through a green light. This kit can also be linked to a phone, and the application that A-Bio developed can automatically present a specific diagnosis and connect people with a nearby hospital.

“Holy crap...”

Kim So-Jung’s jaw dropped.

“Dad, can I take a picture of this kit and put it on Instagram? And the Ryu Young-Joon fan club...”

“Of course.”

Kim Young-Hoon chuckled.

—... And so, CEO Ryu Young-Joon commented that this diagnostic kit is being produced right now, and it will be available in convenience stores and grocery stores around the country in as fast as two weeks.

Kim Young-Hoon gulped.

The glaucoma cure and the pancreatic cancer cure weren’t items that affected the lives of healthy individuals. But this was different. This was no different from buying a doctor’s diagnostic services from the convenience store.

‘Was it Steve Jobs that said that the best innovation in the twenty-first century would come from the meeting point of technology and biology?’

This was the moment the world took a step towards that point.

Chapter 85: The Diagnostic Kit (2)

“Hey, did you get the diagnostic kit?”

Ryu Ji-Won pricked up her ears when she heard the voices of the students on their way to school. All the students walking into the main entrance were talking about the same thing.

“I saw my mom use that yesterday at home, but it’s so freaking cool. My mom has diabetes and arthritis, and only those two came up when she plugged the kit into her phone and opened the app.”

“I went to the convenience store last night to get it, but it was all sold out. It’s trending like the kkul butter chips[1]. Apparently, people who work at convenience stores buy twenty of them when they come in and sell them for a higher price to people they know.”

“Insane...”

“The supply speed isn’t keeping up with the demand. And people who have the money already bought their supply for a few months. Apparently, they are going to diagnose themselves once every week.”

“Seriously, why are they like that? Why do they have to take all of it? It’s not like a disease that wasn’t there a week before will suddenly appear or something.”

“I guess they’re older, so they’re anxious about it. But I think the supply and demand will settle down with time, right? It’s probably like this right now because it was just released.”

“I think the convenience store at school would have gotten some. Do you want to go?”

“They might be out already. The biotech kids are going crazy about it and going on the school convenience store raids every morning.”

This wasn’t an exaggeration. The biotechnology students were huge fans of Young-Joon. But it was natural as nowadays, Young-Joon made people’s chests puff up just by the commonality that they were both Korean. As such, the pride and respect that would come from Young-Joon being an alumnus of their department would be quite special. Plus, it wasn’t like he was an

alumnus from twenty years ago; Young-Joon had only graduated from school a year ago. Some of the current undergraduate and graduate students had learned directly from him in the lab when Young-Joon was a graduate student.

“No, they are actually crazy. I get it because they are OG fans of Ryu Young-Joon, but...”

“Isn’t it more because this is the homeground? I heard that some people come into the school to see it. They even come to his advisor’s lab.”

Ryu Ji-Won gulped as she listened to them

‘The pressure is no joke...’

It was like this before, but it was getting worse.

There weren’t a lot of people at school who knew that she was Young-Joon’s younger sister. They didn’t even think of that because their age gap was pretty big, but a few of her colleagues and seniors knew that. It was something she revealed at the MT[2] at the beginning of the semester when she was explaining the system that discounted tuition if two or more people in the family were from or attending Jungyoon University.

‘I didn’t know he would become a huge star back then.’

If she knew that, she wouldn’t have told anyone. Already, Ryu Ji-Won was suffering quite a lot from it. There were some people who asked her if they could meet Young-Joon or wanted her to ask Young-Joon for advice on going to graduate school. One of the older girls in her school club who had a promiscuous past wanted her to set up a date. There was no telling what kind of troubles she would go through if more people knew she was Young-Joon’s younger sister.

‘I’m going to hide it as best as I can from now on.;’

Ryu Ji-Won went to the convenience store that was in the basement of the Central Library. Of course, it wasn’t for the diagnostic kit but to get something to drink during class.

All the students who came to the convenience store asked the same thing at the counter.

“Do you have A-Checkup?”

A-Checkup was the product name of A-Bio’s diagnostic kit.

“No, we’re out.”

The part-time worker was also suffering as they were repeating the same thing they would have said since the morning dozens of times.

Ryu Ji-Won quietly paid for her drink and went to the lecture room.

Unfortunately, her class right now was her general biology course. The reason she enrolled in this course when she was a non-major student was to take advantage of her brother. All she would have to do was ask her brother since he was a doctor of biology, right? She wanted to get good grades easily, but she deeply regretted her decision now. The professor for this course was Professor Ban Du-II. He was the professor who supervised Young-Joon from his undergraduate all the way to his doctorate; he was the “Ryu Young-Joon Maker”. And as he had known Young-Joon for a long time, he knew about Ryu Ji-Won as well.

“Oh, hello.” Ryu Ji-Won greeted Ban Du-II when she saw him at the entrance.

“Hi.”

Ban Du-II, who was sixty and close to retirement, was extremely delighted. He had been this way these days. It was natural as his student, whom he taught from his undergraduate to doctorate degree, was sweeping the scientific community.

“Ji-Won, your brother. Is he coming to school anytime soon?” asked Ban Du-II, hinting at something. “The school is doing a World Scholars Seminar. It’s for all students down at the big hall, and our department is inviting a scholar this time. And I’m the one in charge. Your brother would be enough, right?”

“A World Scholars Seminar?”

“The one where we bring in one person every semester. It’s probably the first you’re hearing from it because it’s your first semester. Haven’t you heard about it from your brother?”

“The seniors at my club were talking about how Chomsky came last year. Is it that?”

“Yeah. The humanity department called him for the second semester last year. Well, I got the baton, so it’s my turn to invite someone. If we invite your brother, we can save money since your brother’s Korean and we don’t have to hire a translator.”

“ ... ”

“I’ll talk to the department office and make the lecture fee worth his while. Although it won’t be worth a lot to him.”

“I’ll ask him. But he doesn’t come home very often nowadays.”

“Really?”

“Yes. He’s so busy that he just stays up at work or sleeps at a hotel nearby. He says that it’s a waste of time to drive home.”

“Man. He didn’t work that hard for his degree. Anyways, just ask him for me.”

* * *

Dengue fever was a mosquito-borne viral disease. It affected fifty to one hundred million people in about one hundred countries around the world. This value had soared since the 1980’s. This was because the population of underdeveloped countries increased rapidly, causing people to live in the habitat of mosquitoes, and proper quarantine and epidemiological investigations were not conducted.

The problem was that the occurrence latitude of dengue fever began traveling to the north in the Northern Hemisphere with climate change. Last year, the asian tiger mosquito (*aedes albopictus*) was found in Jeju Island last summer; these mosquitoes were one of the carriers of the dengue virus.

“Dengue fever itself is not that dangerous. It heals naturally with some rest. But still, we must quickly find and take action against confirmed cases of the dengue virus. If left unattended, the virus spreads and the patient is in danger as well,” Ji Young-Soon said. “As you know Doctor Ryu, there aren’t a lot of mosquitoes that have the virus in Jeju Island. But it’s a different story if a dengue fever patient is bitten.

When a healthy mosquito without the virus absorbed dengue virus-infected blood, the virus multiplied in the mosquito's stomach. The virus then spread all over the mosquito's body and infiltrated their salivary glands. When that mosquito bit someone else, the virus in its saliva would enter the body and cause an infection.

"The infection could grow instantly. And there is another problem," Ji Young-Soon said. "There are several different types of dengue virus. When a person infected with one type gets infected with another type, cross-immunity occurs. A strong inflammatory reaction occurs, which leads to dengue shock and bleeding."

Simply put, the person who was infected with the dengue virus first wasn't dangerous, but they could spread the virus if they were bitten by other mosquitoes, and it could be dangerous for the patient as well.

"Thankfully, there hasn't been word of an infected patient being bitten by a mosquito and spreading the virus. So up until last year, we didn't even isolate patients. But this time, we are going to monitor the situation and start isolating patients if it is severe."

"I think that is the best thing to do," Young-Joon agreed.

Ji Young-Soon finally got to the point.

"We need a large amount of A-Checkup in order to continuously check and track it. That's why we are worried."

The sell-out crisis was a phenomenon that made ordinary citizens impatient, but it was a serious problem for the KCDC. It was already late April; mosquitoes were coming out one by one as the weather was warming up.

"There are six hundred thousand citizens living on Jeju Island. We need quite a large supply to have enough for everyone."

"Probably."

"But it is still selling out fast right now, right? Would you be able to decrease the amount distributed to the market and supply it to the government first? We will make a stockpile and use it at Jeju Island."

“But it’s just selling out fast because the supply is in the early phases. Wouldn’t the situation improve as it slowly dies down when people are used to the kits?” Young-Joon asked.

