Cloning of the Human Nuclear Receptor Co-Repressor Gene

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Technology description

Summary

Alteration in the expression of human genes is critical to the development and progression of many diseases. These include, among others, cancer, inflammation, cardiovascular disease, hypercholesterolemia, blood pressure, and diabetes. The Human Nuclear Receptor Co-Repressor (HuN-Cor) gene represents a technology that may be used to alter the transcription of genes. It provides a general mechanism by which many genes may be modulated throughout the entire range of being turned on to being completely turned off. The HuN-Cor gene encodes for a ubiquitously expressed protein that silences other genes. It does this by specifically recruiting an enzyme complex that causes local folding of chromatin, not allowing other transcription factors to access the DNA. HuN-Cor represents a powerful research tool that can be used to study gene expression and characterization of many different genes. It may ultimately have great utility in controlling gene expression via gene therapy technology, and may also be useful as a target for the isolation of pharmaceutical compounds that enhance or inhibit expression of genes. For example, it may be possible to engineer mutations of the HuN-Cor gene that dominantly inhibit its function; these mutants could then be expressed in appropriate target tissues or cells in order to control gene expression. Finally, the gene product may have utility in the discovery of therapeutic compounds that modulate gene expression via HuN-Cor.

Institution

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