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Science in the News

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Science in the News

There are many types of RNA molecules such as messenger RNA, translational RNA, ribosomal RNA that all function as an intermediate for making a protein or a signal to trigger a pathway. A biochemistry professor identified a non-coding RNA (one that does not contain the information to encode a functional protein), nc886, that was involved in a viral signaling pathway.

When the immune system detects foreign material, in this instance, a virus, the OAS synthetase protein, becomes active and triggers a pathway that leads to antiviral mechanisms as well as the trigger of the innate immune system. Examples of these antiviral mechanisms that are turned on by OAS are viral and internal RNA degradation and viral replication inhibition.

The researchers found that nc866 is an activator for not only the OAS pathway but also other related pathways. This is due to the fact that nc866 can adopt two different conformation forms, one of which, allows for the activation of the OAS pathway. Moreover, since conformation is correlated with function, it was clear that this ability to switch shapes allowed nc866 to have multiple functions.

Further research topics include investigating the relative abundances of nc866 in cells, as the ncRNA is found in every single human cell. Furthermore, scientists are looking to investigate how these relative abundances affect the levels of the two forms of nc866. These follow up experiments will hopefully further antiviral treatments and therapy against diseases and other immune responses elicited by viruses.

<u>Works Cited:</u>

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