“Of course, we also believe that is the case, Doctor Ryu. And we still have some time until the summer. But we are in a position where we have to be prepared for any kind of situation,” Ji Young-Soon said. “We are a national organization. Working hard isn’t enough; we have to be good. We work on the taxpayer’s dime and we have a responsibility and the power to take care of the Korean people’s health.”

“Alright.”

Young-Joon thought for a moment while touching his lips. He soon spoke.

“Then let’s produce the supply you need at Karamchand.”

“Karamchand?”

“The Indian pharmaceutical company. They have a huge production facility. They probably have one of the best GMP facilities in the world. We are producing diagnostic kits there for the HIV eradication project.”

It was to quickly diagnose HIV patients and focus on their care. magic

“We will adjust the royalty rate and receive a portion of the production to Korea instead. I’ll give you a little discount since it’s to save our people.”

Now, Ji Young-Soon’s face lit up.

“I didn’t know there was such a way. It’s very helpful to have a connection to a super large GMP like Karamchand. Thank you, Doctor Ryu.”

“But you must fully control the dengue fever epidemic in Jeju Island this summer.”

“Of course. We will not let you down.”

There wasn’t a problem if they would have some leftover as they could just send it to developing countries to treat HIV. There was no way demand would go down as long as the HIV eradication project was going on.

* * *

After his meeting with the KCDC, Young-Joon took a little break as he got ready for his next meeting.

—If you want to stop the dengue virus from going around, there is a better way to do it.

Rosaline sent him a message.

“A vaccine? It’s a good idea, but it takes time to develop it. Even if you make it in one day, I have to do a clinical trial.”

—No. This method gets rid of the carrier. You don’t need a clinical trial.”

“Getting rid of the carrier? Mosquitoes?”

—Yes.

Young-Joon squinted.

“What do you mean?”

—Exactly what I said. Extinct the mosquitoes that transmit the disease.

“ ... ”

A mosquito eradication project was one of the oldest leads in biology. In fact, there was actual research going on about this topic. With Google and the Gates Foundation leading the way, many multinational companies were investing a lot of money in this business. But no one had yet succeeded.

“But that business is still being criticized for destroying the ecosystem. And to be honest, I’m a little worried as well.”

It was divided between experts as well; people who said the ecosystem would be destroyed and those that say that we can stand against each other.

—It is because humans are stupid about the ecosystem.

“I think the scientists will be a little angry if they hear you.

—I am just saying it to deliver the truth, not to mock you. Humans do not have a lot of knowledge about the ecosystem.

“I think it’ll make people more mad that you weren’t mocking them or exaggerating... But okay.

—The only problem that occurs when mosquitoes go extinct is that the profit of mosquito spray companies goes down.

“And there aren’t any problems in the ecosystem?”

—Yes.

“Alright. I don’t think we will be able to do the mosquito extinction project in Jeju Island this summer, but let’s hear it. From the part where there’s no problem.”

—Of course there is no problem. Was there a problem in the ecosystem because smallpox or black rhinoceroses went extinct? The ecosystem is more flexible than you think, so you don’t have to worry.

“But insects are different from viruses or black rhinos. And insects like mosquitoes are food to many organisms.”

—There are three thousand five hundred forty-two types of mosquitoes on Earth.

“There are that many?”

Young-Joon felt goosebumps on his entire body.

—Yes. And there are only around ten species that sucks on human blood. There will not be a problem even if you make all of them go extinct. Of course, there will be a small structural change, but it will quickly be fixed because it is nothing fatal. It is because there are a lot of substitutes in nature for an insect like mosquitoes in the food chain.

Rosaline said.

1. Kkul means “honey” in Korean. ?

2. MT is short for “Membership Training”, and it is a Korean university culture where a department goes on a short trip together to get to know people. ?

Chapter 86: The Diagnostic Kit (3)

Mosquito was a word that actually referred to the unit of family, meaning that the mosquito family was as big as the felidae, the cat family, or canidae, the dog family. Just like how lions and cheetahs were part of the cat family, there were a huge variety of insects in the mosquito family. They were divided into forty-three different genres and were then divided into about three thousand five hundred species. Of course, these genres and species could change with the development of genetics as the classification of insects was ambiguous and every scientist had different arguments. One thing that was for certain was that there were only about ten species that sucked on human blood.

“There’s actually less than I thought.”

—Yes. Humanity already made countless species go extinct after the industrial revolution. Nothing will change even if you add ten more species to that. I do not understand why humans are worrying about the disruption of the ecosystem when they are killing mosquitoes.

“Because the impact of extinction can be larger when the organism is at the bottom of the ecosystem.”

—Of course, if you wipe out an organism like bees, humanity will not be able to overcome the repercussions and will collapse. But not mosquitoes. There are countless insects that can replace its role.

This was an extremely polarized problem between scientists who studied insect ecology for decades. In fact, they actually did a mass debate at Silver Spring, and it had totally gone to the dogs. The incident where Doctor Legion, one of the greatest experts in the field, yelled at the people with a flushed face, calling them dumb idiots who didn't have a basic understanding of trophic levels that even undergraduate students knew, was a legendary story in the ecology field. However, the issue was too difficult since it was something that no one could be confident in. Rosaline, who could firmly say that there would be no problem, was the unique one; it wasn't that the scientists were lacking.

“Then I guess it is worth trying if there isn't anything wrong with it,” Young-Joon said.

—That’s right. The mosquito eradication project that Google or the Gates Foundation is doing is inefficient in many ways. And I have much more effective methods.

“How does it work?”

—Use Cas9 to create a mutation in Kpaf2, one of the genes of the mosquito’s seminal vesicles.

“Then what happens?”

—Only male mosquitoes will be born from the eggs laid by the female mosquitoes that mate with them. The males who are born from those eggs will also have that mutation, so they will only have male offspring. After a few generations, the sex ratio will be completely destroyed.

“Holy...”

—You can destroy the sex ratio and make the ratio of males increase exponentially. For Jeju Island, if you make ten million mutant male mosquitoes and release them into nature, the percentage of females after six generations will fall under 0.01 percent. They will be extinct in a few years.

“...”

As Young-Joon was frozen in shock, Rosaline sent him another message.

—I just explained a more stable method at the expense of efficiency.

“What do you mean?”

—If I could, I would manipulate the dengue virus and infect mosquitoes. The fact that the dengue virus can multiply in the stomach and spread to their salivary glands means that it can also spread to their reproductive organs.

Rosaline said.

—If you manipulate it a little, you can make it into a sexually transmitted infection for mosquitoes. You could make a deadly epidemic like AIDS for mosquitoes. And if you let it threaten their lives, the virus will spread in an instant and mosquitoes will go extinct.

“But if I try to use that method, people will oppose it, worrying about what would happen if that deadly dengue virus is transmitted to humans.”

—I calculated that in advance and recommended a more stable method.

“... Yeah, thanks. I guess it might be faster to collapse the sex ratio balance to actually carry it out,” Young-Joon said. “But we can’t do this project in Jeju Island this summer. It will take a long time just to get the mosquitoes ready.”

—Two or three weeks is enough for mosquitoes to hatch from their eggs and become an adult. Even if you consider the gene manipulation stage...

“How long do you think it will take for the Ministry of Health and Welfare to approve of this insane project? It will take at least three months for them just to go through it.”

—Ughh...

Rosaline groaned without sending him a message.

“They will need dozens of documents until it is approved, and it will take a long time.”

—It is really frustrating. I feel like I am going to get cancer.[1]

“You can’t get that.”

—It’s an explanation at your eye level. A type of metaphor.

“We can catch the dengue virus in Jeju Island without any damage if we use the diagnostic kits well because it isn’t very infectious,” Young-Joon said. “We have to use a big knife like mosquito eradication to kill something big, like a cow. We have to prepare it more carefully and take it to an international project.”

—An international project?

“If you list the diseases that mosquitoes transmit, the dengue virus will have to wait in line for a long time. There are several diseases like malaria, yellow fever, Zika, and chikungunya lined up in front. Most of them are infectious diseases that are going around in least developed countries,” Young-Joon said. “It means this project is something we have to do with the World Health

Organization. We have to get support from the Gates Foundation and Google, which started before us, and do it as an international collaborative project.”

Young-Joon was going to start preparing it now and start it as the next project after HIV eradication.

He got up from his seat and went to his secretary’s office next door.

To Yoo Song-Mi, who was organizing a few documents, he said, “Song-Mi-ssi, please contact the WHO.”

“The WHO?”

“Yes. Tell them I would like a meeting about a mosquito extinction project.”

* * *

At the Next-Generation Hospital, Ardip was catching up with the prostitutes at Kamathipura through email.

—Hey Ardip. Are you doing well? Are you better now? After your interview, the International Relief Organization and the Indian government are intervening. The gang and the police who were in charge of this place were either arrested or fled. When we said that we knew you, they gave us a computer so that we could send each other emails. They asked us to tell you to say something good if you do another interview.

