

PARASITOLOGY

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Comparative and functional genomics analysis of *T. gondii* and *N. Caninum*Eman Alshehri¹, Christiana Hertz¹ and Neil Hall²¹University of Liverpool, UK²The Earlham Institute, UK

Recent comparative analyses of *Toxoplasma gondii* and the closely related *Neospora caninum* have identified genes specific to each of the species (Reid *et al.*, 2012). These species-specific genes are largely encoded proteins of unknown function. However, in other parasites such species-specific genes proteins can be associated with host interaction and therefore we hypothesise that these genes are play an important role in the parasite's ability to infect a wide range of vertebrate hosts and to avoid the host immune response. We re-examined the comparison between *T. gondii* and *N. caninum* and identified 300 species-specific genes in *T. gondii* and 60 species-specific genes in *N. caninum*, extending on previously published data. Most of our findings were hypothetical proteins, ribosomal and dense granule proteins GRA11 that may play an important role in wide range host in *T. gondii*. However, in *N. caninum*, we identified additional members of the surface- antigen gene family (SRSs). SRSs proteins are thought to mediate attachment to host cells and activate host immunity to regulate the parasites virulence. We postulate that the SRS genes may mediate the more limited host range of *N. caninum*.

Biography

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