

Supplementary Figure 1: Comparative effect of Dexamethasone and

Methylprednisolone on T cell activation. The effect of the corticosteroids was evaluated

with multiparameter intracellular cytokine staining upon 8-hour co-culture stimulation with

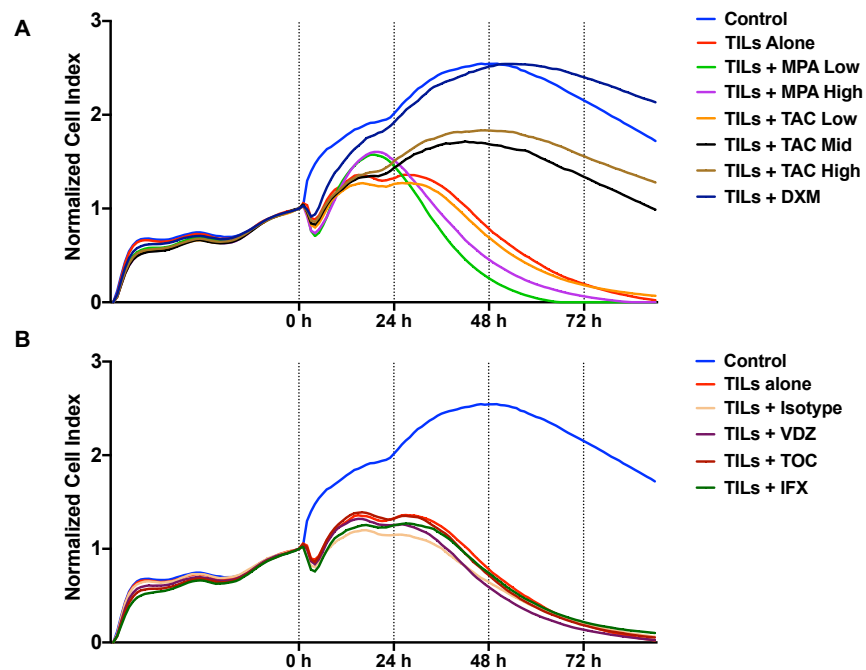
autologous tumor cell lines, with a flow cytometry read-out. The background, TILs alone,

was subtracted from the data and the data were normalized to tumor + TILs alone (visualized

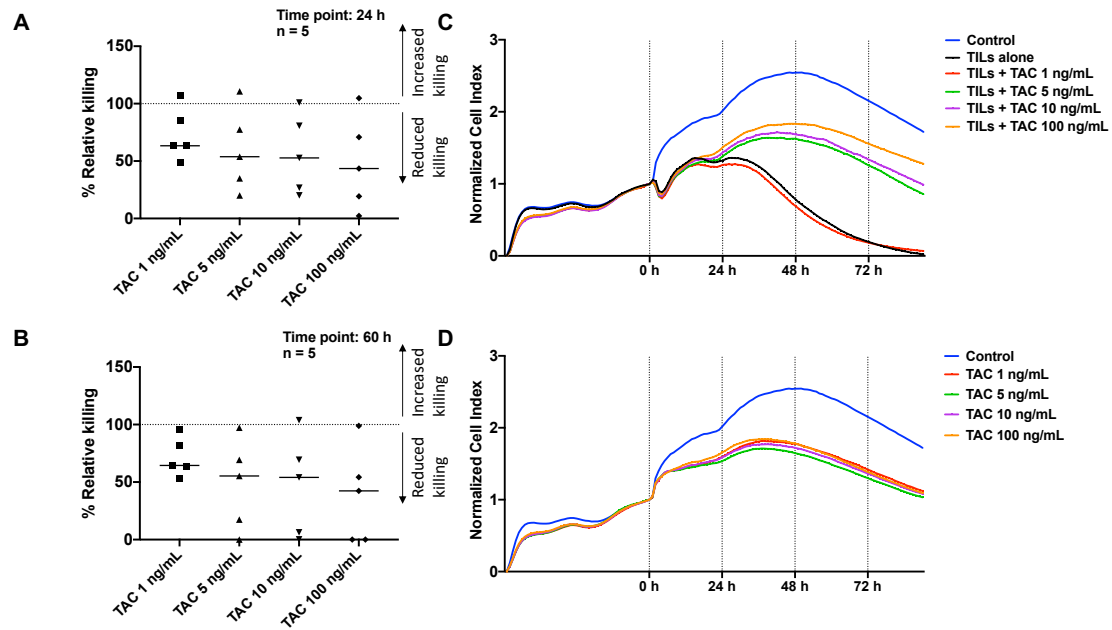
by the dotted line at 100%). The dot plots illustrate the drug effect on CD8+ (**A**) and CD4+

