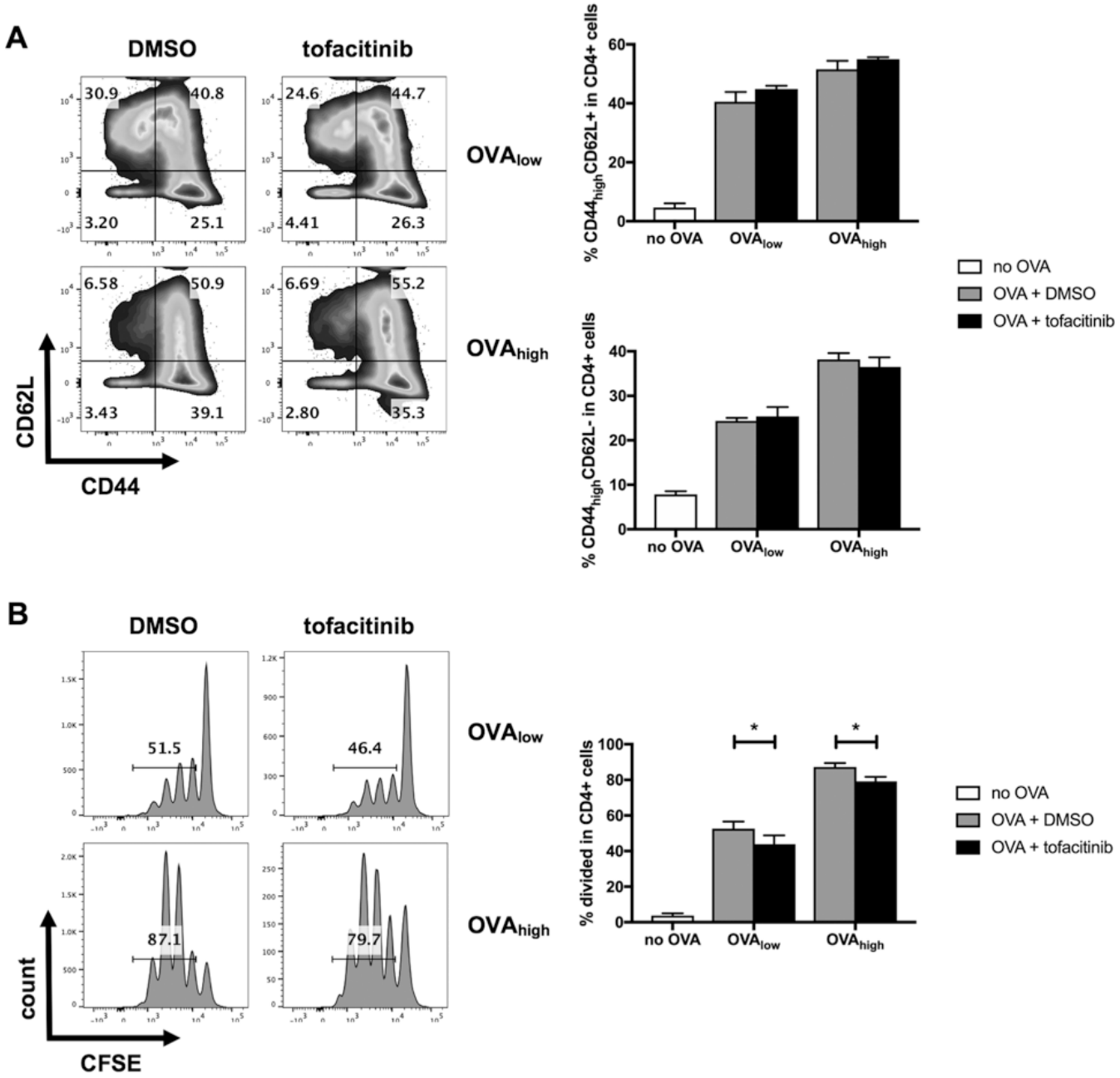