Ardip read the email with a smile on his face. The person who sent it was the person who raised Ardip like his mother. She went to school and learned to read and write, but she was sold off to Kamathipura when she was fifteen. She lived in that hellhole for thirty years, but it was coming to an end now. Kamathipura was being freed.

The UN intervened as international attention was drawn to Kamathipura, and the Indian government began cracking down on sex traffickers. Many corrupt police and gangs who were covered up got arrested or disappeared. magic

The only enemy left there now was disease. But truckloads of the HIV cure produced from Karamchand Pharmaceuticals began flying in. And the International Vaccine Institute selected this region as a subject for the HIV vaccine clinical trial and carried out vaccinations. Many people volunteered for the clinical trial

thanks to Young-Joon's powerful performance of using himself as a test subject on TV.

The vaccine was extremely effective. The spread of HIV was being severely hampered. On top of this, major hospitals in India were conducting bone marrow transplantations with the help of A-Bio. They began curing patients one by one with the bone marrow that the technicians sent from A-Bio. Of course, the price of this treatment was not something that the poor could afford, but the WHO was supporting this project. This international project, which was based on sponsors from all over the world, allowed the poor to get a turn slowly but surely.

Kamathipura transformed quickly.

—And Ardip, the diagnostic kit from A-Bio that you mentioned before is being supplied here, too. The supply for India is being supplied by Karamchand. They are using that kit to quickly diagnose patients and treat them.

The diagnostic kit was useful for citizens in developed countries to check their health every day, but its true value was seen in at-risk regions for infectious diseases.

Affordability, precision, and swiftness: these three qualities showed indescribably enormous potential in finding infected patients in a short amount of time and isolating them.

—From what people are saying, the reason why the cure, vaccine, bone marrow transplant, and the diagnostic kit are being primarily supplied to us is because of Doctor Ryu Young-Joon. Apparently, he asked the people high up when he came to India.

Ardip kept reading the email.

—You said you were in the stroke clinical trial, right? I hope it goes well and you can come back to India. I miss you.

Ardip felt his eyes tear up.

He clicked on the reply button and wrote an email. Tomorrow was his flight back home. This was the last email he was sending from Korea.

* * *

Ardip, who arrived at the airport, faced a huge crowd of reporters. He was linked to the demise of Schumatix and the take over by Conson & Colson, A-Bio's new technology and an explosive rise in brand value, the first generation patient of the first stem cell therapy, and the most unfortunate man in the world who was born in Kamathipura and suffered from a stroke, glaucoma, and eye cancer.

But it was different now. His paralysis in his left leg had disappeared as his brain nerves were all reconstructed. He could see well now because his glaucoma had been cured. His unbalance in nutrition had been taken care of as he was intensely cared for at the Next-Generation Hospital. Everyone could tell even without a medical examination; they could see that he had become healthier just from his eyes and complexion.

Ardip had transformed into a completely different person from when he first came to Korea. He was now the luckiest man in the century who had overcome all those hardships.

Numerous reporters had gathered at the news that he was flying back home. Half of them were foreign press.

But a man more famous than him suddenly appeared and stole the reporters' attention.

"It's Ryu Young-Joon!"

When someone shouted, the reporters' all turned to him.

"Doctor Ryu!"

As the reporters were flustering, Young-Joon approached Ardip with the protection from the K-Cops security guards.

"Hello, Ardip," Young-Joon said with a friendly smile.

"Hello," Ardip said in Korean with an accent.

There happened to be a translator who the reporters prepared to get an interview from Ardip. Their conversation was translated on the spot and articles were written right away.

"Are you flying back?" Young-Joon asked.

“Yes. Where are you going, Doctor Ryu?”

“I am going out for a little bit because I have a meeting with the WHO. I didn't expect to run into you here.”

Young-Joon tapped Ardip's shoulder.

“How are you feeling?”

“I am all better thanks to you. I don't have paralysis in my leg anymore, and I can see well. I am completely healthy.”

“That's a relief.”

“Um... When I get my compensation from Schumatix, I would like to donate all of it to the A-Bio Foundation,” Ardip said.

“You don't have to do that.”

“No! Please. If I don't do that... How can I repay all this debt?”

“Then please use it to take care of patients when you go back to Kamathipura. And...”

Young-Joon went on.

“Our legal team has already sued Schuamtix and is getting it to an international trial. We will get our share ourselves, so you don't have to worry about us. The stroke treatment was a clinical trial, so we should actually be the ones to compensate you.”

“...”

Ardip was going to say something, but thought for a bit. Now that he was facing Young-Joon, his gratitude deepened.

Ardip's life was in complete despair. He didn't have anything but two incurable diseases, and the people he called family were all AIDS patients. He cursed his own life multiple times, saying that if there was a God, he wouldn't have put him in a place like this.

But everything changed because of Young-Joon. He had predicted the nasty sabotage from villains like Schuamtix and prepared more than a simple cure.

He was the one who had rescued him from his life, which was trapped deep in the valley of despair, and let him see light. He even fought against AIDS, the worst infectious disease that was taking over Kamathipura. The life there was changing enormously; he could tell by the email he received yesterday.

Ardip couldn't thank him enough. As his heart filled up with gratitude, he felt like he could give Young-Joon his life. Now that he was facing Young-Joon before going home, his emotions became even more intense and made him choke up.

"Thank... you," Ardip said with a trembling voice. "Thank you... Doctor Ryu, thank you so... so much."

Ardip covered his face with his hands.

"I heard that you are supplying the vaccine and the cure... to Kamathipura first... Thank you so much..."

Cameras flashed from all over. Ardip did not care one bit. He could not bear the weight of his emotions that had overflowed here. He felt like the presence of Young-Joon was a reward for a lifetime of pain.

"All I did was supply Kamathipura first because it is an at-risk region for AIDS," Young-Joon said as he comforted Ardip.

"... I will never forget this debt," Ardip said as he hugged Young-Joon tightly. "I will live thinking that I was given the gift of a different life... I will always be grateful..."

"Haha, don't be indebted to me. I hope you are happy and healthy when you get back. Oh, and this is a present."

With a smile, Young-Joon handed Ardip a diagnostic kit.

"I actually brought it for myself, but you should go back and try it."

Click! Click!

The reporters took photos continuously. The most famous scientist in the world and the patient who was rescued by his new technology were together in one frame.

* * *

Young-Joon hadn't planned it at all, but his meeting Ardip at the airport was quite a dramatic scene. As the meeting with Young-Joon was revealed in the World Health Organization's schedule, the dramatic feeling of their accidental run-in became stronger.

Young-Joon, who arrived in Geneva, Switzerland, stopped by the convenience store on the way to the World Health Organization building. On the front page of the morning paper on the newsstand, there were pictures of Young-Joon and Ardip.

"What is this? What does this say...?"

He couldn't read any of it because it was in French, but it seemed like it said something about how touching it was or something.

Science, which was going forward at Rosaline's speed, did not forget humanity. The historical moments that emerged from the cold and thorough advancement of science were surprisingly humanistic.

'No...'

As Young-Joon checked his phone in anticipation, all sorts of online communities and his fan club had blown up.

1. This is a common way to express deep frustration in Korea. ?

Chapter 87: The Diagnostic Kit (4)

Most of the pictures that were sweeping through online communities were pictures taken in Kamathipura in India. Recently, a lot of foreign press were going to and reporting on Kamathipura, where major reforms were taking place, and those pictures and articles had suddenly become an issue. From Young-Joon and Ardip's picture to the vaccination scene in Kamathipura, the huge amount of Karampia that was being transported in large trucks, and hospitals and doctors who were carrying out bone marrow transplants. The hundreds of photos and reports had everything about Kamathipura's revolution. And a lot of praise poured out from online communities all over the world.

—He's not just a scientist or a businessman now, right?

—He is definitely going to get the Nobel Prize. They're probably going to tell him to take his pick from peace, chemistry, and medicine.

—He healed a hellish prostitution hole like Kamathipura...

—I am a businessman in Mumbai. Kamathipura changed a lot. In this town, Doctor Ryu Young-Joon is compared to Ambedkar.

—Who's Ambedkar?

—He was a human rights activist for the Dalit of the caste system. He is regarded higher than Gandhi in India.

—I'm an employee at the WHO. It's not just in Kamathipura, India. HIV is being caught at a rapid speed in Africa and China as well. Doctor Ryu is the genius of the century, but we are working hard as well :(

—Let's go WHO! Let's go Ryu Young-Joon!

—Last week's report from the British Medical Journal: The growth rate of AIDS cases in sub-Saharan Africa was 48 percent last year, but it plummeted to 6 percent. They're predicting that it will turn negative soon...

"Things are going faster than I expected," Young-Joon said to himself as he read the articles on the web.

There was an even more shocking post on his fan club; it was a scene from a comedy show. A member from a girl group was picking her ideal type, and for some reason, Young-Joon was there. magic

His eyes widened.

