

**150. MOLECULAR ANALYSIS OF A SMALL-PEPTIDE GENE FAMILY IN THE POTATO CYST NEMATODE
*GLOBODERA ROSTOCHIENSIS***

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Potato cyst nematodes (*Globodera* spp.) are plant parasitic nematodes that induce highly sophisticated feeding cells inside the plant root. These so-called syncytia are initiated by partly dissolving the cell walls between neighbouring cells. This finally results in a large cell, which can consist of over 200 initial cells. During syncytium formation, the organelle content increases, and the nuclei enlarge. This is due to a process called endoreduplication; repeated cycles of DNA-replication without subsequent nuclear and cellular division. Endoreduplication is expected to regulate gene expression and to determine cell size. Factors secreted by the three oesophageal glands of the nematode are thought to be involved in syncytium induction and maintenance. A family of genes encoding for small proteins, named the dgl1-homologues, are all specifically expressed in the dorsal oesophageal gland of pre-parasitic juveniles of the potato cyst nematode. The family consists of at least six members, and their small size suggests that they could have a role in the cell cycle changes occurring in syncytium formation. This because a fraction of small proteins in the secretions of *G. rostochiensis* J2-s has previously shown to co-stimulate cell proliferation of tobacco protoplasts and human blood cells. Currently, the functional role of dgl-1 gene family is investigated using promoter-reporter gene fusion constructs.