

Super Genius DNA

Chapter 96: Cellicure (7)

On the sixth day, Young-Joon visited Sunyoo Hospital again. He was alone without Song Ji-Hyun. He met Professor Kim Chun-Jung and pitched the idea.

“Let’s scan glucose and see where the cancer has spread since cancer cells eat a lot of glucose.”

“Are you going to use FDG?”

FDG, or fluorodeoxyglucose, was glucose that was labeled as a radioisotope. It was a drug that was often used to study diabetes and such, and it was easily absorbed in places where glucose was absorbed as it had a very similar structure. FDG emitted positrons from where it was absorbed, so it allowed one to see how the glucose moved with a positron emission tomography scan.

The problem was that FDG was a radioactive material. It constantly emitted radiation, internal contamination occurred continuously within the body, and it wasn’t metabolized and destroyed easily like glucose. It was discharged from the body as urine after a long time, but until then, the patient’s body was like a walking, radioactive lump.

“I’m against using it.” Kim Chun-Jung shook her head. “She is still young. I would use it if the patient was old and there was a high risk of metastasis. But not Lee Yoon-Ah.”

“You’re saying that since cell division must keep occurring in the body as she is young, internal contamination, which can cause damage to DNA, will do more harm than good, right?”

“That’s right,” she replied firmly.

“I thought so as well,” Young-Joon said. “I don’t want to use FDG. Let’s just scan glucose.”

“Pardon?”

“Since we don’t have time, I wasn’t going to develop a new technology that had to go through clinical trials. I am going to change how we use existing technology, and we are going to track glucose with the safest material possible. Give a few candies to Lee Yoon-Ah. Then let’s take a picture of the change in glucose concentration with an MRI.”

Kim Chun-Jung froze for a moment. For a second, she thought that Young-Joon had gone insane.

“Um... Mr. Ryu, we can't take a picture of glucose concentration with an MRI.”

“We can. It was just that there was no one who tried to take a picture of glucose concentration with an MRI.”

“...”

Kim Chun-Jung was extremely confused.

‘What the hell is he talking about?’

MRI was a diagnostic imaging technique that was able to provide abundant information about things such as bone marrow or soft tissue in bones by imaging water molecules in the body. However, glucose wasn't water, and an MRI wasn't an optical device, such as a microscope. It was impossible to measure the flow and concentration of that fine substance.

Young-Joon, who saw her confused face, began explaining.

“The human body is mostly made of water. An MRI involves applying a strong magnetic field on a patient's body, which forces the protons of water to align in one direction. Then, the protons emit a certain wave of energy when you shoot electromagnetic waves at a specific frequency due to resonance. If you measure that, you can see the flow of water molecules in cells. That's how an MRI works.”

“That's right.”

Kim Chun-Jung nodded.

“I did a few simple experiments, and I found that I can track down the protons attached to the hydroxyl groups on glucose with an MRI.”

“How?”

“When you produce a magnetic field with an MRI, the protons of both glucose and water are aligned in a specific direction. Then, if you shoot an electromagnetic wave that matches the frequency of the protons on glucose, they will fall off of glucose, transfer onto water, and change the frequency value of water.”

“...”

“You can find where glucose is if you fire an electromagnetic wave that matches the frequency of glucose, then track where the intensity of the electromagnetic wave signal of water molecules drops.”

Kim Chun-Jung literally felt like someone had hit the back of her head with a hammer; she felt lightheaded after hearing Young-Joon's explanation because it was so shocking.

The MRI, which was first invented in 1983, was being used for forty years, but no one had thought of anything like this. The basic way to use it was to fire an electromagnetic wave and measure the wave the body shot out in response. Even if they sent out electromagnetic waves to glucose, the signal that would be generated as a reaction would be very weak. As such, everyone thought something like this was impossible.

However, Young-Joon's idea right now was to measure the decrease in the electromagnetic wave emitted by the body. He was proposing to measure how the water molecule changed due to glucose since the signal glucose emitted would be too small to measure. It was a simple way of thinking outside the box, but it was shocking.

"How much glucose can you measure with this method?" Kim Chun-Jung asked.

"According to my experiment, I was able to measure glucose levels as low as a micromole (μM)," Young-Joon replied. "I tested it by injecting glucose into a mouse's veins, and I think it can work in the human body as the metabolic process of glucose is well-known."

"..."

"Professor Kim, glucose concentrations are usually constant in the body except for the brain, while it is twenty times higher in places where cancer cells are present. If it has metastasized, there will definitely be a spike in the value. I'll pay for the MRI scan, so please just try it once."

* * *

Lee Yoon-Ah tensed up a little bit when Young-Joon and Kim Chun-Jung returned to her room. It was because Young-Joon left after discussing something with a serious face and her mother was upset. After predicting a few possibilities based on that situation, she came to the result that she was going to be receiving a very painful treatment.

Lee Yoon-Ah held Kim Hyo-Jin's hand tightly out of anxiety. However, what Young-Joon handed her was candy.

"Yoon-Ah, do you want some candy?" said Young-Joon as he sat on the edge of her bed.

After hesitating a little, she took the glucose candy that was in his hand. When she paused, Young-Joon said, "You can eat it."

"... Lemon..."

"Hm?"

"Lemon flavor..." said Lee Yoon-Ah as she pointed to the candy bag that was poking out of Young-Joon's pocket.

"Oh, you want the lemon one?"

Young-Joon looked for the lemon flavored candy, but ended up giving her the entire bag. This time, Lee Yoon-Ah hesitated because of her mother.

"You can have it," Kim Hyo-Jin said as she hugged Lee Yoon-Ah's shoulder tightly. Only then did she relax and open the lemon candy wrapper.

She went to take an MRI after having two pieces of candy, but she didn't look very scared.

"This one is loud, but I like it because it doesn't hurt."

Children were usually terrified of this equipment because of the loud roar when the chiller ran and the feeling of being trapped in a small space. A nine-year-old child who had come to like MRIs after suffering from all kinds of chemotherapy: this situation was ironically pitiful.

With the help of Young-Joon and the MRI operator, Kim Chun-Jung set the frequency of the electromagnetic wave to glucose.

"Lie down over here."

The MRI operator laid Lee Yoon-Ah down on the table and put a towel under her arm.

"There aren't any metals on her, right?" the operator checked again out of habit, then started the machine.

The table where the patient was laying went up and moved into the circular magnetic field. Kim Chun-Jung and Young-Joon nervously watched the data screen the operator was taking on their laptop. As the electromagnetic wave was fired, the image appeared on the screen like ripples on water.

The operator of the MRI tracked the signal by moving the image, which was by the millisecond. They put a filter on the intensity of the signal so that decreasing values would be highlighted.

"..."

Kim Chun-Jung's jaw slowly dropped. A strong red signal was popping out from below the pelvis.

"It metastasized under the pelvis."

"Hm..."

Kim Chun-Jung groaned like she was in pain.

"Let's discuss this outside."

Young-Joon took Kim Chun-Jung outside.

* * *

A million thoughts were racing through Kim Chun-Jung's head on their way back to her office.

The very first emotion that popped up in her head was a sense of relief. It could have been a big problem if they administered Cellicure at that dosage without having diagnosed the metastasis to the bone.

The by-products of cells destroyed by necrosis, the cancer cell's destruction mechanism, would be littered in the bone. But immune cells had a tendency to flock to clean up these messes; the bone marrow was also where immune cells were created. If they used Cellicure, the entire bone could be destroyed with a strong inflammatory reaction from the pelvis.