"Wait, why...?"

He wasn't a celebrity or someone on TV, so why? The thing that was more shocking was that one of the members of the group, Groovy, actually picked Young-Joon.

—It's because I like someone who is smart and has a warm heart. I've been a fan for a long time. I signed up for the fan club a long time ago.

With a short subtitle, her statement was screenshotted and pinned in the fan club.

—Groovy, are you reading this? Doctor Ryu is off-limits.

—Groovy, submit some papers first. We'll observe you first through an interview-type of thing, and then we can think about it.

—Our Doctor Ryu has to experiment! Everyone get lost! Doctor Ryu is already married to science!

“ ... ”

Young-Joon, who was baffled, went to the WHO headquarters, trying to calm himself down. But this place was worse.

This was the headquarters of the HIV eradication project. In places like Kamathipura, Young-Joon was their savior, but here, he was the revolutionary who had started this huge project.

“Oh! Doctor Ryu?”

An employee, who was bald and looked to be in his forties, froze when he saw Young-Joon. He wiped the sweat off his forehead with his hand and held out a notepad and pen in a fluster.

“I'm a fan of yours. Could I get your autograph?”

That was the start. On his way to the Director-General's office, countless employees who heard about his arrival from somewhere all came over and asked for his autograph and a picture.

“Leave the project to us, Doctor Ryu!”

“Doctor Ryu, I am voluntarily resigning soon, but it's truly an honor to do something as important as HIV eradication before I go.”

“I went to Henan Province in China last week. Things have gotten a lot better. Apparently, they used to run a plasma business, so people sold blood. They said that it became Hell with AIDS as they began reusing disposable needles.”

“I love it because I am seeing HIV disappear in real-time. The results are really tangible if you examine patients with the diagnostic kit. HIV is caught by the diagnostic kit until you use a treatment like a bone marrow transplantation. When you see that it's no longer there after the procedure, it's touching and thrilling...”

Young-Joon was in shock as he heard the employees talk all around him. Even the managers who came out to control the employees all went back after getting his autograph.

* * *

Young-Joon, who barely made it to the Director-General's office, delivered his congratulations and compliments to Tedros.

"I saw that HIV is being caught quickly. It seems that way from what the employees are talking about on the way here. I heard that the increase dropped from forty-eight percent to six. The World Health Organization is the World Health Organization for a reason. Congratulations."

"Haha, it's all thanks to you, Doctor Ryu," said Tedros, the Director-General.

This tangible result that came out in a short period of time was evidence that the WHO was focusing all their power and strength on this project. It was also because in addition to the vaccines, cures, and bone marrow transplants, another powerful ally was added on the technical side.

"It's all thanks to the diagnostic kit you developed. At this rate, I don't think it will take three years. The spread was caught quicker than I thought."

There were two ways to stop the spread of an infectious disease:

1. Preventing the virus from spreading even if an infected and non-infected person comes into contact with vaccines and such.
2. Quarantining so that the infected and non-infected do not come into contact at all.

They could not give vaccines to the billions of people without HIV, and they could not perform the expensive and difficult bone marrow transplant surgery on infected patients all at once. As such, the first way was impossible.

But if they used the diagnostic kit, they could easily do the second way since all they had to do was go to at-risk areas for HIV, give out a bunch of kits, diagnose them on-the-spot, then isolate patients. The World Health Organization was doing this job very well.

“You made us the gun, the bullet, and you taught us how to shoot it, so we would be idiots if we couldn’t even do that. We’re a United Nation organization; this is the least we should be doing,” Tedros said with a hearty laugh. “Doctor Ryu, I think the diagnostic kit will be used to catch a lot of other infectious diseases. Let’s just commission it to a lot of GMP production facilities and produce it in huge quantities.”

Tedros gulped down the fruit and vegetable juice from a small juice pack.

“With this, we can catch all kinds of infectious diseases like dengue, malaria, and Zika.”

“All those diseases are transmitted by mosquitoes, right?” Young-Joon asked.

“That’s right.”

“Then let’s get rid of mosquitoes.”

“Oh! Mosquitoes? Man, you really think big, Doctor Ryu. You’re talking about the one being done at Google and the Gates Foundation, right? We can try it if you have a good idea.”

“Yes. But this will have to be an international project. It will be bigger than HIV eradication.”

“The current mosquito elimination project is focused on reducing the mosquito population to less than eighty percent in tropical climates alone. It is having a hard time, but do you have a good strategy?”

“Pardon? No, I’m not talking about reducing the population, I’m talking about making them go extinct completely. Let’s get rid of the thirteen species that are the disease carriers.”

Tedros set down the juice he was about to drink. If he drank it, he might have spat it out in shock. As he started at Young-Joon like he didn’t understand, Young-Joon explained.

“That way, the malaria parasite and the viruses will go extinct. If I start this, I don’t intend on compromising on an ambiguous goal like population reduction. That leaves the risk of the disease developing.”

“... But Doctor Ryu, there were no significant results in that ambiguous goal of population reduction. Well, there have been some varying results, but not most of them. I’m saying that it’s not an easy thing to do even if Google or the Gates Foundation does it...”

“I know. The technology to reduce the number of mosquitoes mostly works by manipulating the male mosquito’s genes to make the larvae unable to hatch from their cells.”

“That’s correct.”

“But it’s only as effective as the number of mosquitoes that people manipulate and put into nature. If those mosquitoes die, it’s over.”

“... That’s right. If not that, then how...”

Tedros had no idea what Young-Joon was thinking. His eyes shook.

Young-Joon said, “We make it so that only males are born from the eggs of the female mosquitoes that mated with genetically modified mosquitoes. And if we make the offspring from those newborn mosquitoes only male, we can make a snowball effect by modifying male mosquitoes and releasing them into nature once.”

“Is that possible?”

“It is,” Young-Joon said. “The reason I asked for a meeting today was because I was curious if the WHO could afford to work on this project.”

“Hm...”

Tedros thought for a bit.

“Like you are worried about, we lack manpower right now because we are pouring everything into HIV eradication.”

“Of course. It’s not an easy disease.”

“But this is also an important project. We will try to prepare for it. However, we also need to do some research in advance on what disturbances will occur in the ecosystem,” Tedros said. “If you carry out this project with us, you may be criticized by ecologists. As the Director-General of the World Health

Organization, I am on board because I think it's more important to get rid of infectious diseases, but..."

"I know. I will make some data about the kind of disruptions that will occur in the ecosystem and whether it is something we will not be able to handle to convince them."

* * *

Young-Joon's humane image was in the spotlight during Ardip's flight, but his star quality was still rooted in his ingenious research ability.

About a week after Young-Joon returned from Geneva, two huge papers and a cover news article was published in *Science* like he was trying to prove that he was a scientist.

[We differentiated induced pluripotent stem cells into cartilage cells.]

[We differentiated induced pluripotent stem cells into skin tissue.]

The differentiation into cartilage cells and skin tissue: the only project Young-Joon had left among the ones he started as he built the Next-Generation Hospital was making organs and spine regeneration.

Another powerful whirlwind began sweeping through the medical community.

First of all, cartilage cells had the potential to cure a very common and uncomfortable disease like arthritis. How many patients would there be if the number of patients that had rheumatoid arthritis, which occurred in young people as a type of autoimmune disease, and degenerative arthritis, which usually occurred in older people, were combined? There were nearly five million people just in Korea, meaning that one in ten people were arthritis patients.

Then what about skin tissue? The skin cell that A-Bio created was not just one type of skin cell. They had differentiated a total of seven types of cells each from epidermis cells that had the characteristics of the ectoderm, tissue cells from the mesoderm, and the dermis layer from the cranial neural crest cells. This meant that they not only could regenerate the outer layer of skin, but they had the potential to make skin itself. Samuel, who was admiring the huge potential value of it, even wrote a review on the paper.

[The skin is a complex organ that is intricately connected. If A-Bio succeeds in making this with organoids, it looks like they will be able to create hair follicles. I believe that it will be possible someday as they have already succeeded with organoids before.]

'Create hair follicles.'

It was a statement that widened the eyes of many plastic surgery clinics. It meant that they could give bald people hair. Of course, it was true that cartilage and skin regeneration still had a long way to go as it was still in its development phases, but people felt like they would be able to see some results in the near future as Young-Joon's research speed was abnormally fast. And in this noisy situation, a fascinating story began circulating among the sports news and rumors.

[Ryu Young-Joon, the CEO of A-Bio, has 122 new drug patents. They are not revealed to the public yet as it has not yet been one year and six months since its application and is still being approved, but there is a rumor that Doctor Ryu Young-Joon has 122 drugs for pet and livestock animals. According to Mr. K, an employee at the patent office, the approval period is getting longer because there are a lot of patents, but there is a high chance that it will be approved soon...]

This rumor had basically poured oil into Young-Joon's fame, which was already burning up. And there was one person who was feeling anxious about this. It was Kim Hyun-Taek, the lab director of Lab One.

