

## DC-SIGN transgenic mice (HHMI)

**These transgenic mice expressing human DC-SIGN show reduced tissue damage and prolonged survival during mycobacterial infection, suggesting a protective role for DC-SIGN in limiting tuberculosis-induced pathology.**

To investigate the role of human DC-SIGN (Dendritic cell (DC)-specific intercellular adhesion molecule-3 grabbing nonintegrin (DC-SIGN: CD209)) in mycobacterial infection, researchers generated transgenic mice (hSIGN) expressing human DC-SIGN under the murine CD11c promoter. These mice, upon mycobacterial infection, exhibited significantly lower production of IL-12p40 by dendritic cells and no significant change in IL-10 levels compared to control mice. Following high-dose aerosol infection with *M. tuberculosis* H37Rv, hSIGN mice demonstrated a substantial accumulation of DC-SIGN+ cells in the lungs, reduced tissue damage, and extended survival. The findings suggest that human DC-SIGN may function as a protective pathogen receptor, mitigating the pathology induced by tuberculosis rather than facilitating immune evasion by the bacteria.

### References

1. Schaefer et al. , <https://pubmed.ncbi.nlm.nih.gov/18453604/>

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