

Identification and Functional Characterisation of S6 Kinase Nuclear Associated Partners

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Abstract:

S6 Kinase (S6K) belongs to the AGC family of serine/threonine kinases. It is highly implicated in cancer development and is found to be over expressed in cancer. Recent studies from our laboratory indicated that two isoforms of S6K (S6K1 and S6K2) are involved in controlling gene expression at the level of transcription, in which the mechanisms of this process is still unknown. By establishing a system of large scale nuclear fractionation from S6K expressing stable cell lines, we have shown that a number of nuclear proteins co-immunoprecipitate with nuclear S6K2 but not with S6K1, indicating that S6K2 has distinct nuclear roles from that of S6K1. We have also shown that these S6K2 associated nuclear proteins act as potential S6K2 phosphorylation substrates in an *in vitro* kinase assay.