(**B**) T cells. Both Dexamethasone and Methylprednisolone show a tendency to reduce CD8+

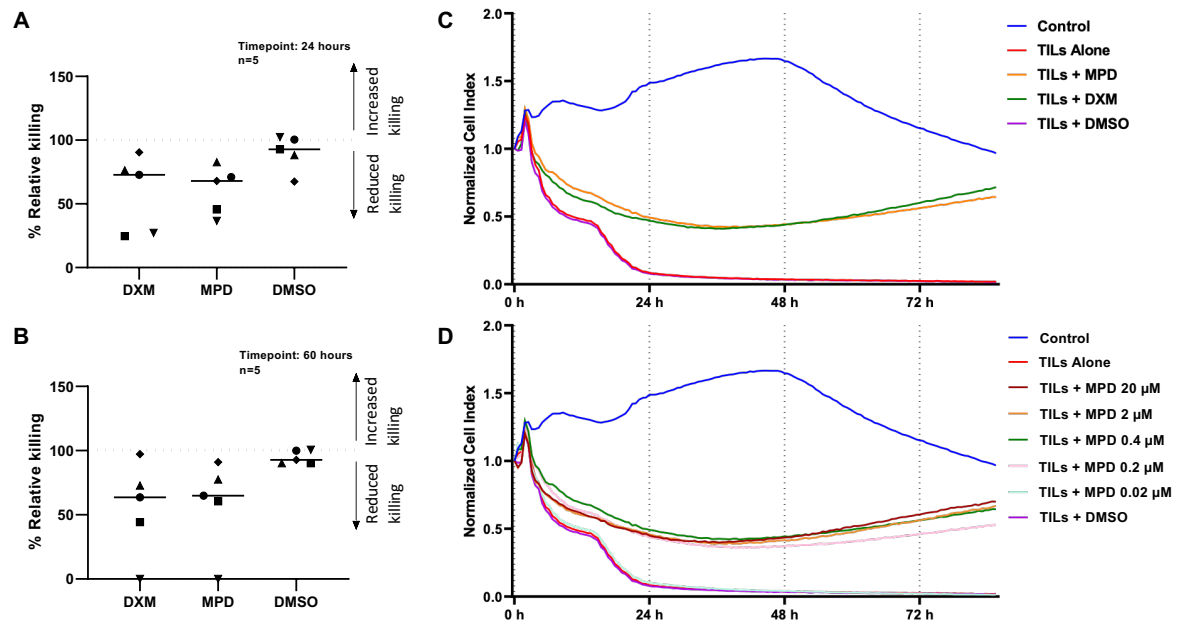
and CD4+ T cell activation. DXM: Dexamethasone, MPD: Methylprednisolone



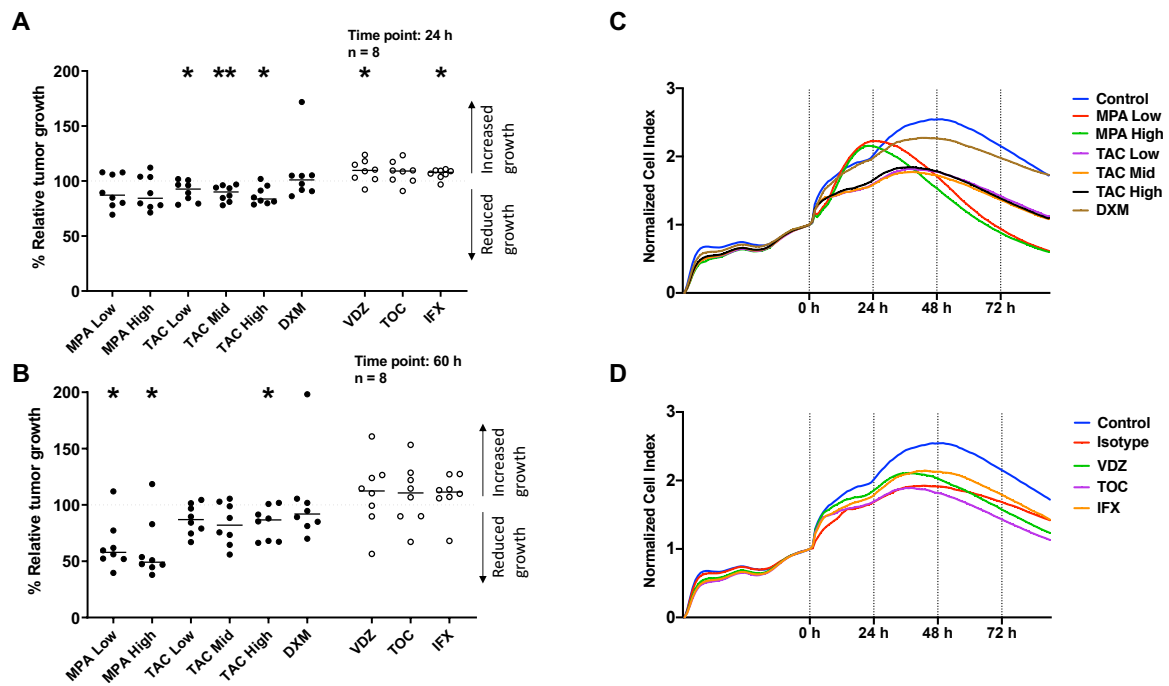
Supplementary Figure 2: xCELLigence killing curves in the presence of TIRS. The panels show the killing ability of TILs in the presence of small molecules (**A**) or antibodies (**B**), from a single exemplary donor at different time points during co-culture with autologous tumor cells. MPA: Mycophenolate, TAC: Tacrolimus, DXM: Dexamethasone, VDZ: Vedolizumab, TOC: Tocilizumab, IFX: Infliximab