Or, there could be no reaction if the cancer cells already took over the immune system. In that case, the remains from cell necrosis could stick to nearby tissues and spread, causing another side effect. Plus, no one knew what this would bring as Lee Yoon-Ah was a child who still had to grow for a long time; no one could predict the outcome as this was a very unique clinical trial case.

When Kim Chun-Jung reached this conclusion, she relied on Young-Joon again.

'Maybe he will be able to predict the consequences of Cellicure. Maybe he'll be able to find the way with the least side effects.'

And when she was close to her office, the small sliver of hope turned into a stronger anticipation. Maybe...

'Maybe Ryu Young-Joon will be able to cure bone metastasis.'

An effective treatment method for bone metastasis currently didn't exist. There was a high possibility that even Cellicure wouldn't be able to fully cure it. Even if it caused a strong inflammatory reaction as it destroys the affected area, including the bone, it wouldn't be able to completely eliminate the cancer cells.

After a few years, the cancer cells would return and grow in the bones. All Cellicure was going to do was prolong the patient's life until relapse.

However, Young-Joon had cured pancreatic cancer, the most difficult one of them all.

'Maybe this person can cure bone metastasis.'

Kim Chun-Jung, who began the meeting at her office with a sliver of hope, heard something shocking from Young-Joon.

"It's a relief," he said.

"A relief?"

"Since we caught it early."

"... Can we treat it? Should we use Cellicure?"

"Using Cellicure right now could be a gamble. Let's leave the liver cancer for a moment. We have to get rid of the cancer cells that spread to the bone."

"Is there another way?" asked Kim Chun-Jung in desperation.

"What do we have to do?"

"This is also an experimental therapy, but it's a technique that has gone through Phase Three of clinical trials in the United States. And it is very effective in treating blood cancer or myeloma. It's a third-generation cancer immunotherapy. Since manipulated immune cells are used to directly remove cancer cells instead of chemicals like Cellicure destroying them, it will be taken care of neatly without the remains of the necrotized cancer cells flowing into the bone marrow." This was a new cancer immunotherapy that had finished up to Phase Three of its clinical trial in the United States. Kim Chun-Jung's jaw dropped.

"No way." magic

"I bought this technology from Conson & Colson when I went to America. And A-Bio has the best scientists who are able to perform it."

* * *

Carpentier was a scientist who had succeeded in regenerating bone marrow from stem cells. He was a Nobel Prize recipient and one of the greatest experts in immunology.

He entered the lab and called for Jacob. Where Stories Blossom: N♡vεIBjn.

"Jacob!"

“Yes?”

“What experiment are you working on right now?”

“I did a cell transfection yesterday, and I am maintaining other cells...”

“Can you go to Sunyoo Hospital right now as technical support?”

“Why?”

“Orders from the CEO. Come with me.”

“Orders from the CEO? What’s going on?”

“You know the Chimeric Antigen Receptor T-Cell Therapy, right? The third generation cancer immunotherapy that Conson & Colson had.”

“Yes. Isn’t that the one that he bought by selling the shares of our cancer lab?”

“We have a patient we have to treat with it. We are going to manipulate a target marker in the patient’s stem cell and make T-cells from it.”

Jacob seemed intrigued.

“Who’s the patient?”

“They have liver cancer, but apparently it metastasized to the bone.”

“Oh... Is it the nine-year-old kid that was on the news? The clinical trial patient for Cellicure?”

Jacob frowned.

“That’s right.”

“Oh...”

“End-stage liver cancer and bone metastasis. It’s the worst, right?”

“It really is.”

“This is the email from the CEO. Take a look.”

Carpentier showed Jacob the email.

[We are going to get rid of the trace amount of cancer cells that have metastasized to the bone with chimeric antigen receptor T-cell therapy, then treat the liver cancer with Cellicure. I think that this patient is past the current boundaries of current medicine, but it is our job to explore that territory.]

Chapter 97: Cellicure (8)

All the drugs that were administered to Lee Yoon-Ah now were strong painkillers like morphine. None of the existing anticancer drugs worked, and there were no other treatment options. It could be said that current medicine had given up on them, but from the perspective of a nine-year-old, it was nice because she didn't have to get any more painful anticancer drugs. She couldn't go around alone because she was in pretty bad condition, but she was quite cheerful, which was fitting for her age.

"Mom, YouTube."

Lee Yoon-Ah was into this YouTube channel that a nine-year-old elementary student, who was the same age as her, had. Now, she was watching a video of them going to an amusement park.

"I want to go here when I'm all better," Lee Yoon-Ah said.

"Mhm..." Kim Hyo-Jin replied weakly while patting her on the shoulder.

That was when Young-Joon, Jacob, Professor Kim Chun-Jung, and the nurses came in.

"We're going to draw some blood," said Kim Chun-Jung.

She had already told Kim Hyo-Jin the situation that the liver cancer had metastasized to the pelvic bone and that there was no way to treat the cancer cells in the bone as of right now. She had also told him that Young-Joon had stopped the Cellicure treatment and was preparing a new technology called chimeric antigen receptor T-cell therapy.

"Can we talk outside for a moment?"

Sniffling, Kim Hyo-Jin took the medical team, Young-Joon, and Jacob outside.

"I'm thinking of stopping treatment now," she said.

"Stopping treatment?" Kim Chun-Jung asked in surprise.

"... Yoon-Ah wants to go to the amusement park... She was always in the hospital. We can stop now, and I can take her to the amusement park, go play by the river..."

Kim Hyo-Jin wiped away her tears. After a short moment of heavy silence, Kim Chun-Jung spoke.

"As your doctor, I respect the guardian's wishes first and foremost. But you have Doctor Ryu... You know the effects of what he has given to the medical community, right?"

“Of course, I don’t know as much as you, but I studied a lot about cancer while looking after my daughter. I memorized names of difficult drugs and I know papers, too. I know about the chimeric antigen receptor T-cell therapy... It takes three months to prepare it for use,” Kim Hyo-Jin said. “Doctor Ryu, be honest. What is the probability that my child will live with that technology?”

“Because Lee Yoon-Ah’s case is very unique, we can’t calculate the probability because we don’t have any clinical data,” Young-Joon said.

“ ... ”

Kim Hyo-Jin clenched her eyes shut. She tried her best to smile.

“Thank you. Thank you for working so hard. I’ll take my baby and get discharged.”

“Three weeks,” Young-Joon said. “I will get the treatment ready in three weeks.”

The chimeric antigen receptor T-cell therapy: it was a technology with the largest potential among existing cancer treatments. The technology extracted the patient’s immune cells, then gave them a machine gun to obliterate the cancer cells. The immune cells that were supplied with the best weapon would immediately wipe out the cancer cell as soon as they returned to the body and cure the patient.

“But it isn’t very effective against solid tumors. So, we are going to eliminate the myeloma in the bones and the cancer cells that are floating around in the blood with chimera immunotherapy, and then we’re going to treat the liver cancer with Cellicure. I’m planning to finish this in five weeks, and I have set this as the final deadline. I cut off the time required for the chimeric immunotherapy preparation at three weeks,” said Young-Joon.

“... Three weeks... I-Is that possible?” Kim Hyo-Jin asked like she couldn’t believe it.

This technology cost nearly four hundred million won for one round of treatment. As astronomically high as the price was, it took a very long time to design and create the treatment. The reason was that it was very difficult to grow immune cells, and it was also very hard to manipulate genes. Three months was the minimum amount of time required.

“Three weeks...?” Kim Hyo-Jin mumbled in hesitation.

