Alteration gene expression may offer profound therapeutic benefits for conditions in which derepression of gene expression permits the transcription of genes that can “rescue” a phenotype caused by a mutation in a closely related gene. By a similar logic, genes whose transcription is repressed by pathologic mechanisms as occurs in neoplasia can be re-expressed with restoration of normal cellular functions including apoptosis.

Tranylcypromine, a monoamine oxidase inhibitor, also inhibits the activity of chromatin-modifying enzymes that participate in gene expression. TC has been shown to alter patterns of gene expression in vitro. This study will examine the effects TC has on hematopoietic gene expression in adult patients taking TC for the treatment of depression using a single 5 mL sample of blood.