Toxoplasma gondii induces robust humoral immune response against cyst wall antigens in chronically infected animals and humans

A study conducted at DBT’s National Institute of Animal Biotechnology (DBT-NIAB), Hyderabad, showed that antibodies are generated in infected host against bradyzoite and associated cyst wall antigens, particularly CST1. The study provides strong evidence for the presence of humoral immune response towards cyst wall antigens in naturally acquired T. gondii infections. CST1 has emerged as a key immunomodulatory antigen which may have direct implications for clinical immunodiagnostics. However, it is not known whether the presence of antibodies against bradyzoite antigens has a protective effect in T. gondii infected individuals. It needs to be investigated further.

This study broadens our understanding of humoral dynamics and adds to the repertoire of immunomodulatory antigens of T. gondii. Moreover, it provides an experimental basis for defining and designing diagnostic and therapeutic approaches for its clinical management. The work is recently published in Microbial Pathogenesis journal on 21st November, 2020.

Toxoplasmosis, caused by Toxoplasma gondii, is an intracellular protozoan infection highly prevalent in warm-blooded vertebrate hosts. The disease causes abortions, stillbirth and neonatal mortality, especially in sheep, goats and swine leading to significant economic losses and also in humans. Infection not only results in significant reproductive losses in animals, but has public
health implications since consumption of infected meat can facilitate zoonotic transmission to man.


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