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

“ ... ”

“We can grow immune cells and manipulate genes a dozen times more effectively than what Conson & Colson used to do. We can make it much faster, although we are still racing against the clock.”

“Excuse me...” Jacob, who came with Young-Joon, interrupted carefully as he glanced at everyone. In English, he said to Young-Joon, “Sir, it seems pretty serious right now; what’s going on? I haven’t learnt a lot of Korean yet.”

“It will end soon. I will explain it to you later,” replied Young-Joon briefly. Then, he turned to Kim Hyo-Jin again.

“This scientist right here is one of the best technicians at A-Bio. He graduated early from Caltech in bioengineering and published a paper in *Cell*, one of the best scientific journals, from a Nobel Prize recipient’s lab. He is one of the young scientists in the spotlight of the world.”

“ ... ”

“We have already succeeded in bone marrow regeneration, and we have also manipulated genes with Cas9 when we cured HIV. Carpentier, a Nobel Prize recipient, Jacob, and I will do the experiments ourselves.”

“ ... ”

“We promise to cure Lee Yoon-Ah by the deadline. Please have hope one last time.”

* * *

After a week at A-Bio...

“Give me the media,” said Young-Joon.

Media referred to an animal cell culture medium. Jacob handed Young-Joon the RPMI culture medium.

They had dedifferentiated Lee Yoon-Ah’s cells into stem cells, and Young-Joon was now differentiating it into T-cells, a type of bone marrow.

Carpentier and Jacob were helping him; they were the first people to complete a technology that developed hematopoietic cells, which create blood in the bone marrow. This couldn’t be done simply with knowledge and required practical skills and excellent technique. Young-Joon had never made hematopoietic cells before, but he was skilled in cell experimentation. Also, he had Rosaline’s senses left in his fingertips. He didn’t have the precision to excite exactly 1.17 million nerve cells in his left hand, but he could mimic it.

Drr!

Young-Joon held the flask lid, which spun exactly twelve and a half times, with his left pointer finger and thumb, then took out the culture medium and cell with a pipette-aid.

“Please give me the SFG-1928z,” said Young-Joon.

It was a type of retrovirus. It was used to put specific genes into a cell. He received the designed virus solution from Carpentier and infected the stem cells with it. He had already treated it with the virus that differentiated it into immune cells. The only thing left to do was manipulate a few genes with Cas9. He was going to add Cas9 in the form of a protein complex when gene expression stabilized after the virus fully entered and the cell condition improved.

An additional five days were spent, and Young-Joon’s face became more and more thin.

“Sir, aren’t you going to shave?” asked Yoo Song-Mi when she found Young-Joon collapsed on the sofa in his office like a corpse in the morning.

“I have no time to. I’m showering as fast as I can in the office shower as well.”

“ ... ”

“I’m concerned about this more than anything else I have invented.”

Young-Joon went back to the lab. This time, he had to use a piece of equipment called a flow cytometer and only select the cells that were in the desired condition in the most optimal state.

Young-Joon ran the flow cytometer he bought before and extracted cells with fluorescence. Of the ten million cells from the culture that he started with, only one hundred thousand were left. As there may not be enough cells to cure the patient, he had to put in cell stocks, which was in the intermediate stage, to make more of the treatment.

‘I guess three weeks is still tight even when I have good technology.’

Young-Joon had set the deadline even shorter on purpose as Lee Yoon-Ah’s treatment was a race against the clock. Removing cancer cells from the bone marrow wasn’t the end; the real enemy was liver cancer.

Since chimeric antigen receptor T-cell therapy wasn’t very effective on solid cancers like liver cancer, it would only be able to treat the blood cancer and myeloma in the pelvis. Having to use Cellicure afterwards meant that the liver cancer treatment was delayed for that long.

That was what Young-Joon was worried about, as her liver was already completely taken over by cancer cells.

When Young-Joon was pushing himself, Jacob, and Carpentier and conducting the experiments, Song Ji-Hyun came to visit A-Bio.

* * *

“Doctor Ryu, I heard about your treatment strategy. You’re going to get rid of the cancer cells that metastasized to the bone with chimeric antigen receptor T-cell therapy, and then administer Cellicure, right?” “That’s right.”

“But... If you do that, you may run out of time. The clinical trial patient’s liver is barely performing normally right now. We need to administer Cellicure quickly.”

Young-Joon sighed.

“I agree with you, so I am working day and night.”

Song Ji-Hyun could tell even if he didn’t say it. Looking at his thin face, his grown-out stubble, and greasy hair, it was clear that he probably only washed once every two to three days.

“Do you get some sleep...?” Song Ji-Hyun asked like she was worried.

“I sleep a little sometimes.”

“... Administer Cellicure right now.”

“We can’t. It will cause problems in the pelvis.”

“I know. But at this rate...”

Song Ji-Hyun sighed.

“It would be nice if we could send Cellicure only to the liver. Then, we could cure her by treating the liver cancer without any problems happening in the pelvis and treating the bone metastasis with the chimeric antigen receptor T-cell therapy.”

“I wish,” Young-Joon replied.

“But it won’t be easy. It really is depressing. Cancer is so hard,” Song Ji-Hyun said like it was painful.

“Doctor Ryu, I thought it would work if we attached a receptor that recognized things on the surface of cancer cells on the exosome. What if we use it without the exosome coating at all? I think the chances of it moving to the pelvic bone would decrease.”

“It will still go there eventually. We have to make it so that Cellicure only enters the liver cells.”

“... Even the notorious pancreatic cancer has been successful in clinical trials, but I didn’t know that liver cancer would be so difficult.”

“Pancreatic cancer?”

Young-Joon’s eyes suddenly shone.

“Pardon?”

“Pancreatic cancer?”

“Yes... You developed it. A pancreatic cancer cure.”

“Yes. Why didn’t I think of that?”

“Pardon?” “The pancreatic cancer cure used the bornavirus. It’s a virus that only infects pancreatic cells. We just have to use that same strategy in the exosome, right? We already know a very famous virus that only infects liver cells.”

“... Hepatitis...?” Song Ji-Hyun said, frozen.

“It’s the virus that causes hepatitis. Separate the materials on the shell of the hepatitis E virus and mix it with the exosome. Then, it won’t be able to infect healthy liver cells, but make it so that Cellicure only goes to the liver.”

Young-Joon jumped up from his seat. He went straight to the computer and searched up the virus’ information on Google.

[Hepatitis E virus]

Watching the structural diagram of the virus come up, Young-Joon called A-Gen’s Research Support Center.

“Could I get the hepatitis virus?” he asked.

—Do you need the live form of the bacteria?

“It doesn’t matter whether it’s in the DNA form or the live virus as long as it comes out quickly. Give me anything.”

* * *

Song Ji-Hyun, who could be said to be the greatest expert in the world about capsule coating of drugs, exosome creation, and the drug form of Cellicure, was responsible for hepatitis. She took the hepatitis virus DNA she received from Young-Joon and began staying up as soon as she returned to Celligener.

Young-Joon, who she hadn't seen for a long time, looked pretty bad. She could tell that he was fully concentrating on this clinical trial. As the developer of Cellicure and one of the managers of this clinical trial, Song Ji-Hyun was a little ashamed.

'I have to work on this as hard as Doctor Ryu.'

Young-Joon was also the one who came up with the idea that could send Cellicure only to liver cancer. She had to be able to complete this at the least in order to be able to look him in the eye.

This case wasn't just the clinical trial of a new drug or the treatment of a young child to Young-Joon; Song Ji-Hyun felt like she knew what he was feeling right now.

