Protein complex regulates transcriptional elongation, prevents tumor growth.

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The use of information stored in our genes is tightly controlled. The active use of a gene (called gene expression) is involves the production of RNA based on the DNA code (transcription) into messenger RNA (mRNA). This mRNA is then 'read' and used to produce proteins via a four-step process called translation. Regulation of elongation, the third step in translation, can play a key role in controlling cancer development (tumorigenesis).

An international team of scientists has recently discovered that control of elongation is important in a process known as the epithelial-mesenchymal transition (EMT). EMT is a common feature of cancer cells during which they become less like normal adult tissues. EMT is directly correlated to tumor growth and metastasis.The TGF-β-activated-translational mRNP complex prevents tumorigenesis by inhibiting the translation of proteins that drive EMT. The researchers showed how this works by converting noninvasive breast epithelial cells into aggressive, metastatic cells.

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