

# Poster Presentations

**[MS9-P03] The combination of U1A protein and a G•U pair facilitates RNA-protein crystallization and structure determination.**

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Use of the U1A crystallization module (UCM) has resulted in the determination of 11 new RNA structures (48 PDB depositions) in the past 15 years. The UCM can expedite successful RNA crystallization, and facilitate *de novo* phase determination.

To date this approach has not been extended to the crystallization of RNA-protein complexes. We have determined seven new crystal structures using this approach. We show that the U1A-RNA complex has a very strong intrinsic propensity to generate a crystal lattice, but further sections of RNA attached may be disordered, and thus poorly resolved in the resulting structure. We present three such structures in which the electron density of the UCM is clear, while that of the target macromolecule is indistinct. However, we find that the inclusion of a G•U pair within the duplex RNA provides additional torsional flexibility that the target RNA is well ordered within the lattice. By this means we have obtained three clear electron density maps for the molecules of interest.

Taken together our data show that the combination of the UCM and G•U pair provide a powerful strategy in the crystallization and structural analysis of RNA and RNA-protein complexes.

**Keywords:** RNA-protein crystallization; G•U pair; structure determination