'Doctor Ryu said that his youngest sister died of pediatric liver cancer.'

That was probably a reason why he was holding onto this so desperately. She couldn't even predict what kind of shock and pain this genius would receive if he failed at treating Lee Yoon-Ah.

Song Ji-Hyun wanted to protect Young-Joon. It was time to advance Cellicure one step further for him, who she had gotten help from numerous times. Young-Joon would complete the chimeric antigen receptor T-cell therapy... magic

'And I will finish Cellicure and meet him on the day of the clinical trial treatment.'

The structure of the hepatitis virus was relatively well known. Song Ji-Hyun focused on the structure known as HEV-2, one of the receptors that existed on the surface of the virus shell. It corresponded to the second open reading frame in the gene of the virus. After separating this gene, she synthesized the biomaterial through in vitro translation and coated it on the exosome. For the week that the experiment was being conducted, her face also started becoming thin like Young-Joon.

* * *

On the day the new drug was to be administered, Young-Joon showed up to Sunyoo Hospital with a brown bottle, which contained the purified chimeric immunotherapy treatment, and Song Ji-Hyun showed up with a small vial, which contained Cellicure. Both were products that had been refined at the GMP facility at A-Gen.

Everyone was nervous.

"We will begin."

Kim Chun-Jung injected both drugs into Lee Yoon-Ah's veins.

Chapter 98: Cellicure (9)

The white liquid traveled into Lee Yoon-Ah's thin arm; it was Cellicure and the chimeric immunotherapy treatment. The results of all the research Young-Joon and Song Ji-Hyun struggled to create were mixing into one and being administered. If they were right, the drug would cure her liver cancer and bone metastasis.

Lee Yoon-Ah just stared at the medical team calmly. No one could predict the results yet.

Song Ji-Hyun snuck a glance at Young-Joon. She too wasn't in good condition as she buried herself in experiments for the past few weeks, but he looked worse. She was worried about him. Most of all, Young-Joon had special feelings towards this child because of his trauma. That bothered her all along.

"I'm going to step out for a moment."

Young-Joon excused himself and left the room. He could not bear to watch her. He was so nauseous that he felt like he was going to vomit.

'Is this really the best thing to do?'

He felt like an unknown sense of anxiety and frustration were engulfing his entire body. The chimeric immunotherapy and Cellicure were clearly reasonable treatment methods. It was the best plan at the moment, and the chances of success were clearly high no matter how many times Young-Joon ran a simulation with his knowledge.

However, it was not one hundred percent, and he couldn't guarantee it as there were no clinical cases. As such, he told Kim Hyio-Jin that he didn't know about the success rate.

'I didn't get it confirmed by Rosaline.'

Rosaline could predict the results of all molecular biological phenomena, but not him. All he had done was infer without Synchronization Mode, but only the problem solving abilities and knowledge that Rosaline had left him. He had convinced Kim Hyo-Jin under the judgment that the success rate was high from his calculation.

Ryu Sae-Yi's death kept coming to mind. She had died at the hospital. Maybe Young-Joon should have discharged Lee Yoon-Ah. Maybe he should have given her some happy memories before she left.

Young-Joon expected the success rate of the treatment to be high, but an irrational anxiety weighed heavily on his heart: a feeling that it was going to fail, an unfounded sense of guilt, and a bad feeling.

“...” Young-Joon flopped down onto the emergency exit staircase. His hands were trembling.

“Doctor Ryu!”

Someone wrapped their arm around his shoulder from behind. It was Song Ji-Hyun.

“What are you doing here?”

“...”

Song Ji-Hyun looked at him with pity.

“The stairs are cold. Get up. Let’s go back inside.”

“What do you think the success rate of this treatment is, Doctor Song?” Young-Joon asked.

“You can’t calculate it because it’s a very unique case and we have no clinical data, right?” Song Ji-Hyun impersonated Young-Joon.

“I know. But... You have a feeling as the developer of a treatment.”

“I think one hundred percent,” she said firmly.

Young-Joon was a little surprised.

“For a scientist, aren’t the results of our research like our children? How can we not have faith in our own technology?” Song Ji-Hyun smiled. “Don’t worry, Doctor Ryu. The treatment we made is the best. You have cured the notorious pancreatic cancer before, right? This will be successful as well.”

“... But I keep thinking of my sister. To be honest, it bothers me. I thought maybe I was being stubborn because of my trauma. Maybe I should have given Yoon-Ah a chance to make memories like her guardian said. I’m just worried about that...”

“It’s different from your sister,” Song Ji-Hyun said.

“...”

“It’s not Ryu Sae-Yi, but Lee Yoon-Ah. Their names are different except for one syllable[1] They look different, too, right? Different genes as well. Did your sister have bone metastasis to the pelvis?”

“No, it metastasized to the lungs.”

“See? It’s a totally different clinical case. And most of all, you’re a different person than before. yYou were a university student back then, and now, you’re the world’s greatest scientist and the CEO of A-Bio. We can do it. We have Cellicure and chimeric immunotherapy.”

“... Alright. Thank you,” Young-Joon replied weakly.

* * *

Young-Joon’s amygdala was completely surrounded by Rosaline’s cells. She was controlling them right now and was in a kind of siege. This battle wasn’t going to end easily, as her mother cell was directly affected by the stimulation that occurred from the amygdala. She was able to control most biological processes, but there was nothing she could do about the shock to her mother cell. All of Rosaline’s cells had divided from a single mother cell, as the mother cell was the first organism that was created from Young-Joon’s blood, and it was the root of Rosaline’s existence.

‘The tissue of the trauma has fully taken over the mother cell.’

Rosaline realized that it was impossible to transfer her consciousness to the mother cell as it had gone into the trauma tissue of the amygdala.

The trauma tissue looked like a giant black hole; it absorbed all the energy and neurotransmitters from its surroundings and it did not expel anything. It was basically impossible to destroy this monster that was deep in the amygdala without damaging Young-Joon’s body. It was also difficult to take out the mother cell.

Rosaline gathered the accumulated fitness and set it off all at once.

[Promotion of AKAM1 expression by 80%] magic

[Promotion of KROII expression by 120%]

[LOX switching.]

[Promotion of epinephrine by 30%]

Splash!

Some of the lipids that were flowing in the vessels of the trauma tissue splashed out. Amines and neuropeptides were flowing out. Rosaline collected and absorbed some glutamic acid and drilled a hole in the trauma tissue.

[Promotion of perforin expression by 200%.]

‘Sorry, Ryu Young-Joon.’

This was like a perforator used to destroy harmful organisms such as bacteria that invaded Young-Joon’s body from the outside, but it bothered Rosaline

that she was using it on his cells. However, even a powerful weapon like perforin only left a small injury on the trauma tissue; it wasn't able to pierce it.

'This doesn't work?'

Her plan to rescue the mother cell kept failing. As the mother cell was captured there, Rosaline couldn't think of a good way even with her insight.

In this situation, there was only one answer.

'I have to combine the mother cell with the trauma.'

It was better for the mother cell to engulf the trauma rather than being taken over by it. Cell fusion was when two different cells combined into one. It seemed like humans had done this kind of work before according to Young-Joon's memories of the papers he had read before, but Rosaline could do it better.

[Activation of all GPCRs.]

[Major activation of membrane proteins.]

Rosaline controlled the genes that were involved in cell membrane formation and ruffled the mother cell's membrane. It seemed like a part of the apoptosis mechanism, but it wasn't.

Slrr...

The mother cell, which now had its membrane broken, began entering into the trauma tissue by endocytosis.

'Hup!'

