\subsection{Mass cytometry assay}

Mass cytometry assay was performed by Dr Nicole Yager in collaboration with UCB following their in-house protocol. Briefly, whole blood and SF from three PsA patients were fixed for 5 min with 1.6\% PFA within 30 min of venipuncture/aspiration, respectively. These samples are defined as time 0h. In addition, whole blood and SF were incubated at 37{$^\circ$}C for 6 h in the presence of the protein transport inhibitors 1X BD GolgiStop (monensin) and 1X BD GolgiPlug (brefeldin A). After 5 h 45 mins the samples were treated with cisplatin to facilitate discrimination of dead cells, and then fixed as previously described. These samples are defined as time 6h. After appropriate treatment, red blood cells were lysed and cell suspensions were washed with PBS and stained with Abs against the cell surface markers of the intra-cellular staining (ICS) panel. The samples were further permeabilised and stained with antibodies against intracellular targets (Table \ref{tab:CyTOF}). Treatment with monensin and brefeldin A prevented the release of cytokines from the cells and allowed measuring the intrinsic cytokine production rate in basal conditions.

\subsection{Mass cytometry data analysis}

Mass cytometry analysis was performed by Dr Nicole Yager. Mean expression of cytokine release was calculated following unsupervised clustering analysis guided by a workflow similar to Nowicka \textit{et al.} with minor modifications \parencite{Nowicka 2017}. For each population of cells, cytokine production in SF and PB was calculated as the difference in the mean signal intensity between the 0h and 6h aliquots. Mean was chosen due to the extremely small changes observed when calculating median intensities. The percentage of cytokine release was calculated following manual gating for the CD14$^+$ population based on surface marker expression. The percentage of TNF-$\alpha$ positive staining cells were calculated between the 0h and the 6h samples within each tissue.

\*Nowicka paper https://f1000research.com/articles/6-748/v2

