

Detection of immunogenic parasite and host-specific proteins in the sera of active and chronic individuals infected with *Toxoplasma gondii*

Type:

Article

Abstract:

Toxoplasma gondii infection in pregnant women may result in abortion and foetal abnormalities, and may be life-threatening in immunocompromised hosts. To identify the potential infection markers of this disease, 2-DE and Western blot methods were employed to study the parasite circulating antigens and host-specific proteins in the sera of *T. gondii*-infected individuals. The comparisons were made between serum protein profiles of infected (n = 31) and normal (n = 10) subjects. Antigenic proteins were identified by immunoblotting using pooled sera and monoclonal anti-human IgM-HRP. Selected protein spots were characterised using mass spectrometry. Prominent differences were observed when serum samples of *T. gondii*-infected individuals and normal controls were compared. A significant up-regulation of host-specific proteins, alpha(2)-HS glycoprotein and alpha(1)-B glycoprotein, was also observed in the silver-stained gels of both active and chronic infections. However, only alpha(2)-HS glycoprotein and alpha(1)-B glycoprotein in the active infection showed immunoreactivity in Western blots. In addition, three spots of *T. gondii* proteins were detected, namely (i) hypothetical protein chrXII: 3984434-3 TGME 49, (ii) dual specificity protein phosphatase, catalytic domain TGME 49 and (iii) NADPH-cytochrome p450 reductase TGME 49. Thus, 2-DE approach followed by Western blotting has enabled the identification of five potential infection markers for the diagnosis of toxoplasmosis: three are parasite-specific proteins and two are host-specific proteins.

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