SPLICEOSOMAL PROTEOMICS REVEALED SEVERAL NEW CANDIDATES SMALL NUCLEAR RNP PROTEINS IN *Trypanosoma brucei*

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In trypanosomatid parasites, spliced leader (SL) *trans* splicing and polyadenylation resolve individual mRNAs from polycistronic precursor RNA. Since SL *trans* splicing does not occur in mammalian and insect hosts of trypanosomatids and since this group of organisms has diverged very early in evolution from the main eukaryotic lineage, we hypothesize that the trypanosomatid spliceosome harbors unique proteins or highly divergent orthologues of known proteins which are essential for the parasites. A commonality of the spliceosomal small nuclear ribonucleoprotein particles (snRNPs) U1, U2, U4/U6 and U5 as well as the SL RNP, is a complex of seven proteins called Sm or common proteins. By fusing the PTP tag C-terminally to smD1 of *Trypanosoma brucei,* we were able to tandem affinity purify spliceosomal snRNPs. 41 proteins were identified by liquid chromatography-tandem mass spectrometry to co-purify with smD1-PTP. These included all Sm proteins, the known snRNP-specific proteins and 16 proteins which have been annotated as *conserved hypothetical*. For three of the latter proteins, we are in the process of identifying their RNA binding partners and of analyzing their functional relevance in the *trans* splicing process.

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