Although Rosaline had no respiratory organs, she took a breath or surprise in her heart. The trauma, which had slowly merged, was coming into her consciousness. The first thing she felt was a huge sense of sadness.

"I can't believe it!"

To Rosaline, this was a similar shock to discovering the New World. Perhaps this was the wonder that a person who was blind since birth and had never experienced vision before actually saw for the first time. She never knew that emotions and senses could be this intense. The depth and weight of them were incredible. It was also very intense as it was the emotion from long-term trauma.

'Oh my...'

Rosaline felt the touch of Ryu Sae-Yi's thin fingers from Young-Joon's hand. It was a direct sense of touch that she had never experienced before.

Additionally, there was also the smell of medicine in the hospital room, the smell of hydrangeas that Ryu Sae-Yi used to like, the taste of MSG in

the *soondaeguk*[2] that he had at the restaurant in front of the hospital, and his guilt towards Ryu Sae-Yi. All his experiences were awakening each and every one of Rosaline's cells. Her mother cell absorbed it like a sponge and acquired it. It was not a phenomenon that could be interpreted by theoretical explanations such as the transfer of signals.

'... It's euphoric.'

Rosaline didn't have eyes, but she felt like crying. Was this what organisms who acted with fully functioning bodies felt? It was very impressive for Rosaline, a cellular organism who had only lived in the bubble called Young-Joon.

Like a rollercoaster, Young-Joon's emotions soared up to the climax. With the moment when a flat line that was calm like an ocean was drawn onto Ryu Sae-Yi's monitor, and the moment everyone burst into tears and the doctor announced the time of death, Rosaline's consciousness slowly drifted away with a powerful, uncontrollable emotion that had reached its limit.

'It's not easy.'

The mother cell had succeeded in fusing with the trauma, but it was still too powerful. The mother cell had fallen into a state of suspended animation, like a cryogenically frozen human falling asleep with the hopes of being revived in the future.

'I've never felt this kind of threat after being born into this world. This is what a treat to life feels like. My life might end here.'

Rosaline had thought the attack by the sloppy gangsters who had been influenced by Ji Kwang-Man was nothing, but this was different.

Now, her only hope was for Young-Joon to overcome this trauma.

'...'

Rosaline, whose consciousness had drifted away, fell into a deep sleep. She could not feel anything.

But after two weeks had passed in real life, Rosaline, who was half-dead, was engulfed in a light so intense it could burn all of her cells at once. She could feel it; she could feel that major structural reforms were happening in Young-Joon's amygdala.

* * *

"Ninety-two percent of the liver cancer tissue, and one hundred percent of the bone metastasized cancer cells have died," Kim Chun-Jung reported. "We still have to administer more Celicure. But I believe it can be cured at this rate. We will have to monitor her for five years to see if it returns, but in my opinion... I

think she will be able to be discharged sometime next week. The clinical trial was a success.”

Kim Chun-Jung choked up a little at the end. This clinical case was touching even for an old warhorse like her, who had spent forty years at Sunyoo Hospital as a professor. One couldn't even imagine the depth of emotion the child's mother was feeling.

“ ... ”

Kim Hyo-Jin sat in her chair, unable to say anything. All she could do was bury her face in her hands with trembling shoulders.

Song Ji-Hyun, who was watching her, tapped the end of her nose with her finger as it was so touching. She glanced at Young-Joon. Unexpectedly, he didn't cry or be amazed; he looked calm just like any other day.

“Thank you. Good work.” Young-Joon said briefly and got up. Dive into Stories, Embrace Enchantment: N♡v&I Bjn.

As he looked like he was going to get up, Kim Hyo-Jin quickly got up and held onto him.

“Thank you so much, Doctor. Thank you...” said Kim Hyo-Jin, her face all messy from tears.

“It's alright. I just did my job.”

Young-Joon forced a smile and opened the office door. He meant everything he said, and he didn't want to be thanked, as the person who was saved might have not been Lee Yoon-Ah or Kim Hyo-Jin, but Young-Joon himself.

“ ... ”

Young-Joon, who was walking outside, stumbled a little as his legs were giving out. Song Ji-Hyun quietly trailed behind him. With her hands behind her back, she cautiously followed him at a distance as it was difficult for her to call him for some reason.

Young-Joon went to the end of the hall and stepped out to the small balcony. He was holding onto the railing and looking down at the entire hospital.

“It's over... It's really over, Sae-Yi. Really. Now, no one your age will die of liver cancer,” Young-Joon mumbled quietly.

His head was clear; he felt like he had been born again.

“Doctor Ryu.”

Song Ji-Hyun quietly approached and stood beside him. The smell of shampoo wafted over to his side. She had recovered her original beauty as she started to shower, eat, and sleep regularly after the treatment began.

“Are you okay?” she asked.

“Yes, thanks to your concern.”

With a smile, Young-Joon turned to face Song Ji-Hyun. And...

“Huh?”

Young-Joon’s eyes widened.

“What is it?”

“Um...”

[Synchronization Mode: Analyze Song Ji-Hyun’s oxytocin, vasopressin, and dopamine expression levels. Fitness consumption rate: 0.7/second.]

A message window popped up.

—Have you been well?

Rosaline sent him a message.

—You succeeded. Congratulations. Thanks to you, I was also able to escape the trauma. I knew you were going to rescue me.

‘But what’s with the expression level of oxytocin or vasopressin and all that? You can analyze these things, too?’

—I think this incident has created new changes for me as well. I have grown.

[Now, Rosaline’s cell can survive for thirty minutes outside of Ryu Young-Joon’s body.]

[Rosaline’s Synchronization Mode has become more sophisticated. You can observe phenomena with a finer resolution, and you can see things that you were unable to before. Your fitness consumption has become more efficient.]

‘Things I couldn’t see before?’

—Like the ratio of Song Ji-Hyun’s hormones.

‘What use do I have for that?’

—Oxytocin, vasopressin, and dopamine are hormones that rise sharply when people feel love. Hehe.

‘...’

—And there is another new ability.

'Another new ability?'

[Now, you can use Molecular Biology Simulation Mode through Rosaline.]

—What you can do in Simulation Mode depends on the fitness consumption. If you use less, you can set up virtual patients and run clinical trial simulations when you develop a new drug.

Rosaline said.

'If I use a lot?'

—When an epidemic for a particular infectious disease occurs, you can track the global path of the spread and everything about the results, and you can calculate the number of possibilities. You are able to see biological phenomena from a global perspective.

'Holy...'

—The perspective of someone who has succeeded in creating an organism like me should be special.

1. Yi and Lee are the same in Korean, but written differently in romanization. ?
2. Korean blood sausage soup ?

Chapter 99: Laboratory One (1)

“Doctor Ryu?” Song Ji-Hyun called.

“Oh, yes.”

“What are you thinking so hard about?”

“It’s nothing,” said Young-Joon as he organized the message windows in front of his eyes.

“Are you going to go back to work?”

“No. I’m going to have dinner and then rest for today.”

Song Ji-Hyun nodded.

“You need to recharge. It was very hard on you even after Lee Yoon-Ah started the treatment. Rest well today.”

“I will. Are you going back to work?”

“No, I’m going to go home after dinner as well.”

“I see.”

After some hesitation, Song Ji-Hyun asked, “If it’s okay, Doctor Ryu, would you like to have dinner with me?”

For her, she had built up a lot of courage to say that. They have had drinks together in the past, but for some reason, it was awkward now. And that went for Young-Joon as well.

'Rosaline, it bothers me because you said something stupid about Doctor Song's hormones and stuff.'