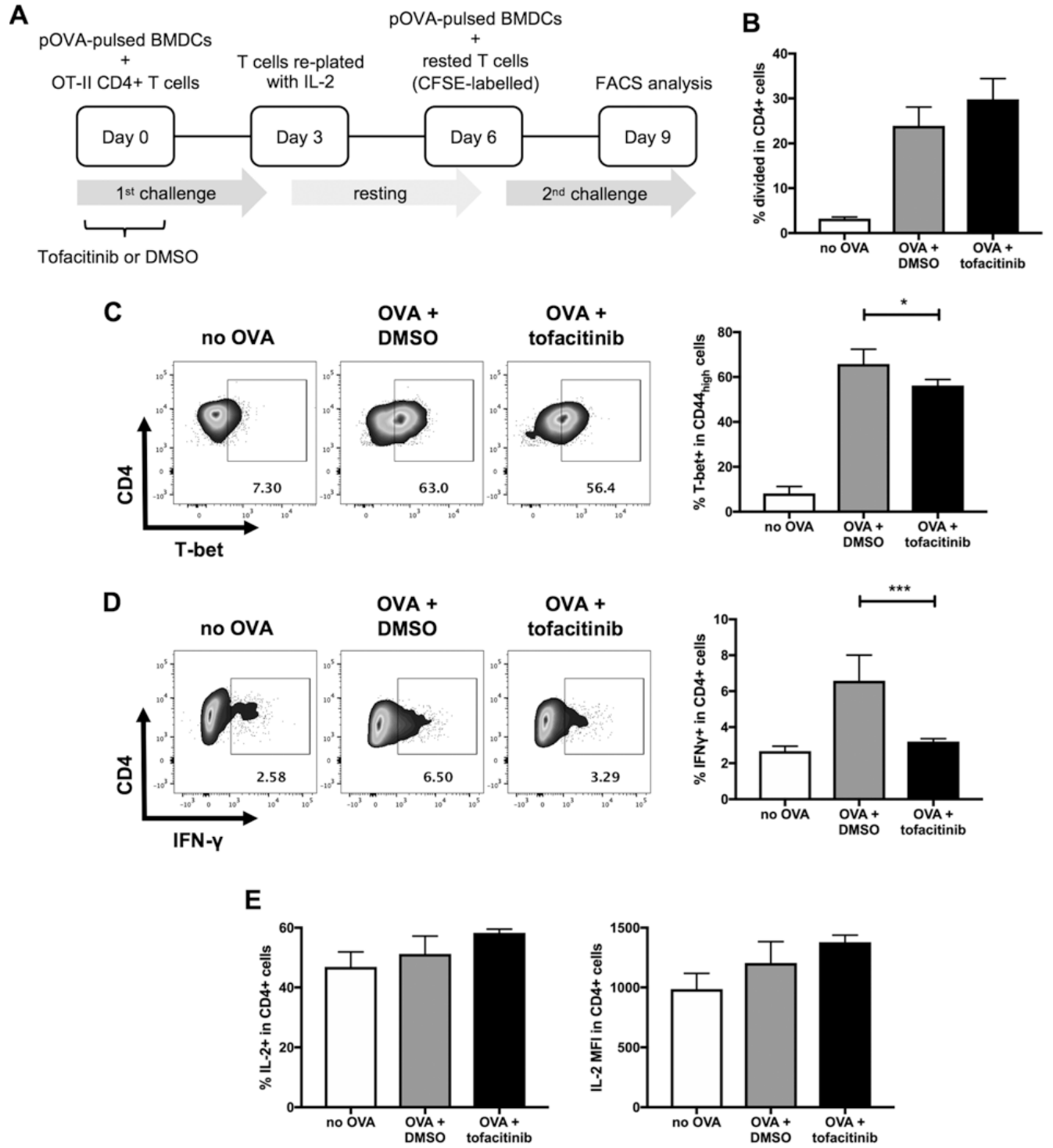



