Dokumenttyp: journal article

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Titel des Beitrags: Essential role of DAP12 signaling in macrophage programming into a fusion-competent state.

Abstract: Multinucleated giant cells, formed by fusion of macrophages, are a hallmark of granulomatous inflammation. With a genetic approach, we show that signaling through the adaptor protein DAP12 (DNAX activating protein of 12 kD), its associated receptor triggering receptor expressed by myeloid cells 2 (TREM-2), and the downstream protein tyrosine kinase Syk is required for the cytokine-induced formation of giant cells and that overexpression of DAP12 potentiates macrophage fusion. We also present evidence that DAP12 is a general macrophage fusion regulator and is involved in modulating the expression of several macrophage-associated genes, including those encoding known mediators of macrophage fusion, such as DC-STAMP and Cadherin 1. Thus, DAP12 is involved in programming of macrophages through the regulation of gene and protein expression to induce a fusion-competent state.

Zeitschriftentitel / Abkürzung: Sci Signal

Jahr: 2008

Band: 1

Heft / Issue: 43

Seiten: ra11

Sprache: eng