**STATAWAARS: a new promoter DNA motif associated with pharyngeal gland cell expression in *Bursaphelenchus xylophilus*.**

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The migratory endoparasitic nematode, Bursaphelenchus xylophilus (pinewood nematode) is a quarantine pathogen that infects some species of pine trees (Pinus spp.) and has a huge negative economic impact on the wood industry and natural forest resources. Using an approach pioneered in cyst nematodes, we have analysed the promoter regions of a small panel of previously validated pharyngeal gland cell effectors from B. xylophilus to identify an associated putative regulatory promoter motif: STATAWAARS. The presence of STATAWAARS in the promoter region of an uncharacterized gene is a predictor that the corresponding gene encodes a putatively secreted protein, consistent with effector function. Additionally, we were able to experimentally validate that a subset of STATAWAARS-containing genes were specifically expressed in the pharyngeal gland cells. Finally, we independently validate the association of STATAWAARS with tissue representation by directly sequencing the mRNA of pharyngeal gland cells. We combine a serious of criteria, including STATAWAARS predictions and abundance in the gland cell transcriptome, to generate a comprehensive effector repertoire for B. xylophilus. The genes highlighted by this approach include many previously described effectors and a series of novel effectors genes. Our data, coupled with those from previous studies, suggested that lineage-specific promoter motif are a theme of effector regulation in the phylum Nematoda.

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