

# A noncoding RNA promotes pediatric bone cancer

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Ewing sarcoma is a cancer of bone or its surrounding soft tissue that primarily affects children and young adults. A hallmark of Ewing sarcoma is a translocation event that results in the fusion of an RNA binding protein, known as EWS, with a transcription factor, such as FLI1. Previous work suggested that the fusion protein EWS-FLI1 promoted cancer by changing gene expression; however, the gene targets were unknown.

A new study in the *Journal of Clinical Investigation* indicates that a long noncoding RNA named Ewing sarcoma-associated transcript 1 (EWSAT1) is a critical target of the fusion protein and contributes to the complex network of changes that occur in Ewing Sarcoma.

A team led by Alejandro Sweet-Cordero at Stanford University identified increased expression of EWSAT1 in cancer cells from children with Ewing sarcoma. Further they showed that this noncoding RNA is important for [cancer cell growth](#) and associated with the repression of several genes downstream of EWS-FLI1.

Their work supports the notion that long noncoding RNAs can be key drivers of cancer and identifies an important mediator of Ewing Sarcoma.

**More information:** Long noncoding RNA EWSAT1-mediated gene repression facilitates Ewing sarcoma oncogenesis, *J Clin Invest.* 2014;124(12):5275–5290. [DOI: 10.1172/JCI72124](https://doi.org/10.1172/JCI72124)

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