

## IL-12 Receptor Deficiency

IL12 receptor deficiency is a congenital T-cell immunodeficiency which results in a decreased Th1 response. IL-12 is essential for the differentiation of non-specific T-cells into a Th1 cellular mediated response. Without this activating molecule, the Th1 response is insufficient. The patient is prone to disseminated mycobacterial infections including tuberculosis.



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### Pathophysiology

#### IL-12 Secreted by Macrophages

[IL12 Key Held by Mac-man](#)

IL-12 is responsible for the differentiation of T-cells into Th1 cells and is secreted by macrophages in the immune response.

#### Decreased Th1 Response

[Down-arrow trapped Tennis-balls with \(1\) Wands](#)

IL-12 is responsible for the differentiation of T-cells into Th1 cells. This is an essential piece to the cell mediated response.

#### Decreased IFN Gamma

[Down-arrow Grandma with IFN-ray-gun](#)

IFN-gamma is a key initiator for the Th1 cellular response, which is secreted after activation by IL-12, and mounts a strong response. Due to the limitations with IL-12, the IFN-gamma is in short supply and the immune response is decreased.

### Signs and Symptoms

#### Mycobacterial Infections

[Bacteria with Mics](#)

The Th1 response is responsible for cellular immunity, which is particularly essential for the immune response against mycobacterial pathogens.

#### Salmonella

[Salmon](#)

Host defense against salmonella also depends heavily upon the functional integrity of mononuclear phagocytes and their interaction with T-cells.