

POSTER PRESENTATION

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# SOCS2 expression in bone marrow derived dendritic cells is a positive regulator of T cell activation

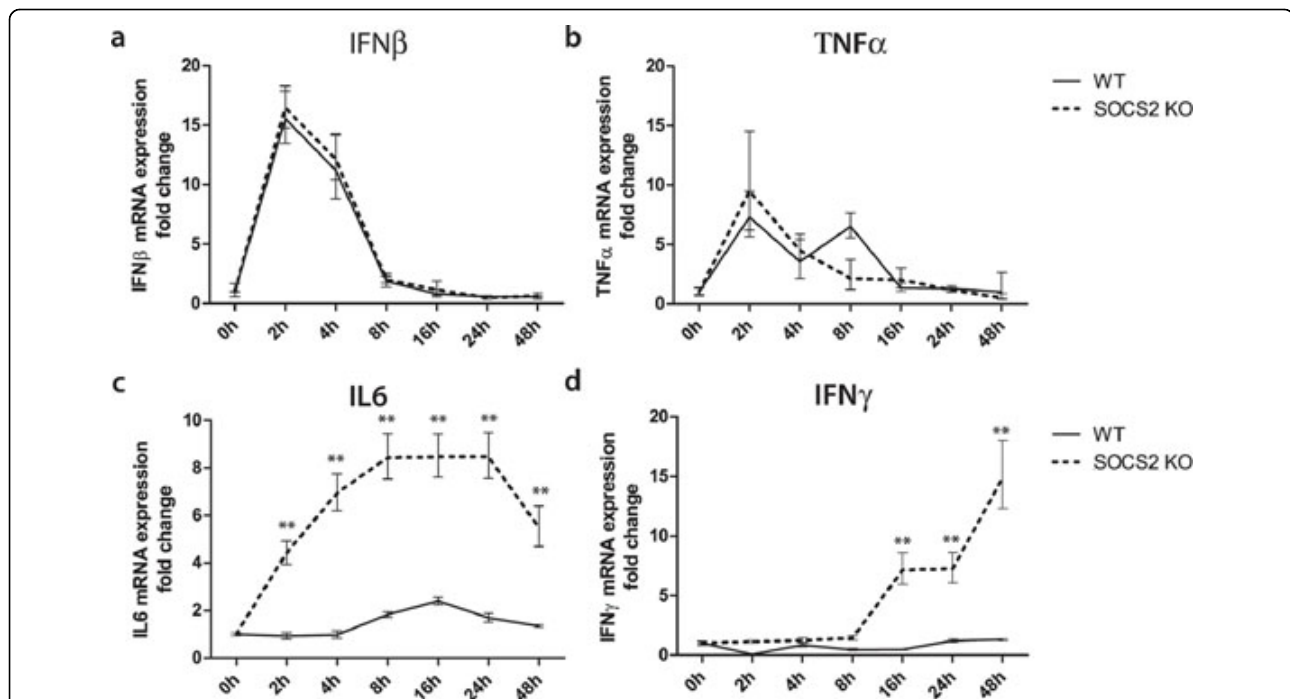
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## Background