—Would you like to be synchronized? Would you like to in more detail? Doctor Song is worse than before. I can hear her heartbeat and it's no joke.

When Young-Joon stared at her, Song Ji-Hyun avoided his gaze. Her ears were a little red.

"Let's have dinner together," he said.

They went together in the car as their houses were in the same direction.

At a restaurant near their houses, they ordered a steak, salad, and wine.

Song Ji-Hyun said, "Honestly, I thought you were a super genius and knew all biological phenomena."

"Haha, no way."

"Doctor Ryu, do you know the syphilis treatment called Salvarsan, one of the top ten medicines in scientific history?"

"Yes, it's a pretty famous drug in organic chemistry."

"Professor Ehrlich, the person who invented it, failed six hundred times until he reached Salvarsan. He kept changing and changing the compounds, and repeating the experiments to get the structure of Salvarsan."

"I remember hearing that when I was in undergrad."

The conversation topic that Song Ji-Hyun chose for a date-like situation was Salvarsan; she was something else as well. She was as much a science nerd as Young-Joon, who lectured Park So-Yeon about how the smell of rain was a material emitted by bacteria when they first met.

Song Ji-Hyun said, "Doctor Ryu, I thought that the most difficult aspect in doing science was that you can't tell if the research you are doing is going in the right direction. Ehrlich got lucky with Salvarsan; he succeeded in six hundred tries, but you might not even gain anything even if you fail thousands of times."

"That's right. Science is like inching forward in a dark room by feeling the ground. It's really hard that you can't figure out what the right direction is at all."

“Right!” Song Ji-Hyun shouted. “It’s just like that metaphor. But it seemed like you knew where everything was and in what direction you had to go.”

“Oh, no. It’s not like I’m a fortune teller or something.”

“But you succeeded in everything you put your hands on. And you always seemed confident that you would succeed,” Song Ji-Hyun said. “There was a time where I imagined something unbelievable. I thought you could figure out successful drugs with a superpower that I didn’t know about.”

—Like Professor Shin Jung-Ju, people nowadays are getting close.

Rosaline sent him a playful message. Young-Joon quickly closed it and focused on his conversation with Song Ji-Hyun.

“But while working with you, I was very inspired by the human side of you that was behind everything.”

“...”

“You were also struggling and afraid that the medicine you developed wouldn’t work. But you pushed for it because you thought it was the right direction, right?”

“Um... Yes, that’s right.”

“Doctor Ryu, apart from our personal relationship, I respect you as a scientist. I just wanted to tell you that. I am so glad that you are here in this world.”

“... Thank you.”

“I would like to work with you in the future as well.”

“I also have a lot to ask you, Doctor Song.”

Song Ji-Hyun smiled like she was satisfied as Young-Joon replied.

“I’m just going to go to the washroom before the food comes.”

Song Ji-Hyun left the table. While she was gone, Young-Joon began a conversation with Rosaline again.

‘I couldn’t ask you before because Doctor Song suddenly called me, but what are you talking about when you say you can survive for thirty minutes outside of my body?’

—It’s exactly like it says. Do you remember the time I first went into your blood?

‘Of course.’

—At the time, my mother cell was on a slide. And your finger was a few centimeters above it. But how was my mother cell able to go into the cut on your finger?

‘Moving in the air...?’

—That’s exactly right. I can float in the air. It’s a property I originally had, but I couldn’t do that in the meantime as I would die if I left your body. But I can withstand thirty minutes now.

‘Do you want to try it?’

Right after he told Rosaline... “Ack!”

In shock, Young-Joon shouted and almost fell off his chair. It was because a figure of a nine-year-old girl suddenly appeared out of thin air. She turned her face to glance at him with a playful face and lively eyes. Her face was...

“Sae-Yi?”

—My cell that is floating through the air probably looks like this to you. I look the same as your youngest sister, right?

“Shit... What kind of joke is this?”

—I did not control this. This is because my mother cell fused with your trauma. Your limbic system is creating an illusion.

“...”

—Don’t worry. I won’t be visible to other people, and they won’t be able to hear my voice either. They won’t be able to see me without a microscope because the size of my body is only micrometers wide in diameter. I’m like a ghost that only you can see.

“But why is your hair red?”

—The hair follicle cells where hair grows is one of the places with the fastest cell division in the human body. Maybe it’s because of that, but my hair resembles the characteristics of my mother cell more than the trauma tissue.

“Hm.”

—I won’t come outside if you don’t like that I am borrowing your youngest sister’s appearance.

“No, it’s okay.”

—That’s a relief. To be honest, I was quite looking forward to leaving your body and traveling the world myself.

“...”

Rosaline hopped down from the table as light as a feather and stood on the ground.

—I wanted to experience the world with my own body. I am very excited.

With her hands behind her back, she leaned back and turned to look at Young-Joon. Her face really looked like Ryu Sae-Yi before getting cancer, healthy and full of dreams.

—Can I go?

“Uh... Yeah.”

Young-Joon allowed her to go in a hesitant voice.

—Thank you!

Rosaline ran through the restaurant quickly.

“Don’t go too far!” Young-Joon shouted, not realizing the fact he just said that.

—Don’t worry! I can send you a message as well.

Rosaline was already out in the hall.

—And it’s okay since my mother cell is in your head.

With that message, there were no more. Rosaline was like an excited young child who was visiting the amusement park for the first time.

“...”

Young-Joon was kind of worried. He felt like he had become a dad even though he wasn’t married.

Young-Joon took a sip of wine and waited for Rosaline and Song Ji-Hyun.

Ring!

A message popped up with a notification sound.

[Rosaline is exploring the outside space. You can use the mother cell’s fitness and Rosaline’s senses can be shared with you.]

[Share Rosaline’s senses. Fitness consumption rate: 0.8/second.]

‘Share senses?’

The fitness consumption rate was pretty steep, but he was so curious about how it would feel.

Young-Joon pressed the button.

Click.

The view that Rosaline was seeing showed up in his head. It was Song Ji-Hyun's pale, lean calf and thigh as she was standing up.

"Eek!"

Young-Joon's shoulders flinched in surprise.

It was in the women's washroom. Rosaline, whose viewpoint was quite low compared to Song Ji-Hyun, was right at her leg, she did not feel anything at all. However, that was normal because it was impossible to see a cell with the naked human eye.

Rosaline sent him a message.

—I am going to observe Song Ji-Hyun more closely. This woman played a big part in rescuing me from the trauma.

Rosaline climbed up to the sink and stared at Song Ji-Hyun's face very closely. She was looking in the mirror and fixing her makeup. She reapplied her lipstick and tidied her hair. Then, she made a few expressions.

"Ahem, hm."

She cleared her throat.

"It's really good."

She smiled into the mirror.

"Hm... Maybe this doesn't seem genuine? If we're in the middle of eating..."

Song Ji-Hyun puffed her cheeks with air and pretended to chew.

"It's so good!" she said in a bright voice as she looked into the mirror. "Doctor Ryu, thank you for recommending such a good restaurant." Song Ji-Hyun tucked her hair behind her ear and smiled towards the mirror.

—...

Rosaline froze.

—Ryu Young-Joon, what is Doctor Song doing right now? Rosaline asked like she was shocked. Young-Joon had his eyes shut at the table like he saw something that he shouldn't have.

—Ryu Young-Joon, this is the most incomprehensible situation that I have ever heard and seen. Is Doctor Song chewing air? I don't think she has any mental illness...

'No... It's not that. Stop looking at her and come out. I feel like I'm committing a sin.'

