

Structure and Function of a snoRNP Maturation Complex

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The *Saccharomyces cerevisiae* (Sc) R2TP complex affords an Hsp90-mediated scaffolding activity to structurally diverse small ribonucleoprotein particles (snoRNPs). The current lack of structural information on the R2TP complex, however, prevents a mechanistic understanding of this biological process. We have obtained a structural model of the ScR2TP complex made up of two AAA+ ATPases, **Rvb1/2p**, and two Hsp90 co-chaperone proteins, **Tah1p** and **Pih1p**, by a combination of analytical ultracentrifugation, chemical cross-linking, hydrogen-deuterium exchange, and electron cryomicroscopy methods. We find that the Pih1p-Tah1p heterodimer caps the Rvb1/2p heterohexameric ring through its association with the flexible insertion domain of Rvb1/2p and the Pih1p-Tah1p cap is dissociable upon nucleotide binding to Rvb1/2p. Therefore, association of snoRNP intermediates with Pih1p-Tah1p, which is demonstrated for Nop58p here, provides a structural basis for nucleotide-driven binding and release.