J Exp Med. 2011 Aug 1;208(8):1585-93. Epub 2011 Jul 25.

Genomic loss of the putative tumor suppressor gene E2A in human lymphoma.

Steininger A, Möbs M, Ullmann R, Köchert K, Kreher S, Lamprecht B, Anagnostopoulos I, Hummel M, Richter J, Beyer M, Janz M, Klemke CD, Stein H, Dörken B, Sterry W, Schrock E, Mathas S, Assaf C.

Source

Max Planck Institute for Molecular Genetics, 14195 Berlin, Germany.

Abstract

The transcription factor E2A is essential for lymphocyte development. In this study, we describe a recurrent E2A gene deletion in at least 70% of patients with Sézary syndrome (SS), a subtype of T cell lymphoma. Loss of E2A results in enhanced proliferation and cell cycle progression via derepression of the protooncogene MYC and the cell cycle regulator CDK6. Furthermore, by examining the gene expression profile of SS cells after restoration of E2A expression, we identify several E2A-regulated genes that interfere with oncogenic signaling pathways, including the Ras pathway. Several of these genes are down-regulated or lost in primary SS tumor cells. These data demonstrate a tumor suppressor function of E2A in human lymphoid cells and could help to develop new treatment strategies for human lymphomas with altered E2A activity.

PMID: 21788410 [PubMed - indexed for MEDLINE] PMCID: PMC3149217 [Available on 2012/2/1]