CTO Nicholas Kim's term was about to end. In this atmosphere, there was a very high chance that the future CTO position of A-Gen would go to Young-Joon.

Kim Hyun-Taek could not go home and was lost in thought for the night.

Chapter 88: The Diagnostic Kit (5)

When CTO Nicholas Kim retired, A-Gen would choose their next CTO from the in-house directors. How would Young-Joon react?

'What would I do if I was Ryu Young-Joon?'

Kim Hyun-Taek often thought about that. Young-Joon was a smart man, and he made sure to take things that would increase research speed, even the

little things. Then, wouldn't he obviously try to take over that role, which would allow him to supervise all of A-Gen's research and development. A-Bio was going well, but there was no reason for him to decline if A-Gen offered him everything. Normally, ordinary people wouldn't be able to manage both at once so they would never even try, but Young-Joon definitely would. If Kim Hyun-Taek competed with Young-Joon over that position? He would never be able to win, as Young-Joon's performance was overwhelmingly better.

It would be a problem if Kim Hyun-Taek won as well. The fact that he was the CTO and not a lab director meant that all of A-Gen's research and development was in his hands. It meant that he was the supervisor of the technology competition with A-Bio. He was even less confident in this.

But he couldn't give Young-Joon the CTO position and be his subordinate because he could find some dangerous data if he could access experiment records of all security levels in the company. There was no telling what Young-Joon would do with his personality. This was also the reason why Ji Kwang-man went overboard and tried to eliminate Young-Joon, who was trying to join the core of management.

'Idiot... Should have done it well.'

Kim Hyun-Taek let out a sigh.

The best scenario would only be this: after Kim Hyun-Taek becomes A-Gen's CTO, instead of Young-Joon completely being severed from the company and competing against them, he supports him as the CTO of A-Gen. It was a ridiculous plan, but there was one way to get this picture. Right now, Young-Joon was so popular that a girl group member said she liked him on a comedy show; he was the national hero. Kim Hyun-Taek was going to use that fame and prestige.

* * *

When Young-Joon was having dinner at work, he got a phone call from Ryu Ji-Won.

"Scholars Seminar?"

Young-Joon frowned like he was baffled.

—For your information, Chomsky visited last month.

“I’m not a world scholar. I think my professor is way too proud of his student.

—Why? He should be.

“Even if I have some good results, I’ve only been active for about six years in the academic community, even if you include my years as a grad student scientist. I’m not a scholar. No, I don’t want to. I don’t want to be annoying.”

—Why does that matter? Look at how many incurable diseases you’ve cured.

“The only treatment that’s been commercialized is the glaucoma cure kit, okay? The others are doing well in clinical trials, but a lot of drugs stumble in the second and third phase.”

—Even without all that, you should be called a scholar with just the diagnostic kit alone.

Ryu Ji-Won said.

“Hey, I can’t be called that, alright? Don’t say that anywhere else. People who are world-renowned scholars or experts are usually people who have researched for over thirty years or Nobel Prize winners.”

—One of those people is Carpentier or Carpenter, right? Doesn’t he work for you?

Young-Joon was at a loss for words.

“Well... He does, but...”

—Well, I delivered the message. Professor Ban really wants to see you again, saying he wants to benefit from his student.

“But still...”

—I’m hanging up, okay? I have dinner plans. I have to go now.

Beep.

After hanging up, Young-Joon held his head like he had a headache.

“What happened?” Park Joo-Hyuk asked.

“Ryu Ji-Won.”

“What did she say?”

“Professor Ban wanted her to ask me to do the seminar.”

“Seminar?”

“You know, the World Scholar Seminar we do every semester at school. The bioengineering department has to invite someone, and I guess Professor Ban is in charge of it. He asked me to come.”

“Wow. Doesn’t Jungyoon University use our tuition to bring legends in the field? I can’t believe you made it on that list.”

“I can go because I’m really indebted to Professor Ban, but that title is so cheesy and burdensome...”

“Why does it matter? Just ignore it and go. Didn’t you say that Professor Ban paid for your tuition and living expenses when it was really hard for you during grad school?”

“... Yeah. He’s an important teacher to me. I should repay that debt.”

There were a lot of incidents in the ten years that Young-Joon was being supervised by Ban Du-II. He had made a mistake and caused trouble when he was doing an administrative errand, and there were times Ban Du-II was put in a sticky situation when Young-Joon fought with other professors due to his personality. Still, Ban Du-II protected Young-Joon until the end. Although most of the professors were psychopaths who had terrible personalities, Ban Du-II had integrity and was humane.

“He’s one of the few people I respect as a teacher in this field,” Young-Joon said.

Young-Joon was reminiscing about when he was in university when Park Joo-Hyuk began laughing silently beside him.

“Why are you laughing?”

“Do you remember when you cursed at the school because they were using our tuition on such shitty things?”

“Did I?”

“Yeah. You were furious then. You heard from somewhere that they spent three million won to invite Jamie Anderson and you complained about it for the entire lecture.”

“Jamie Anderson is a racist. Why would you bring someone like that to the school? It’s demeaning.”

“What you were angry about back then wasn’t that Jamie Anderson was a racist, but that you felt like your tuition was going to waste for bringing that racist to school.”

“I was a student back then and I was poor.”

“And now, you’re the hippo that’s swallowing up that tuition.”

“Ugh... I’m going to return it so they can use it for scholarships.”

Young-Joon shook his head.

* * *

The World Scholars Seminar took place in the Grand Hall for the students. Professor ban Du-II, who was in charge of the scholar invitation and event, briefly introduced Young-Joon.

“He’s the most famous person right now. Please welcome Ryu Young-Joon, CEO of A-Bio, to the front.”

When Young-Joon went up to the podium, all the students simultaneously pulled out their phones. They were all taking photos of him.

After waiting for the students’ excitement to die down a little, he greeted them.

“Hello. My name is Ryu Young-Joon.”

“Wooh!”

Clap clap clap!

Cheers and applause poured out from the students. Ryu Ji-Won was also among them. She was staring at him like she was very interested.

'She's going to take a picture and tease me about it for a long time.'

Young-Joon took a look at all the students.

"I came to Jungyoon University around ten years ago as an undergraduate student. And I did my master's and doctorate here as well. Professor Ban here supervised me the entire way," Young-Joon said. "When I was a student, I used to sit here and listen to the lectures from scholars all over the world, but it feels weird that I am the one up here now. I also think that title is too much for me, someone who is only thirty. I came here thinking that it meant that I should work harder."

Young-Joon could see Ban Du-Il grinning.

"Professor Ban asked me to talk about some important things we are working on at A-Bio, important events in my life, or my beliefs. So for today's lecture, I decided on the topic of research ethics and the diagnostic kit," Young-Joon said. "The standards for research ethics change depending on how you obtain information about the disease from the patient and how you code it, and for this..."

The lecture had started. It wasn't an easy topic, but it seemed familiar as the diagnostic kit was a very famous product.

Young-Joon's lecture went on for about an hour and a half. There were a lot of students from majors other than bioengineering, so he stayed away from things that were too technical. He also translated all the words used in the field into Korean. He also made some jokes here and there.

The lecture came to an end, and there was a question session.

"Are there any questions?" Young-Joon asked.

The bioengineering students all raised their hands first.

"Where do you get your creative ideas when you work?"

'I can't say that it's from Rosaline...'

"Scientists have to read a lot of papers. You obviously have to dig deep into your specialty, but some research that is a little different from yours will help in getting creative ideas."

“Have you considered being a professor at Jungyoon University? If I studied under you, I think I could actually enjoy studying for the first time in my life,” said one of the students.

The audience laughed a little.

“I like being a corporate scientist right now. Companies have a lot more money than the government or universities. Universities are a good place to do basic research, but companies are a good place to do product-related research. I want to be making products right now.”

The vibe of the seminar at Jungyoon University was light and friendly. Young-Joon’s image became friendlier and softer as the question session went on as he was an alumni that had graduated recently. There were professional questions asking about what was missing from the research they were doing, and there were questions asking for advice on going to graduate school. When it was near the end, there were playful personal questions.

“This is a little bit of a personal question, but are you dating Groovy...”

“Hahaha. I’ve never even met them,” said Young-Joon as he waved his hand.

The students laughed along.

“I guess we’ve gotten all the questions since people are asking about girl groups now,” Young-Joon said.

That was when a student’s eyes widened as they were reading the news on their phone. They raised their hand and asked like this was a perfect time.

“Mr. Ryu, apparently the Blue House is saying that they want to invite you as the director of the Office of Strategic R&D[1] Planning at the Ministry of Industry. They say it’s a CTO position for the country...”

Young-Joon squinted his eyes. The director of the Office of Strategic R&D Planning: the CTO of a country. It was a similar role to James, the Director of the White House Office of Science and Technology.

