

**Telomerase** is a reverse transcriptase enzyme that carries its own RNA molecule (e.g., with the sequence 3'-CCCAAUCCC-5' in *Trypanosoma brucei*) which is used as a template when it elongates telomeres. (Beyond unicellular organisms) Telomerase is active in normal stem cells and most cancer cells, but is normally absent from, or at very low levels in, most somatic cells.

Inoculation of *Trypanosoma brucei brucei* resulted in early interferon (IFN)-gamma production, elevated corticosterone and prostaglandin E(2) (PGE(2)) levels and increased splenocyte proliferation, as measured by enzyme-linked immunospot assay, radioimmunoassay and thymidine incorporation assay, respectively. Splenic denervation suppressed IFN-gamma, corticosterone and PGE(2) production, enhanced splenocyte proliferation, and significantly reduced parasitemia and prolonged rat survival.

**CONCLUSIONS:** Our data show substantial effects of the nervous system on early immune responses that may influence the outcome of this disease. These effects were not dependent on cytokine inhibitory mediators such as prostaglandins or stress hormones. More investigations are required to understand the evident neural control over the immune system during infectious challenges, which may assist in novel therapeutic approaches <sup>1)</sup>.

<sup>1)</sup>

Liu Y, Mustafa M, Li HL, Nuortio L, Mustafa A, Bakhiet M. Modulation of early immune responses and suppression of *Trypanosoma brucei brucei* infections by surgical denervation of the spleen. *Neuroimmunomodulation*. 2000;8(1):31-8. PubMed PMID: 10859486.

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Last update: **2024/06/07 02:57**

