

RNA-Protein complexes involved in spliced leader *trans*-splicing in Nematodes could serve as a target for novel anthelmintic drugs.

Worldwide more than 2 billion people are infected with parasitic nematodes and there are a limited number of drugs available to treat these debilitating diseases. This is becoming a pressing issue since many of the drugs available are losing their efficacy due to the development of resistance in the target nematode populations. There is thus a need to develop new drugs to treat nematode infections. In addition, resistance is always likely to be an issue until the nematode parasites are completely eradicated (an unlikely event for most species), so any new drugs should be designed to limit the development of this resistance. This is most easily achieved by targeting an essential biological process, rather than a specific molecule. In addition, this process should be essential for the viability and/or reproduction of all parasitic nematodes, and not present in the human hosts.

Spliced leader (SL) *trans*-splicing, an essential process in nematodes that is absent in the vertebrate host, has been identified as a possible target for new anthelmintics. The precise molecular mechanism of SL *trans*-splicing as well as all its molecular components is not yet understood. To further characterise the process we have developed an *in vivo*, GFP-based reporter assay that is able to monitor SL *trans*-splicing *in vivo* in *Caenorhabditis elegans*. Using this assay we were able to demonstrate that SNA-1, SNA-2 and SUT-1, proteins known to associate with SL RNA and related SmY RNAs, are required for efficient SL *trans*-splicing. It has been shown by others that SL RNA is part of an snRNP, and associates with Sm proteins. We were able to demonstrate that pICln, SMN and Gemin5 involved in snRNP assembly contribute to SL *trans*-splicing. We believe that a compound that can act as antagonist to two or more of these SL *trans*-splicing components will effectively shut down the process and such compound may be a good anthelmintic candidate.