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2nd International Conference on

PARASITOLOGY

August 01-03, 2016 Manchester, UK

Toxoplasma gondii cause a periodic variation on mice mesocephalous dopamine system through phosphorylation of tyrosine hydroxylase

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T bxoplasma gondii is an obligated intracellular parasites which impact almost one third of world's population and this infectious T trend has been increased since more and more families keep pet especially feline, the definitive host of *T. gondii*; this high viability parasite has ability to infect almost all karyocyte. Immunocompetent human infected with *T. gondii* often shows changes in temper, memory and character, probably for the reason that the tissue cysts existed in brain exerts some influence on nervous system such as regulation of the level of dopamine, 5-HT and serotonin etc. Our research established a time gradient infection model using heterozygous female/male KM mice (*Mus musculus*) inoculated with *T. gondii* RH strain, following by detection of gene expression of tyrosine hydroxylase (TH, the rate limiting enzyme of biosynthesis of dopamine) and extracellular signal regulated kinase (ERK, phosphorylate the 31 Ser of TH). The results confirmed the existence of the effects that *T. gondii* imposed on mice mesocephalous dopamine system, meanwhile, the gene expression curve of TH and ERK shows a fluctuant variation. Subsequently protein measurement of those enzyme supported aforementioned results. Statistic analysis also present a significant difference between the expression of female TH gene and male TH gene after infection, which suggest that there might be a different responding mechanism to *T. gondii* infection between female and male mice. These changes in brain along with other signal path might cause behavior modification eventually.

Biography

Qin Han Xiao was graduated from Sichuan University in 2014 and is currently a Postgraduate student at the Department of Parasitology, College of Basic and Forensic Medicine, Sichuanz University and his main research contents is *Toxoplasma gondii* infection and behavior modification.

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