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Increased Expression of Splicing Factors SAM68 and SRSF1 in Immortalized-human Diploid Fibroblasts Expressing SV40 T-antigen does not alter BCL-X Splicing Profile

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Abstract

The BCL2L1 gene, also known as BCL-X, encodes both anti and pro-apoptotic proteins by alternatively splicing. Splicing factors SAM68 and SRSF1 direct the selection of most BCL-X isoforms, notably BCL-X(L) and BCL-X(s). Historically, SV40 T-antigen transformation of cells has been employed for elucidating the initiation and maintenance of cancer. To determine the role of alternative splicing in cellular transformation, this study employed immortalized-human diploid fibroblasts (HDF) expressing the early region of SV40. Results from immunoblotting show that SAM68 levels are directly correlated to T-antigen expression, and SRSF1 levels are increased in T-expressing cells. Surprisingly, there was no alteration in the RNA isoform ratio of BClX(L) and BClX(s), and only BCLX-(L) was detected by immunoblotting in all cells. Results suggest that the increased growth rate and density of the transformed HDF cells is not the result of increased anti-apoptotic BCLX-(L). Studies are ongoing to elucidate potential SAM68 and SRSF1 targets.