

**P043** Termination codon readthrough in murine leukaemia virus: a role for rpS15a?

**Sawsan Naphine and Ian Brierley**

*Division of Virology, Department of Pathology, University of Cambridge, Tennis Court Road, Cambridge CB2 1QP, U.K.*

Expression of the Moloney murine leukaemia virus (MuLV) Gag-Pol polyprotein requires programmed termination codon readthrough. This process requires an RNA pseudoknot (PK) structure located precisely eight nucleotides downstream of the gag UAG codon. The mechanism by which the PK simulates readthrough is yet to be elucidated. However, certain primary sequence requirements in the MuLV PK and their conservation in all gammaretroviruses suggests a requirement for a molecular interaction.

Previously, we used the yeast three-hybrid system to demonstrate a specific interaction between human rpS15a and the MuLV PK. Using genetically-modified yeast strains, we also obtained evidence that this interaction may have biological relevance to the readthrough process. Here we further characterise the S15a-pseudoknot interaction. Bacterially expressed S15a protein was found to bind specifically to the pseudoknot in band-shift assays and exogenous S15a caused a modest, but reproducible reduction in readthrough efficiency in *in vitro* assays. We have also shown that antibodies to S15a can specifically inhibit the readthrough process in *in vitro* translation assays. The results of these experiments will be discussed in the context of how S15a could influence MuLV readthrough.