SAMD9 Proteins and Their Function With The Development of Leukemia

Leukemia has been extremely detrimental to those experiencing it, as well as family and friends that are close to those diagnosed. In today's day and age, there are many that go through the trials and tribulations that come with the disease. Although there are not any cures for this specific type of cancer, Junpeng Deng from Oklahoma State University, along with his students, is actively working towards finding a reason as to why this disease is able to develop, and how to prevent it.

The research that has been done by Junpeng Deng, and his students is extensive and has revealed that a specific protein within the human body is a huge factor in developing a disease such as Leukemia. Leukemia, specifically in children, can lead to a shorter life expectancy, and in turn is a major issue in the United States today that does not have a cure. Many of these children as Junpeng Deng states, "will not reach being a teenager, and die before they reach being a teenager". This devastating illness is partly due to the SAMD9 protein translation shutting down various functions of the body.

As Deng, and his student researchers have studied, Leukemia is largely undefined, and there are not a whole lot of options for treatment, prevention, and curative agents in order to help those with it. Junpeng states, "there are currently no drugs, and no clue how to treat this kind of disease, which is very significant in a sense". There are currently no approved drugs at the time to help cure this specific type of illness. Many researchers studying this specific type of cancer at the moment are specifically looking at certain parts of hydrolysis in order to try and treat the illness, but with this comes many toxicity issues and reactions. Junpeng, and his team have been looking at a completely different side of the protein in order to try and fully understand its mannerisms, and the way it functions in order to properly treat Leukemia.

The studies that have been done by Junpeng Deng, as well as his students include looking closely at the specific translation of the SAMD9 protein that is interrupting specific functions within the body. With this specific type of protein, binding is critical for its function. What has been found thus far is that the SAMD9 protein is shutting down specific protein translations that are essential to living healthily. The overstimulation from the SAMD9 protein is ultimately detrimental to the human body because it is overwhelming the designated functions of the protein, which in turn causes specific proteins within the body to fail, so to speak.

There are ways that Junpeng Deng, as well as his student researchers, are trying to prevent the detrimental effects of the overactive SAMD9 proteins. Within the next couple of years, Junpeng Deng and his research students plan on designing a

specific model to help prevent the overactive functions the SAMD9 protein may entail in relation to Leukemia. As work continues on, “the first priority of our group will be trying to review the full mechanisms of how the molecule functions, but at this time what we have so far is the review of the double stranded binding which is a hotspot on the protein” states Junpeng Deng. Their research on this specific topic can help change the lives of millions. In the next couple of years, Junpeng, and his students, are focusing on researching as well as designing a prototype in order to target the proteins that play a large role in the development of Leukemia in children. Their work is very much needed, and as stated, will ultimately change the lives of many if successful.