T1/ST2 deficient mice display protection against Leishmania infantum experimental infection.

Khalid KE¹, Nascimento MSL², Sacramento LA², Costa DL², Lima-Júnior DS², Carregaro V², da Silva JS².

Abstract
T1/ST2 is a surface marker selectively expressed on type 2 helper (T₄₂) effector cells. As Leishmania infection in susceptible BALB/c mice have ascribed to a polarized T₄₂ response, this study aim to investigate the T1/ST2 (the receptor for IL-33), as a typical T₄₂ marker in the postulation that a shift towards a beneficial T₄₁ response would occur in the absence of ST2. For this, ST2 knockout (ST2⁻⁻) and WT BALB/c mice were experimentally infected in the retro-orbital sinus with L. infantum. We showed that ST2⁻⁻ animals displayed better control of parasite burden in both spleen and liver tissues at different time points of chronic phases, and reduced splenomegaly and hepatomegaly compared with the wild-type (WT) mice. This was associated with increased in the IFN-γ levels and expression by CD4⁺ and CD8⁺ lymphocytes. The inflammatory response encompasses transaminases (AST and ALT) releases and NO productions were remarkably lower in ST2⁻⁻ mice compared with WT. These data suggest that, ST2⁻⁻) exert protection against L. infantum infection and probably shift the immune response toward T₄₁ induction.

Copyright © 2017 Elsevier B.V. All rights reserved.

KEYWORDS: BALB/c; IL-33; Leishmania infantum; ST2; Visceral leishmania

PMID: 28427965 DOI: 10.1016/j.actatropica.2017.04.011