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# 'Junk DNA' plays active role in cancer progression, researchers find

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Scientists at The University of Nottingham have found that a genetic rogue element produced by sequences until recently considered 'junk DNA' could promote cancer progression.

The researchers, led by Dr Cristina Tufarelli, in the School of Graduate Entry Medicine and Health Sciences, discovered that the presence of this faulty genetic element—known as chimeric transcript LCT13—is associated with the switching off of a known tumour suppressor gene (known as TFPI-2) whose expression is required to prevent cancer invasion and metastasis.

Their findings, published online this month in the journal *Nucleic Acid Research*, suggest that LCT13 may be involved in switching off TFPI-2.

This faulty genetic element was previously identified by Dr Tufarelli's team as part of a group of chimeric transcripts which are produced by DNA sequences frequently regarded as 'junk DNA' called LINE-1 (L1).

The work reported now expands on the previous observation as it indicates that in addition to acting as potential diagnostic tools these rogue elements can play an active role in cancer.

Dr Tufarelli said: "This study has identified a novel way in which 'junk DNA' can interfere with the normal functioning of a cell. The next step will be to understand how these elements become switched on. This information will be important in the design of treatments aimed to

prevent activation of these elements and cancer progression."

The work was initiated through funding by Cancer Research UK, the Royal Society, MRC and Breakthrough Breast Cancer.

A copy of the paper, Expression of a Large LINE-1 Driven Antisense RNA is Linked to Epigenetic Silencing of the Metastasis Suppressor Gene TFPI-2 in Cancer, is available to view online on the website for the journal *Nucleic Acid Research*.

Provided by University of Nottingham