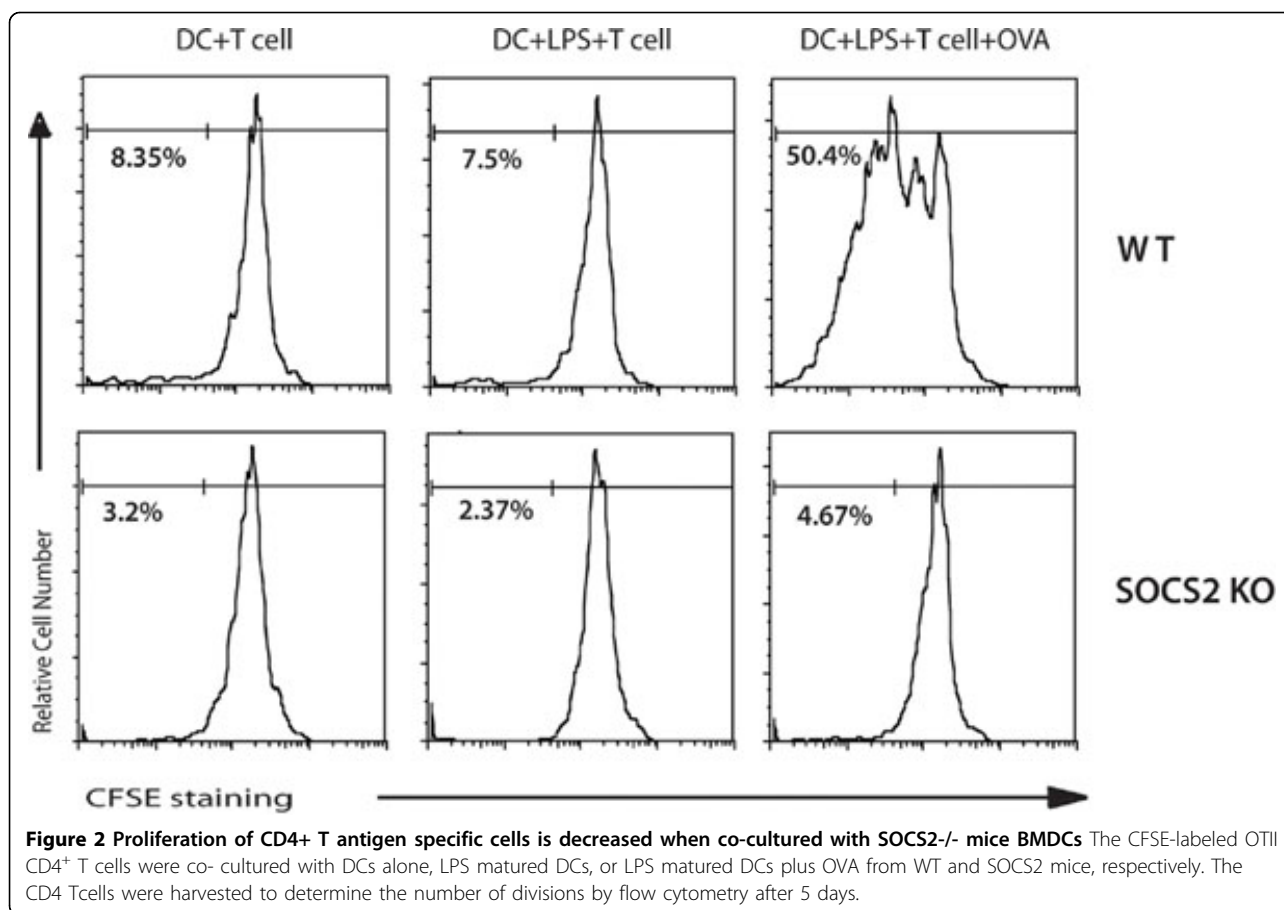
After a completed T cell response the activation of DCs needs to be terminated to avoid harmful inflammation or autoimmune disease. Besides the negative regulation of

JAK/STAT signaling pathway on growth hormone and prolactin for suppressor of cytokine signaling (SOCS) 2 [1], murine SOCS2<sup>-/-</sup> DCs are recently found to be hyper-responsive to microbial stimuli and refractory to the inhi-



**Figure 1** The effect of SOCS2 KO, on pro-inflammatory cytokine release in LPS induced BMDCs. BMDCs from WT and SOCS2 mice were stimulated with LPS (100 ng/ml) till 48 hours. mRNA expression of indicated cytokines was measured at the indicated time points.

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bitory actions of the anti-inflammatory mediator LXA4 [2]. Thus, we investigate the role of SOCS2 in DC antigen presentation.

### Materials and methods

**Mice:** SOCS2 deficient mice and transgenic OT-II mice.

**Mouse bone marrow-derived dendritic cells (BMDCs):**

Mouse bone marrow cells were incubated 7 days with 20 ng/ml GM-CSF and 20 ng/ml IL-4 to create mouse BMDCs. **Quantitative RT-PCR:** Real-time PCR was used to measure pro-inflammatory cytokines gene expression.

**CFSE proliferation assay:** BMDCs were incubated with 100 ng/ml LPS and 50 ng/ml OVA323-339 peptide. The next day CD90<sup>+</sup> splenocytes from OT-II mice were labeled with CFSE and added to the BMDC culture for 5 days. Then cells were stained for CD4 and read by FACS.

### Results

*Increased production of pro-inflammatory cytokines by SOCS2<sup>-/-</sup> BMDCs in response to LPS (see Figure 1)*

*SOCS2<sup>-/-</sup> BMDCs have a decreased capacity to activate naïve CD4<sup>+</sup> T cells (see Figure 2)*

### Conclusions

SOCS2 is complex regulator of DC effector functionality, with an overall positive regulatory function on T cell activation.

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### References

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