

**P010** Identification of the *trans*-acting factors of the L- and N-myc IRES

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Translational control plays a vital role in regulating gene expression and allows a cell to respond to changing conditions without needing to synthesise new mRNA. There are two mechanisms by which translation can be initiated: i) cap-dependent scanning which requires a trimeric eIF4F complex to bind the 7 methyl G cap of the mRNA and scan along to the first AUG codon in good context, and ii) internal ribosome entry in which a ribosome is recruited directly onto a complex structural element formed in the 5'UTR of the mRNA, a process facilitated by IRES *trans*-acting factors (ITAFs).

Previous studies have identified internal ribosome entry segments (IRESs) in the 5' UTR of three members of the myc family of proto-oncogenes, c-myc, L-myc and N-myc. Several *trans*-acting factors required by the c-myc IRES have already been identified and include members of the poly(rC) binding protein family. However, little is currently known of the *trans*-acting factor requirements of the L- and N-myc IRESs.

Affinity matrix chromatography (using biotinylated IRES RNA linked to a streptavidin agarose), followed by peptide mass spectrometry analysis, has allowed us to identify several potential ITAFs of the L- and N-myc IRESs. These factors which include YB-1, PSF and a DEAD box helicase among others, are being further investigated to establish their effects on cap-independent translation.