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Oncogene E1A

National Cancer Institute

Source

National Cancer Institute. *Oncogene E1A*. NCI Thesaurus. Code C45505.

Viral Oncogene E1A encodes E1A Protein, a regulator of early viral gene transcription. E1A interacts with diverse cellular proteins to override host cell controls of cell cycle, differentiation or apoptosis. E1A reprograms gene expression and other processes, which leads to transformation. E1A interacts with general and specific transcription factors, co-activators and chromatin-modifying enzymes. Targeted proteins include pRbs, p300/CBP, cyclin/Cdk, transcriptional corepressor CtBP, YY1, RACK1 and SWI/SNF complex, as well as cAMP/PKA signal components. E1A N-terminus binds pRb and p300/CBP regulators. E1A C-terminus negatively modulates the N-terminus and interacts with CtBP. By binding COUP-TF repressor and decreasing NF-κB Class I enhancer binding, E1A can repress MHC Class I gene transcription and allow tumor cells to avoid lysis by cytotoxic T lymphocytes. E1A also determines susceptibility to NK cell lysis.