

## Supplementary information

### **Differential Expansion of T Peripheral Helper Cells in early Rheumatoid Arthritis and Osteoarthritis Synovium**

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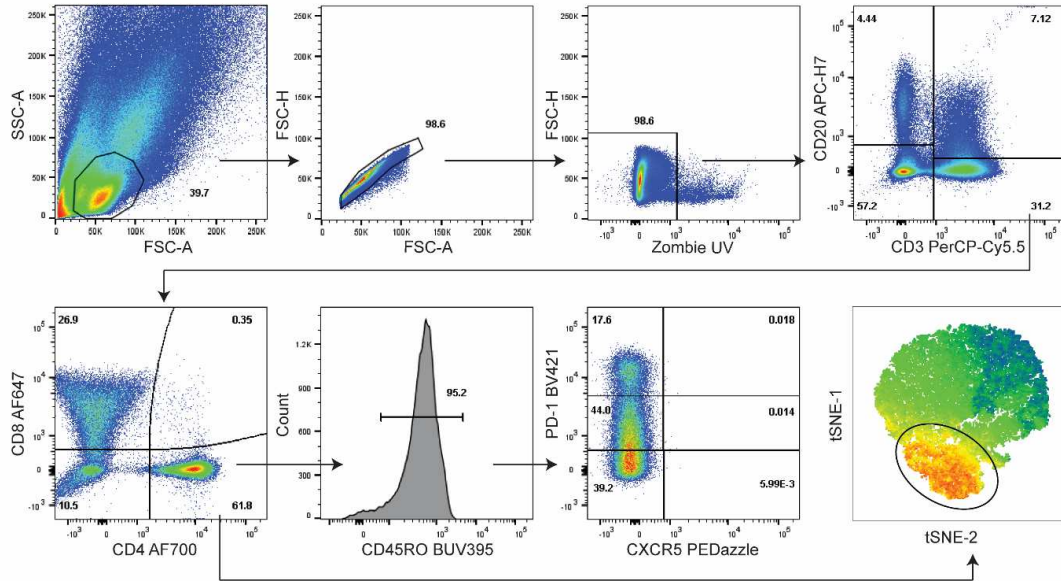
#### Contents of Supplementary Information:

1. Supplementary Figure 1
2. Supplementary Figure 2

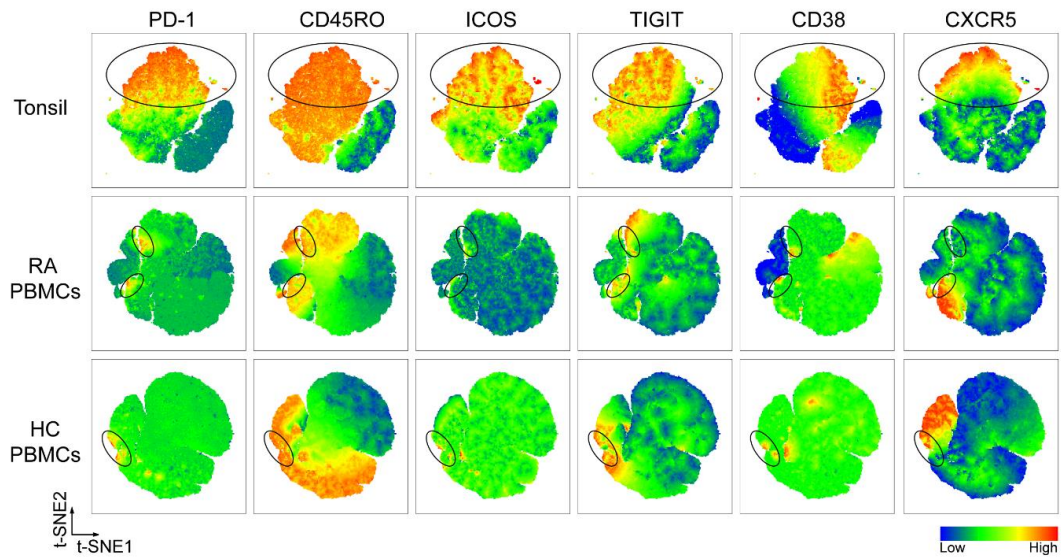
## Figure legends

**Supplementary Figure 1. Detection of PD-1 and CXCR5 expressing cells in disaggregated ST biopsy samples by flow cytometry.** Gating strategy to identify PD-1 and CXCR5 expressing memory CD4<sup>+</sup> T cells by flow cytometry and gating of CD4<sup>+</sup> T cells prior to t-SNE analysis. Cells were gated for lymphocytes, singlets, live cells, CD3<sup>+</sup> CD20<sup>-</sup> cells and CD4<sup>+</sup> CD8<sup>-</sup> cells prior to t-SNE or further gating for CD45RO<sup>+</sup> memory T cells and detection of PD-1 and CXCR5 expressing populations via 2-D dot plots.

**Supplementary Figure 2. Differential gene expression of CD4<sup>+</sup> T cells identified by viSNE analysis.** (A) viSNE plots of flow cytometry data from tonsil control and RA synovial tissue CD4<sup>+</sup> T cells. (B) viSNE plots of flow cytometry data from RA and, (C) healthy control peripheral blood CD4<sup>+</sup> T cells. Colour indicates cell expression levels of labelled marker. Ring indicates PD-1<sup>hi</sup> cells.



Supplementary Figure 1.



Supplementary figure 2.