“Wow...”

The students admired him. Ban Du-II froze a little.

That position was a minister-level public office role. Obviously, he could not also work as a board director of a company. If he went there, he would have to back out of A-Bio or A-Gen.

The student asked, “Are you going to take it?”

They looked like they were very much anticipating this. It was natural as they were already overpowered by the enormous title of national CTO.

“ ... ”

Young-Joon thought about his answer for a moment.

“It’s the first I’m hearing of this. I’ll have to give it some thought.”

* * *

The seminar came to an end.

“Can we talk in my office for a bit?” Ban Du-Il asked.

“Yes, of course. But I just need to make a phone call.”

Young-Joon excused himself and came outside. He went to a place where there were relatively few students and took out his phone. He called Yoo Song-Mi, his secretary.

“Secretary Yoo, what is this about? What is this thing about the director of the Office of Strategic R&D Planning all of a sudden?” Young-Joon asked.

—It’s the CTO for the country. I was just contacted today, and the Blue House wants to invite you to be the country’s CTO.”

“ ... ”

—I said that I would deliver the message, but... You’re not going to do it, right...?

Yoo Song-Mi asked.

—It’s true that it’s an honorable position at the vice minister-level, and it is an important position that coordinates Korea’s overall science and technology policies, but it is also a public office. You can’t work somewhere else.

“Yes. Did someone from the Ministry of Trade, Industry, and Energy come by chance?”

—They asked for your schedule, so I told them that I would get back to them after asking you. The time you have available in your schedule now is five o’clock in the evening tomorrow, or two o’clock on Friday.

“Please set up the meeting for tomorrow,” Young-Joon asked.

1. R&D is short for Research and Development. ?

Chapter 89: The Diagnostic Kit (6)

After ending the call, Young-Joon went to meet Professor Ban Du-II. He looked full of concern, so Young-Joon purposely went in with a smile.

“How have you been?” asked Young-Joon.

“Yes, I have been well. I feel very energized right before my retirement thanks to you,” Ban Du-II said. “Young-Joon, are you going to take the national CTO job?”

“I don’t really want to,” Young-Joon replied calmly.

Only then did Ban Du-II's face brighten up. He let out a sigh of relief.

“Good. You have to be researching right now. The national CTO is an important position that supervises the entire direction of Korea’s research and development, but you can’t do research yourself. Your main job is to give research funding to universities and organizations and set up projects.”

“Yes.”

“I think other scientists can do that too, although I don’t know if they can do better. But you are the only one who can eradicate HIV and use stem cells to develop new treatments.”

“ ... ”

“If you leave the forefront of this country’s research and development, everything will become that much slower.”

“I also still want to work as a frontline scientist.”

“Really?” magic

Ban Du-Il looked like he was glad to hear that.

“That’s such a relief. I was so anxious when I heard it,” Ban Du-Il said.

“Young-Joon, I think this idea came from people who purely wanted to use your abilities for state business, but for more calculating people, I think they want to use your image for their approval rating.”

“Approval rating?”

“There’s only one year left until the election.”

“Oh.”

“The KCDC is trying to catch dengue fever in Jeju Island right now after you developed the diagnostic kit, right? They are trying to ride that wave and recruit a brilliant scientist to create an impression of a government that is experienced at leading science. Though, it will actually help them if you come.”

“I understand what you mean,” Young-Joon replied.

“Then you are going to decline, right?”

“After I see what they propose.”

Ban Du-Il’s grin disappeared immediately. He looked nervous.

Young-Joon smiled.

“It’s a good position and a great opportunity. I am going to see if there’s something I can use for the advancement of science. It won’t be too late to make a decision then.”

* * *

The minister of the Ministry of Trade, Industry, and Energy, visited A-Bio to meet Young-Joon. Yoo Song-Mi brought out some mate tea and fruit.

“I’m honored to meet you, Mr. Ryu, the hottest scientist in the world right now.”

Minister Lee Yoon-Ho reached out. Young-Joon shook his hand.

“Nice to meet you. I am Ryu Young-Joon. Please, sit.”

Lee Yoon-Ho was an innocent-looking man with round facial features. He silently stared at Young-Joon for a moment.

“Mr. Ryu, I know what you are worrying about regarding the national CTO position.”

“What I am worrying about?”

“I think there are two things. The first is that you won’t be able to research and develop when you leave A-Gen and A-Bio. The other is whether this is a scheme related to the approval rating of this government, correct?”

“Yes.”

“The people who should know all know about the fight between you and Congressman Shim Sung-Yeol. So, I knew that you would worry about something like this.” Lee Yoon-Ho chuckled.

“Is that so?”

“Because of that, the people in the government who wanted to make you the poster boy for science disappeared. If not for that, people from several parties would have already come to you and bothered you.”

“Are you saying that this has nothing to do with that?”

“To be honest, it does. The approval rating of the Republican party has gone down a lot. Isn’t the KCDC trying to catch the spread of dengue fever in Jeju Island right now? There is an ulterior motive that is trying to create synergy with that and maintain the government.”

“Then I will not be the director of the Office of Strategic R&D Planning.”

“I knew you were going to decline, so at first, I also declined when I was ordered to recruit you, Mr. Ryu,” Lee Yoon-Ho said. “But on second thought, Mr. Ryu, it wasn’t. The more I thought about it, the more I knew that there was no one better to take the position than you. The government is doing their work right now; I’m saying that it’s not just flattery.”

“There are other people who can take that position. There are a lot of brilliant scientists in Korea.”

“There aren’t any creative scientists,” Lee Yoon-Ho said firmly. “Being the CTO of the country means that they will be providing the directions to all the research and development happening in this country. Simply put, it is a role that requires insight into future business prospects.”

“ ... ”

“Who is the one changing the trend of medicine right now by pioneering a new field of stem cells and creating a next-generation hospital? Is there anyone in Korea who has a better insight into future business prospects than you, Mr. Ryu?”

Spit flew out of Lee Yoon-Ho’s mouth. He began gesturing with his hands and feet and passionately persuading Young-Joon.

“In less than a year, you succeeded in curing prominent diseases like glaucoma, Alzheimer’s, and pancreatic cancer. You even commercialized one of them. Please lead the country with your abilities, not a private enterprise like A-Gen. I am asking you to see things more nationally. If you are the captain, all domestic companies will follow.”

Lee Yoon-Ho was serious.

‘Recruiting Ryu Young-Joon is in the nation’s best interest.’

Young-Joon could show the best performance in the frontline of research, but he could do much bigger things as the director of the Office of Strategic R&D Planning. Lee Yoon-Ho seriously thought so.

“But I understand that the position of director doesn’t allow me to just lead the research direction in any way I want. Roughly speaking, I can’t just take that role and order SG Pharmaceuticals to make a drug in this way like I’m ordering a subordinate, right?”

“Do that!” Lee Yoon-Ho shouted confidently.

“Pardon?”

Ryu Young-Joon tilted his head like he was baffled.

“It is true that it was a position that didn't actually do the projects, but just hand them out. But it could be different if you do it, Mr. Ryu. Design experiments

like you are doing now and order companies and universities to do them. You can consult them on their research.”

“ ... ”

“And we have a four trillion won budget for the office. Use part of it as funding for your own research, Mr. Ryu.”

“That’s tax money, though. It is okay to give it to universities or research institutes that win project contests, but it’s embezzlement if I use it for research that I want to do.”

“It won’t be. We are going to push to pass a new legislation so that you can research, Mr. Ryu.”

“Hm...”

Young-Joon crossed his arms and thought. It was a more special proposal than he had thought.

‘I didn’t think they would do this much to recruit me.’

Lee Yoon-Ho was staring at Young-Joon with a desperate and sincere look in his eyes.

“Sir?” Yoo Song-Mi knocked on the door and came in.

“I’m sorry to interrupt your meeting, but I have something to show you.”

She approached Young-Joon and whispered in his ear.

Young-Joon opened his email on his phone. The news article Yoo Song-Mi sent him popped up. It was about seven famous scientists in Korea declaring their support for the decision of the Ministry of Trade, Industry, and Energy.

[Ryu Young-Joon, the CEO of A-Bio, has changed the trend of medicine in very innovative and creative ways, and he is presenting new research directions. If he only works at A-Bio, his abilities will only be limited to the pharmaceutical industry, but we think his potential can determine the entire industry of science in this country. If CEO Ryu becomes the director of the Office of Strategic R&D Planning and takes control of the direction of science in Korea, we believe that several companies, universities, and research

institutes will faithfully follow his instructions and produce more effective results...]

Young-Joon quickly read through the entirety of the declaration.

[... And so, we believe that the decision of the Ministry of Trade, Industry, and Energy was very wise, and to this, Kim Hyun-Taek, the Lab Director of Lab One of A-Gen, and six others strongly support Mr. Ryu Young-Joon's appointment as the Director of the Office of Strategic R&D Planning.]