Young-Joon's face was flushed. He hastily stopped sharing senses as he felt like he shouldn't see any more.

* * *

Park So-Yeon completed thirteen types of the animal disease diagnostic kit. The rest were going as planned as well. Young-Joon was all over the place with the clinical trial of the pediatric liver cancer patient. She was motivated pretty hard after hearing that he was focused on experiments day and night. It was because she felt like she knew how he felt.

'I really hope it goes well.'

Park So-Yeon, who knew about Young-Joon's trauma, prayed for that little girl whenever she thought of her. She hoped the clinical trial patient would be cured and that he would overcome his pain. And on one side, she focused on what Young-Joon had assigned her, as she wanted to welcome Young-Joon, who was busy with the clinical trial, with huge results when he returned. As such, Park So-Yeon worked as hard on experiments as Young-Joon, and the results until now were quite successful.

'Hoof-and-mouth disease, AI, bluetongue disease, sheeppox, rabies, anaplasmosis, duck virus hepatitis, chicken mycoplasmosis, Akabane virus, Marek's disease, infectious bursal disease, porcine reproductive and respiratory syndrome.'

Single diagnostic kits for thirteen diseases.

'He'll like it, right?'

Park So-Yeon organized the diagnostic kit samples in the cold room and left the lab. It was already nine o'clock at night. Time flew by when she was working nowadays. Then, her eyes widened when she unlocked her phone.

[A-Bio's Cellicure clinical trial succeeds again. Their victory continues.]

[Confirmed that liver cancer and bone metastasis have all been destroyed.]

[The spotlight is on Cellicure, a miraculous liver cancer cure.]

[A-Bio finds commercialization potential in chimeric immunotherapy, a third-generation anticancer treatment.]

Park So-Yeon clicked on additional articles.

[Two genius scientists saved the life of a nine-year-old girl.]

[Song Ji-Hyun of Celligener, the new talented scientist who will follow Ryu Young-Joon and lead science in Korea.]

[What impact did the Ryu Young-Joon Syndrome have on young scientists in Korea? Focusing on Song Ji-Hyun, the influence on young scientists...]

Park So-Yeon stopped scrolling for a second. She read the articles one by one. Foreign media was also covering this news like it was really big. On the homepage of the New York Times and Le Monde, an article about the clinical trial was on the front page, and an interview that was linked as a special edition was written beneath it.

[Miracles can be produced in the laboratory.] magic

[Interview of CEO Ryu Young-Joon, who placed a conquer flag in pediatric liver cancer.]

[Interview of Song Ji-Hyun, the partner of humanity's greatest genius.]

On the main screen, there was a picture of Young-Joon and Song Ji-Hyun sitting beside each other. They were smiling in a friendly way.

Park So-Yeon read Young-Joon's interview first.

—The key developers of Cellicure are Doctor Song Ji-Hyun and her colleagues at Celligener. We bought this drug, which was in a clinical trial conducted by A-Gen, and ended up developing it together. All the credit should go to Doctor Song Ji-Hyun and Celligener.

Young-Joon gave up all the applause for Song Ji-Hyun in that humble interview. Song Ji-Hyun was worthy of it as Cellicure was something she achieved at Celligener from start to finish without Young-Joon's help. Honestly, the real genius might be Song Ji-Hyun if Rosaline wasn't there.

And in Song Ji-Hyun's interview, she thanked Young-Joon.

—I got a lot of hints as I watched Doctor Ryu's research. I also thought of the exosome coating technology thanks to him. Celligener received a lot of help from Doctor Ryu in the past, and he is a huge inspiration to me. I wouldn't have been able to do the clinical trial this well if it wasn't for him.

How they were flattering and respecting each other after a huge success looked very heartwarming. Song Ji-Hyun had made headlines before because of her beauty, but this time, she was rising to stardom at once as the focus was put on her skills as a scientist.

Chapter 100: Laboratory One (2)

Young-Joon, who had a good rest at home, something he hadn't done in a while, spent the weekend morning lazily. It wasn't until eleven o'clock that he

slowly got out of bed and came out into the kitchen. He saw Ryu Ji-Won, who was watching the TV while laying on the living room couch, laughing.

“Oh, you’re up. Mom made *kimchi-jjim*[1] before she left. Have some,” she said after briefly glancing at him.

“What about you?”

“I had some before.”

“Where’s Mom?”

“She went out on a date with Dad.”

“Ha. You’re not going anywhere today? You don’t have any plans?”

“No? Should I have some?”

“Shouldn’t you be going on blind dates and meeting boys at your age?”

“It’s so bothersome.”

“If you have a mutation in the SLC35D3 gene, the dopamine receptors in your brain get dull and you get lazy. You don’t get any activity and only eat chips while sitting on the couch.”

“It doesn’t apply to me since I’m laying on the couch.”

“...”

“Oh!” Ryu Ji-Won suddenly got up.

“Right, I had something I wanted to ask. Who is Doctor Song Ji-Hyun? Are you guys dating?”

“What kind of nonsense is that?”

“Hehe.”

Ryu Ji-Won squinted and stared at Young-Joon. “What?”

“You know that you smelled like women’s perfume when you came in yesterday night?”

“Did I?”

“I heard that the clinical trial succeeded. From what I suspect with my detective skills honed by watching Detective Conan when I was younger, you went on a date with Doctor Song to celebrate the success. Right? Hehe. Tell me about it.”

“Stop joking around and keep watching TV. Is this the *kimchi-jjim*?”

“Yeah. And look at this.”

Ryu Ji-Won ran towards him with her phone. On it were posts on Young-Joon's fan club. It talked about Song Ji-Hyun as much as Young-Joon.

—It's great to see two geniuses cooperate and research together while respecting each other. I'm rooting for you.

—Unnie[2] marry me...

—Ryu Young-Joon and Song Ji-Hyun. These people are driving me crazy.

—They cured end-stage liver cancer that spread to the bone marrow in the pelvis... And in a nine-year-old? It's like a movie. Insane.

—I know I shouldn't be doing this with actual people, but I hope they get together.

—What kind of genius would be born if those two get married and have kids?

"Stop reading useless things," said Young-Joon as he gave the phone back to Ryu Ji-Won.

"Who did you have dinner with yesterday?"

"Doctor Song."

"See! I knew it."

"She is just a research partner."

"Are you sure she's not a life partner?"

"Phew. You're such a kid. Getting all excited about dating."

Young-Joon poked Ryu Ji-Won's forehead.

"Doctor Song and I aren't like that. Mind your own business."

Young-Joon turned his head towards the pot again.

"Oh," he said in surprise.

Rosaline was on top of the kitchen counter beside the sink. She was looking straight down at the *kimchi-jjim* inside the pot and examining it while on her knees.

'I really can't get used to this.'

Rosaline had to recover for at least six hours in Young-Joon's body after spending thirty minutes outside. It meant that she could only go outside for less than two hours a day.

—This is a very fascinating food.

Rosaline said.

'Is it?'

—Korean cabbage leaves with bacteria and meat were steamed together with water. To me, it's a pot full of bacteria corpses.

'...'

—Don't worry; they are mostly beneficial gut bacteria. It is lactic acid bacteria to be exact.

“Hey, so you're not going to date Doctor Song? Honestly, I think there's potential. To meet someone like that with your face is...”

—There are a lot of microorganisms that break down glucose, but there are significantly less bacteria that break down lactose. As mammals used lactose for that merit just before the point of divergence...

“Ah, shut up!” Young-Joon shouted. “Seriously, these kids. Move. I have to eat and go out.”

