

1: [Parasitol Res.](#) 2006 Apr;98(5):414-24. Epub 2005 Dec 28.

[Related Articles](#), [Links](#)



**Detection of putative secreted proteins in the plant-parasitic nematode *Heterodera schachtii*.**

[Vanholme B](#), [Mitreva M](#), [Van Criekinge W](#), [Logghe M](#), [Bird D](#), [McCarter JP](#), [Gheysen G](#).

Molecular Biotechnology Department, Faculty of Bioscience Engineering, Ghent University, Coupure links 653, 9000, Ghent, Belgium.

The beet cyst nematode *Heterodera schachtii* is an important pathogen worldwide, but its molecular characterization has been limited to studying individual genes of interest. We undertook a high-throughput genomic approach and drastically increased the number of available sequences for this parasite. A total of 2,662 expressed sequence tags were grouped into 1,212 clusters representing a nonredundant catalog of *H. schachtii* genes. Implementing a bioinformatic workflow, we identified 50 sequences coding for candidate secreted proteins. All of these contain a putative signal peptide required for entry into the secretory pathway and lack any transmembrane domain. Included are previously postulated cell-wall-degrading enzymes and other parasitism-related genes. Moreover, we provide the first report of an arabinogalactan endo-1,4-beta-galactosidase enzyme (EC 3.2.1.89) in animals. As sequence data increase at a rapid rate, developing high-throughput genomic screening is a necessity. The in silico approach described here is an effective way to identify putative secreted proteins and prioritize candidates for further studies.

Publication Types:

- [Research Support, Non-U.S. Gov't](#)
- [Research Support, U.S. Gov't, Non-P.H.S.](#)

PMID: 16380840 [PubMed - indexed for MEDLINE]