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Scientist at NCCS discovered cancer causing non-coding RNA called 'Ginir'

By Dr. Bilqeesa Bhat

Scientists from National centre for cell science (NCCS), Pune, and Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar have discovered that a long non-coding RNA molecule known as '*Ginir'* plays an important role in development of cancer.

Research team headed by Dr. Anjali Shiras from NCCS worked on a conventional theme that that non-coding RNAs causes de-regulating cell growth balance, and subsequent cancer formation in the body.

It took her team more than a decade to establish that non-coding RNA called as 'Ginir' acts like cancer causing oncogene leading to tumor development. The research findings were published in international journal, *PLoS Biology*.

In this study, tumor development process was studied using experimental mouse model systems that mimic the natural processes in the human body. The unprecedented discovery also demonstrated the role of the centrosomal protein called Cep112 which acts as interacting protein partner for Ginir. Further, scientist explained that any imbalance Ginir-Cep112 interaction leads to abnormal cell growth.

This study was first to report the mechanism of action of any non-coding RNA. It changed the understanding of how cancer occurs, and has opened a Pandora's Box encouraging researchers to look outside the classical concepts of onco-genesis.

Cancer is one of the most dreaded diseases the world over. With ongoing efforts of several scientists, many genes responsible for uncontrolled cell growth leading to cancer have been widely studied. Genes which increase the tendency of cancer development are called oncogenes. Therefore, any molecule which can control the action of oncogenes would ideally be effective in preventing tumor formation.

The team is presently working on understanding the mechanisms responsible for the regulation of expression of the Ginir RNA in the cells. They are also working towards gaining insights into how controlled and balanced expression of Ginir could keep a check on cell growth, thus

preventing tumor formation, and help in designing of improved methods for the detection, management and treatment of cancer.

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