* * *

"Mr. Ryu Young-Joon? He is also the CEO of A-Bio, but he is also a director of A-Gen. He is a talented individual who is the closest to being the next CTO of our company. Of course, we don't want to let him go," said Kim Hyun-Taek during an interview.

His declaration had gathered a lot of attention as he had just given up the best scientist in the same company to the country. A lot of reporters had come to ask him more about his declaration of support, and he had accepted all of them.

"But let's think more nationally. If Mr. Ryu becomes the CTO of A-Gen, A-Gen will grow rapidly. Then what? That's it. It stops at A-Gen growing rapidly. But if Mr. Ryu becomes the director of that office, he will be able to grow the slice of the pie that this country's scientific community has," Kim Hyun-Taek said. "The position of A-Gen's CTO can be filled by myself or any other lab directors. But Mr. Ryu is unique. Wouldn't the world develop faster when everyone goes to a position that suits their capabilities? I want him to lead science in this entire country. I am introducing the best talent at our company to the government in hopes that he will leave a private corporation like A-Gen to us and lead this country.]

Kim Hyun-Taek's interview caused quite the stir.

In addition, the Ministry of Trade, Industry, and Energy announced a policy that would guarantee Young-Joon's autonomy in research and connect him to various companies and universities along with the final authority on a four trillion won budget.

The public went wild.

—He is using his amazing ingenuity for the development of the country, not a private corporation.

The public began picturing a future where Young-Joon decided on the direction of the country's science and policies and companies and universities followed along to develop rapidly.

And exactly three days after that, a coalition of about one hundred professors around the country issued a state of opposition with Professor Ban Du-II leading the charge.

[A tiger should be left to roam the jungle.]

[The idea of the Ministry of Trade, Industry, and Energy is excellent, but it is not realistic. It is not because CEO Ryu is not capable enough, but because of the structural limitations of the national industry. Firstly, the Ministry claimed that they will allow Doctor Ryu to conduct research within the department, but in what research institute? Will they hire new scientists in the ministry, where only administrative employees exist? This irresponsible proposal that was blurted out in the absence of any required infrastructure is just another typical hasty, Korean-style red tape. Secondly, the Ministry claimed that they will provide four trillion won of funding to Doctor Ryu, but given the reality that SG Electronic's one-year research budget is thirteen trillion won and A-Gen's one-year budget is seven trillion won, it raises the question whether that amount will be enough to realize Doctor's Ryu's potential. Thirdly...]

The public, who were excited by the dream of a national science industry led by Young-Joon, was met with opposition.

—Wow. What's going to happen?

—So what is the condition where Ryu Young-Joon can realize his potential to the fullest?

—Korea's administration is just garbage. Just stay at A-Bio, Doctor Ryu.

—He's going to be leading the nation's science and technology. Isn't that obviously going to be more helpful than him leading A-Gen or A-Bio?

—That "leading" he is doing is just giving projects to private corporations. It's just like, "Hey, develop an anticancer drug. I'll give you a billion won." But

Doctor Ryu's ingenuity isn't about giving money; it's about developing anticancer drugs himself.

—But can't he just design the R&D and give orders to companies like SG Pharmaceuticals or A-Gen like he's doing now? It's basically just making companies in Korea into Ryu Young Joon's hands and feet.

—Realistically, does that make sense? It is an infringement of corporate management rights. We're not a dictatorship or something, and you want the government to commit illegal acts?

—Fxxk, I don't know. It just seems like Doctor Ryu is too much of a genius that one job isn't enough.

—Whatever happened to Professor Shin Jung-Ju, the main commentator of A-Bio? Hurry up and go on the radio and interpret this situation...

The public was as noisy as it could be. The public opinion was completely polarized. One media outlet opened a poll about Young-Joon's appointment as the director of the Office of Strategic R&D Planning. The people in favor were slightly stronger at sixty-one percent supporting it.

Kim Hyun-Taek eased up a little bit. There were a lot more scientists against it than he had thought, but it seemed like there was a high possibility that Young-Joon would accept the position. He wouldn't be able to disappoint the public easily as he was the national hero. Plus, he would actually be able to do a good job in that role. From then on, it didn't matter if Kim Hyun-Taek took orders from Young-Joon because he wouldn't be a competitor anymore; he would be a government employee that gave him projects.

And when everyone's attention was drawn to this issue, Young-Joon held a press conference.

"Hello, my name is Ryu Young-Joon."

He went up to the podium and grabbed the mic. Dozens of cameras flashed towards him.

"First of all, I would like to thank the Ministry of Trade, Industry, and Energy, who recommended me to such an important position," Young-Joon said. "I have discussed this with a lot of different people. I also met with Doctor Kim Si-Yeon, the current Director of the Office of Strategic R&D Planning. She told

me that she only has six months left in her term and that she would like me to be her successor.”

Click! Click!

The camera flashes did not stop.

Young-Joon said, “For that important position, I recommend the current CTO of A-Gen.”

The reporters’ eyes widened.

Kim Hyun-Taek screamed in his office.

Young-Joon said, “The Ministry of Trade, Industry, and Energy said that they would give me the authority to specifically direct industry-academic research. But that risks the government infringing on the research autonomy rights of industry and research. Additionally, it is not realistic because it is important that the instructions for research and development understand the experimenters’ expertise and proficiency. I know that well about the scientists at A-Gen, but not about other industries or academic institutions. It would only be counterproductive for me to direct their research.”

“ ... ”

“But I know what the nation expects from me. Therefore, when the Ministry of Trade, Industry, and Energy requests advice on policies, I promise to answer. I swear that I will use the knowledge or ideas I have for this country like a public good,” Young-Joon said. “Now, I will speak about the CTO of A-Gen I recommended. CTO Nicholas Kim is a world-renowned scientist who has studied in the industry for forty years. Not only is he an expert in biology, he is knowledgeable in physics as well. He has experience in leading a company larger than mine, and he has experience as a professor as well. I believe that he is someone who would be able to use my advice excellently, even if it is lacking, to advance science in Korea. Please have as much faith in him as you support me.”

With a smile, Young-Joon added, “And just in case, CTO Nicholas Kim is Korean. His Korean name is Kim Hyun-Sik.”

Chapter 90: Cellicure (1)

With Young-Joon's announcement, Nicholas became one of the most searched-up people on the web. Nicholas was a scientist who was very knowledgeable in biophysics and protein engineering. He was pretty famous in the industry, but it was the first time he had been in the spotlight so much as his job as a scientist was distant from the public eye.

Nicholas was having some tea in his office while he read Young-Joon's announcement. There was a slight disturbance outside his door.

—Is the CTO inside?

It was Kim Hyun-Taek's voice.

—Yes, he is. But did you schedule a meeting?

—No, but I'll step in for a moment.

—The CTO has to leave soon...

—I just need a second.

Click.

Kim Hyun-Taek opened the door stubbornly.

“What happened?” Kim Hyun-Taek asked as he sat beside Nicholas.

“What do you mean?”

“Are you going to be the director of that office? Did Ryu Young-Joon tell you that he was going to do this?”

“Mr. Ryu.” Nicholas corrected Kim Hyun-Taek. “Mr. Ryu asked me to do this. He said that he needed to work more in the frontlines of research, but someone had to take that important position. He said he could trust me.”

“...”

Cold sweat ran down Kim Hyun-Taek's cheek.

“So when are you going?”

“You’re worried that Mr. Ryu will take over the empty CTO position at A-Gen if I go right now, right?”

“... Yes.”

“Don’t worry. I am not leaving right away since the current director’s term is not over yet,” Nicholas said. “And Mr. Ryu does not want to come to A-Gen right now. He is looking for the right time. He is preparing to merge A-Bio and A-Gen and make this place his main base. The moment he will come to swallow this place up will probably be when he comes to do the stock exchange he promised with our CEO.”

“Mr. CTO.”

Kim Hyun-Taek stuck out his head close to Nicholas.

“Sir, aren’t you old friends with Mr. Yoon? Are you going to betray him? Do you want to hand over this company to Ryu Young-Joon?”

“All I am trying to do is appoint a person who is worthy of the CTO position of the country’s top pharmaceutical company that will be created as A-Gen and A-Bio merge. I don’t want to know about the rest, and it’s none of my business.”

“What if Ryu Young-Joon finds out about that secret?”

“That secret?”

“The one. About anthrax...”

Nicholas closed his eyes with a serious face.

“Confess. Turn yourself in the few months I have left before I leave the CTO position and Mr. Ryu comes here, finds out about everything and destroys everything,” he said. “I also delivered the message to CEO Yoon as well. When you and CEO Yoon decide, I will take care of the problems myself without dirtying Mr. Ryu’s hands and leave.”

Kim Hyun-Taek glared at Nicholas for a while.

“I can’t do that,” he said.

“Director, do not force me to expose that incident.”