**Supplementary Fig. S1.** Tofacitinib during priming *in vitro* attenuates CD4+ T cell proliferation. CD4+ T cells from OT-II mice were cultured with BMDCs pulsed with suboptimal ($OVA_{low}$) or optimal ($OVA_{high}$) concentrations of pOVA in the presence of tofacitinib or DMSO for 24 or 72h and analysed by flow cytometry.

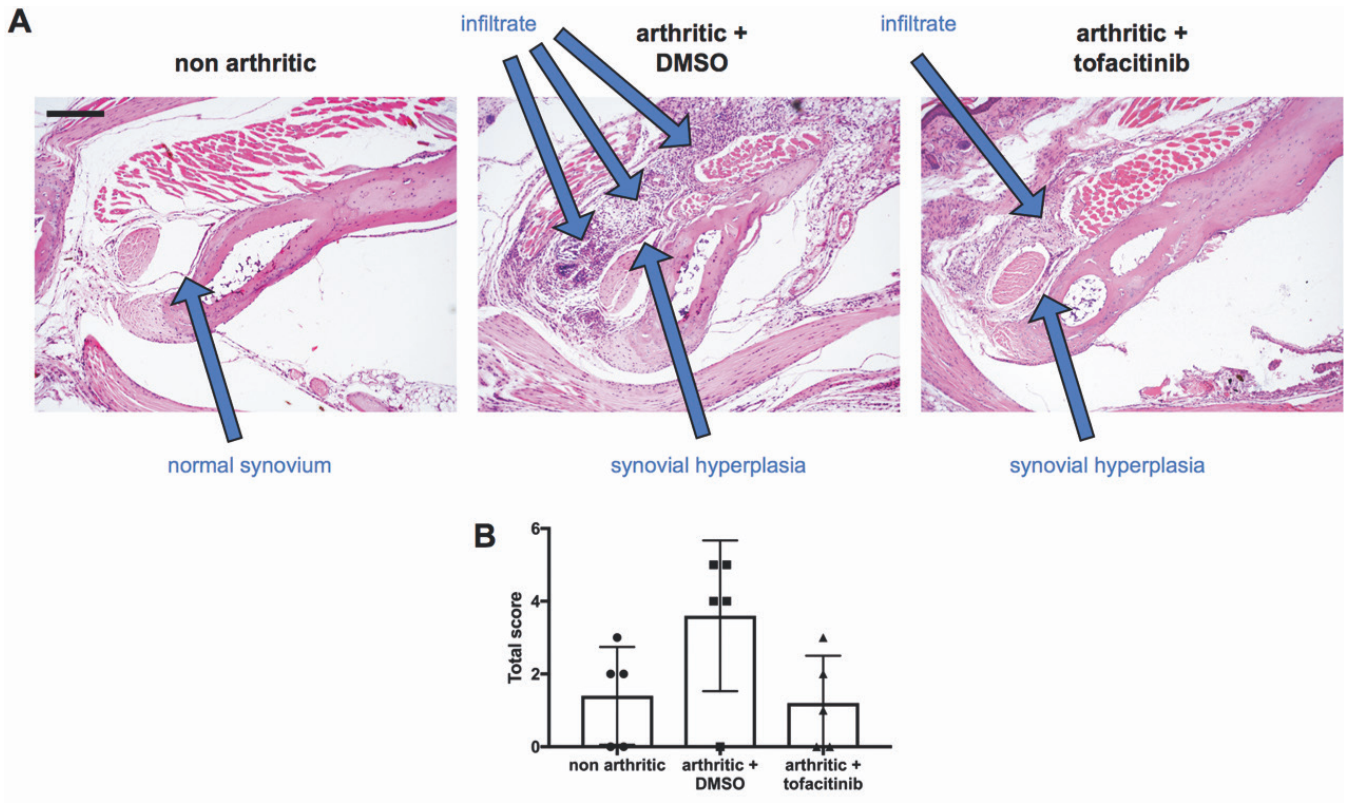
**A**: Representative dot plots of CD44 and CD62L expression on CD4+ cells and quantification of the proportion of $CD44_{high}CD62L+$ or $CD44_{high}CD62L-$ cells.

**B**: Representative histograms of CFSE fluorescence intensity and quantification of the proportion of cells that have divided. *$p \leq 0.05$.

BMDCs: bone marrow-derived dendritic cells; pOVA: ovalbumin peptide; DMSO: dimethyl sulfoxide; CFSE: carboxyfluorescein succinimidyl ester.




**Supplementary Fig. S2.** Impaired Th1 attributes following CD4+ T cell exposure to tofacitinib during priming persists upon re-activation.
**A**: OT-II CD4+ T cells were cultured with BMDCs pulsed with pOVA for 72h, rested with IL-2 for further 72h and rechallenged with fresh pOVA-pulsed BMDCs for final 72h.
**B**: Quantification of the proportion of cells that have divided.
**C**: Representative dot plots of T-bet or **(D)** IFN-γ expression and quantification of the proportion of T-bet+ or IFN-γ+ cells.
**E**: Representative dot plots of IL-2 intracellular expression and quantification of the proportion of IL-2+ cells and IL-2 MFI.
*$p \leq 0.05$, **$\leq 0.01$, ***$\leq 0.001$.
BMDCs: bone marrow-derived dendritic cells; pOVA: ovalbumin peptide; MFI: median fluorescence intensity.




**Supplementary Fig. S3.** Effects of tofacitinib on joint histopathology in experimental arthritis.
**A**: Representative haematoxylin and eosin-stained sections prepared from the joints of recipient mice. Joints from non-arthritic mice exhibited no apparent local inflammatory reaction. Arthritic mice treated with DMSO had the greatest synovial cell proliferation and inflammatory cell joint infiltration. Although the proliferative response of synovial cells was also noted in arthritic mice treated with tofacitinib, sections from these animals had less evident inflammatory cell infiltration. The scale bar represents 250 μm.
**B**: Quantification of total histopathology score of joint pathology (joint infiltrate and synovial hyperplasia).
*p*=non-significant for all comparisons. DMSO: dimethyl sulfoxide.