

**P016** Direct stimulation of translation *in vivo*: a novel function of herpes simplex virus ICP27 protein

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HSV-1 ICP27, an essential protein with homologues throughout the Herpesviridae, regulates viral transcription, pre-mRNA splicing, polyadenylation and mRNA export. Cytoplasmic poly (A) binding protein (PABP), involved in translation initiation and mRNA stabilisation, was identified as a new partner of ICP27 by co-immunoprecipitation from infected cells and the yeast 2-hybrid assay. A functional role for ICP27 in stimulating translation was shown using a tethered function assay in *Xenopus* oocytes. When an MS2 coat protein-ICP27 fusion protein was tethered to the 3' UTR of a reporter mRNA containing the coat protein RNA binding site, it strongly stimulated translation whereas fusion proteins of ICP27 mutants that failed to interact with PABP did not. In a separate approach, CAT reporter vectors containing characterised ICP27 RNA binding sequences were transfected into BHK cells. CAT activities increased after infection with HSV wild type but remained low in cells infected with ICP27 mutant viruses. Cytoplasmic CAT mRNA levels were similar between samples with high and low CAT activities, indicating that the ICP27 stimulation acts at the level of translation. ICP27 joins a growing list of multifunctional regulatory proteins that control gene expression in both the nucleus and cytoplasm.