Who am I ?

Sorrow is permeating everywhere, which Friday never contains. The atmosphere also affects Watson, a small protein, now sitting on the stairs overwhelmed. The earthquake perturbs him sometimes, trying to prevent Watson from memorizing his friends, but he has seemingly got used to it. An unknown enemy attacked the planet days ago. In order to vibrate the enemies out of the planet, the earthquake begins since then.

This planet is called the 'body', constitute of 'organs'. Organs are made of 'tissues', and tissues are composed of 'cells'. Every cell contains three main parts: the cell membrane, the nucleus and the cytoplasm. Here is where Watson is working and living. Watson used to meet his friends after work and celebrate on Friday evenings, but he has had no information from his friends for a long time since the enemy came.

The enemy is called SARS-CoV-2, which is an RNA virus and not fully understood yet. What the other cells in the body have suffered tells that the particles firstly bind to cellular attachment factors, then a specific soldier from the enemy - called S protein, will interact with the cellular receptors to promote viral uptake and fusion at the cellular or endosomal membrane. Following the entry, the awful enemy will release and uncoat its core troops- the genomic RNA to translate into two core workers, ORF1a and ORF1b, and then process into non-structural proteins to form a master military- replication-transcription complex. Through further synthesis, translation and assembly, the SARS-CoV-2 generate more virion and infect other cells. Now, the cell in which Watson is living is still intact, but the concern is written full of his face.

'Where are they?' Watson looks up.
Those guys he used to hear boasting and laughing on Friday are now missing. They are some RNA-binding proteins, always proud of their work.

Usually, John starts the conversation. ‘Hey bro, you should know how fancy my work is. Do you know why the RNA is stable? RNAs face different fates after being transcribed. Once modification occurs, the gene expression will change.’

John often paused here and look around. ‘ I! I am the one who stabilizes those RNAs! Wonder how? See my fingers! They are RNA recognition motifs. Using them, I can stabilize RNA by modulating the interaction between RNA and degradation machinery. ’

‘What a big deal!' Adar says. He is a protein working on RNA modification. ‘Our work is also important! We can edit the nucleotides and contribute to editing events in RNA, and we can affect the products of RNA, which they call alternative splicing!’

Tina, a protein working on RNA transportation joins the topic, ‘come on guys, we are all important in the cell! After the processing of RNA, how can that RNA be exported? Do you realize my importance?’ Tina winks.

Usually, Watson just smiles and listens to them carefully on the stairs, watching how proud they are of their functions. The RNA binding protein family is big, every component has its critical role. Except for these guys, the planet also has proteins working for localization and translation. Watson is also an RNA-binding protein and can recognize RNA as well, but he does not know his function too much.

Suddenly, a piece of news is spreading across the cells.
‘Warning, warning! Our planet- the body is now being attacked by an enemy called SARS-CoV-2. Some cells are ruined, and organs are now collaborating to repel the virus! Earthquakes will frequently happen as a result of the defense, please do not panic!’

The news continues. ‘According to the factors and what happen in the past, we decode some information'. Watson looks up and wants to know if anything is about his friends.

‘Some RNA-binding proteins are hijacked by our common enemy -SARS-CoV-2. it utilized those factors for its genome replication, transcription, and translation to accomplish its viral life cycle, we will call them proviral factors! It will be helpful if we can inhibit those RNA-binding proteins !’ Watson starts to wipe his tear and try not to be more sorrowful when worrying his friends may have died under the sin of the awful virus - SARS-CoV-2.

‘In the meantime, we also have some RNA-binding proteins working hard to save our planet! Some of them recognize the virus at a first glance, and some are generating immunity to defend! They are all trying to save our planet and defend it! Please join me applaud and be proud of them! ’ Watson hopes he is also an antiviral factor.

‘In the past, we do not know the critical roles of the RNA binding proteins. Currently, they are of vital role in this war. We must admit that we lack knowledge about them and how they work. We will assist the scientists to identify these factors and know more about them.'

'The immune system army now gets the signal and will work promptly, I ensure you that we will defeat the virus! We will protect our planet - the body!’

When the news was to finish, Watson is attracted by something uncontrollably. Fortunately, he is no longer dispirited, he gains power more than sadness. Though he did not know his function entirely, now he will answer the question.

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