* * *

Park So-Yeon was already at A—Bio. She requested a research meeting with Young-Joon regarding the development of the animal disease diagnostic kit. The reason why she came to see him even though there was a team meeting that included Park Dong-Hyun and Jung Hae-Rim was because she wanted to talk about something personal with him. Park So-Yeon knew Young-Joon well. All he did was work during work hours, and he was as cold as a robot when it came to science. However, he was the most warm-hearted person when he wasn't working. Although she hurt him a lot by leaving him when he was going through something really difficult, she knew that he wasn't the type to refuse when she asked to talk for a little while.

'Of course, we also won't be able to date again.'

Park So-Yeon had no intention of asking for that as well. It was true that she had regrets, but it was not about wanting to date him again. What was left was something like a regret for ending things the wrong way. Park So-Yeon wanted to fix that.

Her hands trembled as she grabbed the door handle to Young-Joon's office.

'Haa. Be calm. This is really the last time, so I have to do well.'

Click.

When she came into the office, he was sitting at his desk and reading a paper. He was exactly the same person who she loved back then.

“Have a seat, Scientist Park So-Yeon,” Young-Joon said as he stood up from his chair. “I had seven meetings today, and this is my last one. Let’s get it over with and go home. Let’s take a look at the data.”

As he sat down on the sofa, Park So-Yeon sat down across from him and opened her laptop. She began briefing him on the progress.

“As you can see, we tested for hoof-and-mouth disease, swine fever, and AI forty times and succeeded in diagnosing the target disease all forty times,” Park So-Yeon said. “And if you see the next chart, for rabies and anaplasmosis...”

Her briefing went on for about fifteen minutes. During it, Young-Joon asked small questions like what the error bar beside the graph represented.

And as she went onto the last slide, she said, “As mentioned before, we have secured single diagnostic kits for thirteen diseases, and we believe that diagnostic kits for the rest of the twenty-one diseases will be completed in two weeks.”

“Thank you. Good work. You did a lot in a short span of time. It’s amazing.”

“It was just difficult to find the right conditions the first time, but the rest was just changing the type of Cas9. The rest will come out soon.”

“Great. I wasn’t able to follow the progress of the project because I was busy with clinical trials, so thank you for coming to see me and briefing me on it. Keep up the good work until the project is over.”

Young-Joon grinned.

“Of course,” Park So-Yeon replied.

“I think that’s everything, right?”

“...”

Park So-Yeon stared at Young-Joon. It was time for her to bring up the personal conversation.

“Um...”

“Oh, right,” Young-Joon said.

“So-Yeon-ssi, you might have to work with me for two to three more years after this project ends.”

“Pardon?”

"I am going to receive temporary authority over the Mobile Diagnostic Device Research Department. I have already discussed this with Mr. Yoon."

"Really?"

"Yes."

"For what?"

"I am going to purchase two hundred of Illemina's equipment from Conson & Colson. I need scientists who can operate them and analyze DNA. I am going to begin a new genome project with them."

"The Genome Project?"

"We will analyze the genomes of different races and create background knowledge for future pharmaceuticals. All pharma companies will use it."

"..."

"You are especially good, so I look forward to working with you."

"... Um, sir," Park So-Yeon said.

"Can I talk about something personal for a moment?"

Young-Joon shrugged.

"What is it...?"

Park So-Yeon hesitantly opened her mouth while touching her hair.

"I'm leaving A-Gen."

Young-Joon's eyes widened.

"Leaving?"

Park So-Yeon's face had a faint smile on it.

"What do you mean you're leaving?" Young-Joon asked.

"That is... Can we... think that this is our last time together and... go back to the past?"

"..."

Park So-Yeon bit her lower lip. She played with her pants near her thigh, clenching it and letting go repeatedly.

"Okay, go on," Young-Joon said.

"..."

Park So-Yeon cautiously spoke.

“I thought about it a lot as I watched you work. I wondered what it would feel like to constantly challenge and run towards your dreams and goals so passionately and how much fun it would be. I just get my pay by doing a few experiments every day while trying to please my seniors.”

“Um...”

“And you were so different compared to me. The happiest I’ve been at this company in the past year and a half was when I was developing the diagnostic kit. Working was really fun. It was hard to stay up and research, but it was fun. So, I’m going to try and look for something like that. I’m going to quit my job and find something that I like... Something like my dream. So, I told Lab Director Kim Hyun-Taek that I’m quitting.”

“...”

“It’s funny when I think about it now. I could have quit this company this easily. I thought I’d be in trouble if I kept dating you. Why was I so stupid? What was I so scared of that I betrayed someone who believed in me? And it was when things were the hardest for you. When there was someone who pointed out the unethical behavior of the company and fought with the director, I was just afraid of getting on their bad side and having problems with promotions...”

“... No, it’s understandable. I didn’t think of you and acted rashly. I don’t regret it, but I still feel bad. So, don’t feel guilty.”

“... Things are so ironic, aren’t they? I saw that Doctor Song, the one who developed Cellicure, is famous these days.”

Park So-Yeon smiled.

“Yeah. She was already talented and she has passion, too. She should get famous.”

“You look good together,” said Park So-Yeon. “I wasn’t good enough to be by your side. The reason we broke up is because I couldn’t measure up to you.”

“...”

“That’s why I’m quitting. You get what I’m saying, right?”

“... Yeah, I think I know what you mean.”

There was a moment of silence. Park So-Yeon bit her lip.

“Phew. I wasn’t going to talk about this first. I started off so weird.”

She chuckled. In contrast, her eyes were full of tears. She lowered her head.

“I’m sorry...” she said. “I’m really sorry. And congratulations on everything you achieved after leaving Lab One. I am sincerely happy for you, and congratulations.”

“... ”

“I know that you don’t have any feelings towards me now. I’m not asking you to take me back or anything. I just wanted to apologize and congratulate you.”

“... Okay.”

Park So-Yeon sniffled, then smiled.

“I should get home now. I’ll make sure to finish the remaining kits, so don’t worry. And you have to be professional with me like usual if you meet me in the few weeks I have left, so you don’t have to care about that.”

Park So-Yeon got her things and left.

“I’ll be on my way,” she said. “Mr. Ryu.”

* * *

Click.

Park So-Yeon felt like her heart, which was drenched in sadness, was beating out of her chest as she closed the office door behind her. She let out a deep breath. It was over now; it was a clean ending. She felt like a weight had been lifted off her shoulders.

‘Should I go to the United States after I quit... Or maybe Europe... Should I apply for the WHO?’

A smile appeared on her face. She came down from the office with light footsteps. magic

‘Did he say that he was going to get authority of the Diagnostic Device Department for a few years?’

Park So-Yeon tilted her head in confusion. Recently, Kim Hyun-Taek had been planning a new national project for the Diagnostic Device Department. Even she didn’t know what it was yet in detail. All she knew was that Kim Hyun-Taek was making it a large project with all the department members participating one hundred percent. Park So-Yeon had told him that she was quitting in the process of writing the list of participants for the project as it could be a problem if she quit after the project started.

‘But can they transfer the authority over the department after this kind of thing starts? When Kim Hyun-Taek is doing a national project with this department?’

Of course, it was going to take a while for it to be selected as a national project as it was just in its planning stages right now. And there wouldn't be any problem if Young-Joon got the departmental authority in the meantime; there was a high chance that that would happen.

'But something feels off for some reason.'

Park So-Yeon thought as she got on the bus.

'I should find out more about this project when I go to work tomorrow.'

1. a steamed kimchi stew, typically with pork ?

2. How a younger woman refers to an older woman informally. ?