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Technology Transfer Office

Oct-1 as an Oncoprotein for Cancer Treatment

Researchers at the University of South Florida have developed a novel antisense strategy that allows nucleic acid inhibitors of Oct-1 to be used for cancer treatment.

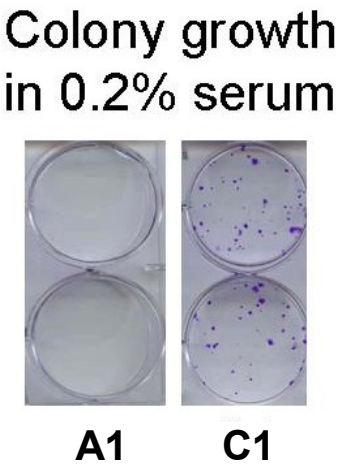
Oncoproteins, which are the proteins encoded by oncogenes, can induce cancer in animals by transforming normal cells into cancerous cells. Many oncoproteins are either derivatives of, or identical to, normal cellular proteins that regulate cell growth and division. Multiple factors are involved in the production of oncoproteins. One such factor, known as Oct-1, is a commonly expressed transcription factor that binds to a number of genes. Oct -1 is known to activate the histone H2B and is important during DNA synthesis. Due to these facts, Oct-1 is considered an oncogene and may be used to develop novel cancer treatment methods.

USF researchers have shown that nucleic acid inhibitors of Oct-1 can be used for cancer treatment. Oct-1 antisense clones were grown and found to exhibit a loss of cancerous traits. Thus, an effective antisense strategy was established and can be used to significantly lower Oct-1 levels and consequently reduce tumor characteristics in cells. The present invention provides a convenient assay to test for Oct-1 function when developing potential anti-cancer therapeutics. For example, the binding of Oct -1 to DNA, which can be easily tested in a lab, facilitates tumor development. Thus, drugs that prevent the binding of this protein to DNA would be candidates for anti-cancer therapeutics. This novel technology can also be used to diagnose and sub-classify certain tumors for prognosis.

ADVANTAGES:

- **Inhibition of tumor growth**
- **Potential diagnostic tool**
- **Prospective drug screening method**
- **A simple assay to test Oct-1 function**

Inhibition of Tumor Cell Growth Through Antisense Technology for Oct-1



Oct-1 Regulates Cancer Cell Growth
A1: Oct-1 Antisense Transfected Cells
C1: Control Cells

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