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Investigation of BIN1 Isoform in Immortalized Human Diploid Fibroblasts Transformed by SV40 T-Antigen

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Bridging intergrator-1, BIN1, functions in membrane recycling, cytoskeleton regulation, DNA repair, and cell proliferation. As a tumor suppressor, BIN1 binds to c-MYC to inhibit S-phase gene transcription aand the N-terminus sequesters PARP, stopping DNA repair, and promoting apoptosis. Decreases in overall levels if BIN1 correlate with poor cancer prognosis. Additionally, BIN1 message can be alternatively spliced, creating isoforms lacking the myc-binding domain. This study was designed to investigate a potential role of BIN1 in viral tumorigenesis by comparing the accumulated levels and isoforms in immortalized human diploid fibroblasts and their simian virus 40 transformed counterparts. RTPCR, revealed several processed transcripts and immunoblotting detected a doublet depending upon the antibody employed. Thus far we have not detected a qualitative difference between the RNA transcripts amplified; however, preliminary data indicate that the lower BIN1 protein band may predominate in the transformed cells. Studies are ongoing to answer these questions.