“... You will kick yourself for this and deeply regret your decision.”

* * *

Kim Hyun-Taek, who returned to the lab, began making rounds to every department. This was one of the situations that scientists feared the most, as he would attack them until everything was burned down if he found one little thing he didn't like.

“Who uses a pipette and leaves it on the lab bench with the volume adjustment knob still on? Who manages their equipment like this?”

The shouting started from Room 101, the first room Kim Hyun-Taek went into.

As soon as Principal Scientist Kim Joo-Yeon figured out the situation, she quickly returned to her lab and let the Anticancer Drug Research Department know.

“The director is making rounds to the labs from the floor below us and shooting everyone up, so pull yourself together and be careful of what you do.”

“Ah, again? What happened this time?” Senior Scientist Kim Hyun-Seok said irritably.

“How should I know? The lab director is going crazy today, so be careful. Senior Park, you didn't write four days-worth of lab notes, right? Did you do that? He's going to go nuts if he finds out.”

“I'll write it right now,” Park Yeon-Seo said as she quickly grabbed her notepad.

“You might get caught writing it here, so go to Room 212 and write it. If he asks why you're there, just say that you stopped by to freeze-dry some protein.”

“Okay.”

She took her notepad and quickly left.

“Wait.”

Kim Joo-Yeon flinched when she thought of something.

“Didn’t the Diagnostic Department fight with the director once?”

“Not the department, but a Scientist there, Park So-Yeon, fought with the director because she refused to give him the experiment data,” Lead Scientist Hwang Chan-Mi replied.

“Holy... She’s going to get executed today. Tell her to take the rest of the day off and run away. If he sees her today, she is going to be executed immediately.”

“Is he in that bad of a mood today?”

“Yeah. I’ve known him for over ten years, and it’s the worst. You know the Diagnostic Department well, right, Chan-Mi-ssi? Call them right now. Tell them to run away, I’m being serious. I’m not responsible for that department, but it won’t be great if the vibe of the entire lab is down.”

Hwang Chan-Mi sighed and picked up the phone. But she was too late.

—Um... He’s already here...

Principal Scientist Song Yu-Ra from the Mobile Diagnostic Device Research Department said in a quiet voice.

“This is trouble.”

Kim Joo-Yeon sighed.

Park So-Yeon was quivering as Kim Hyun-Taek stood in front of her. He looked like he was going to kill someone.

“Pull out the data on the diagnostic kit development. Let’s see the progress.”

Park So-Yeon entered the passcode on her computer and opened the data.

“Explain it,” Kim Hyun-Taek said as he crossed his arms.

“The A-Gen Simple Chip is being developed based on PDMS, and it uses antibodies to quickly diagnose protein...”

“You don’t think I know that? When I am supervising this project? I’m not talking about the idea sketch, but the progress.”

“... We are currently designing a circuit for PDMS now. It works by putting an antibody at the end of each of the forty-right lines and cross-verifying it six times.”

“Why six times?”

“Because the binding specificity of the antibodies used aren’t that high. We are increasing the accuracy by cross-verifying it six times.”

“Then shouldn’t you be working on improving the binding specificity of the antibody?”

“But we are not doing protein engineering...”

“Then you can work with a team that does protein engineering!” Kim Hyun-Taek shouted.

Song Yu-Ra quickly intervened.

“Um, sir. We talked about this during our last meeting. The protein engineering team said they don’t have the time to take on another project...”
magic

“They finished a project four days ago. They can do it now,” Kim Hyun-Taek said as he glared at Park So-yeon. “Communicating with other departments is one of the fundamentals of research. Don’t you know how Ryu Young-Joon makes all those great achievements from that teeny company?”

“...”

“It’s because he steals all the abilities of A-Gen’s departments!” Kim Hyun-Taek shouted.

Now that he was talking about it, it made him angry. It was true; A-Bio’s own equipment and facilities weren’t great. They didn’t even have a facility that raised animals for experiments. He used it all from A-Gen. From the super-resolution visible photoactivated atomic force microscopy (pAFM) he used to destroy the opposition of the HIV vaccine to the countless experimental animals like mice and chimpanzees, the department that conducted the clinical trial, and even the PDMS chip and human resources from the Mobile Diagnostic Device Research Department, Young-Joon used it all from A-Gen.

'Fxxk.'

Crash!

Kim Hyun-Taek kicked the table. With a sound, the chair with wheels was pushed back from the impact.

“I don't know what you are all thinking. Are we part of A-Bio? A-Gen is the one that pays you! I pay you! The work that the Research Support Center does is a mess. It's all to support A-Bio's research! Look at the Clinical Trial Management Center. We don't have a single drug that is going into clinical trials! It's all A-Bio, A-Bio... Is this company A-Bio's?!” Kim Hyun-Taek screamed. He glared at Park So-Yeon like he was going to kill her.

“Scientist Park So-yeon. So, did you get on Ryu Young-Joon's good side by making a good diagnostic kit and offering it to him?”

“Pardon...?” Park So-Yeon was baffled.

“If you have the time to use all your strength to make a product for another company, do it after you are done with what you are supposed to do! Collaborating with other departments and catching up with their schedule!”

“ ... ”

“If the protein engineering team is done with a project, you should have found out on that day! You just have to contact them and ask! Do you have to wait until the lab director tells you?”

“... I'm sorry.”

Park So-Yeon lowered her head.

“The entire company has gone mad! Ryu Young-Joon's success story has made everyone insane. The CTO is already kissing his ass, so how could his subordinates be in their right mind?”

Kim Hyun-Taek clenched his fists and trembled in anger.

That was when...

“It's hard for just a Scientist to figure out the progress of a project since it is confidential information.”

Ryu Young-Joon's voice was heard from the office entrance. When everyone glanced at the door, he was actually standing there.

"How could someone call another department every day and check their progress? A regular scientist can't do that. Aren't lab directors the ones who should organize and assign projects and coordinate schedules so that departments can collaborate together? I don't know why you're angry at the newest person in the department for not doing *your* work that *you* passed onto her," said Young-Joon.

"..."

Kim Hyun-Taek froze for a second, then glared at him with hostility.

"Doctor Ryu. Are you now coming in and out of my lab without telling me in advance?"

"I'm here because of an experiment for the diagnostic kit I developed last time. I got your permission when I signed the contract."

"You're done with that experiment."

"If it was, the lab entrance wouldn't even have opened with the Lab One pass that was temporarily issued to me," Young-Joon said as he shook the pass in his hand. "Read the contract again because it hasn't ended. And the reason I am here is to do a few additional experiments to improve that diagnostic kit."

"..."

'He's developing it more? Here?'

Kim Hyun-Taek felt like his blood was boiling. He felt like he was going to faint because his blood pressure was so high.

"So are you saying that you are going to do experiments here?"

"Yes. And I need Scientist Park So-Yeon's help because I have to use the PDMS chip. I don't have a lot of time, so do you have more to say to her? Should I wait outside?"

"... No."

Kim Hyun-Taek barely suppressed his boiling anger and left the office. Young-Joon watched him leave, then went to Park So-Yeon. She turned her head and didn't look at him.

"So-Yeon-ssi, can we have a talk?"

"... Yes..."

Her helpless voice was teary. She turned her head so that Young-Joon wouldn't be able to see her tears, but he felt like he knew what she looked like. She was definitely not in the condition to discuss work-related things right away.

'I'm going to have to talk to her after I calm her down.'

Young-Joon took Park So-Yeon to the cafe inside the lab.

* * *

"Latte?"

"... Yes."

Park So-Yeon kept wiping around her eyes with her fingertips. She was worried that her makeup had been ruined.

When she took the latte Young-Joon handed her, she choked up again a little. It was because it was a matcha latte, something she always used to drink when they were dating.

"Are you feeling better?"

"... Yes."

"Don't take it to heart since he does that often. Although, I think it's a lot worse today."

"..."

"Anyways, to get to the point, I'm thinking of redeveloping the diagnostic kit into a format that can be used in the pet and livestock industries," Young-Joon said.

Park So-Yeon clenched her eyes shut, then opened them.

'Let's just talk about work.'

She swallowed all the words that came to mind. She sniffled then took a deep breath.

"... You're talking about making a diagnostic kit for animals?" Park So-Yeon asked.

"Yes, that's it."

The international patent approval for the one hundred twenty two types of treatments for pet and livestock was almost finished. If he developed an animal disease diagnostic kit, it could create synergy with this.

The world livestock industry was worth more than thousands of trillions of won. Thanks to that, the amount of damage of livestock that were mass-killed by hoof-and-mouth disease, tuberculosis, and AI[1] every year was easily over a trillion won. It wasn't easy for the person who does the killing, nor the livestock, nor the owners of the farm. Now, it was time to stop that.

Science that had been advanced to the extreme could put an end to the despair that repeated itself every year.

1. short for avian influenza, or bird flu ?