Supplementary Figure 3: A dose-response titration of tacrolimus. A dose titration of tacrolimus was performed using a tumor killing assay on xCELLingence platform. **(A-B)** The dot plots show the effect of different concentrations of tacrolimus of T cell-mediated tumor killing after **(A)** 24 hours and **(B)** 60 hours of co-culture with autologous tumor cells. The data were normalized to the control “tumor + TILs”. The control is represented with a dotted line at 100 %. Data are presented with median and tested for statistical significance using a Wilcoxon matched-pairs test. **(C-D)** The panels show an example of the killing curves, from one representative patient, in the presence of **(C)** tumor, TILs, and different concentrations of tacrolimus and **(D)** tumor plus different concentrations of tacrolimus. P-values: *=0.01-0.05, **=0.001-0.01; TAC: Tacrolimus



Supplementary Figure 4: Comparative effect of Dexamethasone and Methylprednisolone on T cell-mediated tumor killing. The effect of corticosteroids on T cell-mediated tumor-killing was measured via a real-time tumor-killing assay on the xCELLigence platform and evaluated after **(A)** 24-hour and **(B)** 60-hour of co-culture of tumor, TILs and drug. MPD was normalized to the control “tumor + TILs” as no difference was detected between “tumor+TILs” and “tumor+TILs+DMSO”. A reduction in T cell-mediated killing was observed in the presence of corticosteroids after 24 hours **(A)** and 60 hours **(B)** of co-culture. **(C-D)** The panels show an example of the killing curves, from one representative patient, in the presence of **(C)** tumor, TILs, Dexamethasone and Methylprednisolone and **(D)** a titration of different concentrations of methylprednisolone. DXM: Dexamethasone, MPD: Methylprednisolone



Supplementary Figure 5: Effect of TIRS on tumor growth. The effect of TIRS on tumor cell growth was measured via a real-time tumor killing assay on the xCELLigence platform and evaluated after **(A)** 24-hour and **(B)** 60-hour of tumor cell-exposure to the different drugs. Small molecules were normalized to the control “tumor + TILs” and are represented as black dots, whereas all antibodies were normalized to the control “tumor + TILs + isotype” and are represented as empty dots. Controls are presented as a dotted line at 100%. **(A)** All concentrations of tacrolimus significantly reduced tumor growth, whereas vedolizumab and infliximab slightly enhanced tumor growth after 24 hours of drug-exposure. **(B)** After 60 hours of drug-exposure mycophenolate significantly reduced tumor growth, whilst only the highest dose of tacrolimus demonstrated a significant reducing effect. **(C-D)** The panels show representative examples of tumor growth curves in the presence of **(C)** the small molecules and **(D)** the antibodies. The data in **(A)** and **(B)** are presented with median and tested for statistical significance using a Wilcoxon matched-pairs test. P values: *=0.01-0.05, **=0.001-0.01. MPA: Mycophenolate, TAC: Tacrolimus, DXM: Dexamethasone, VDZ: Vedolizumab, TOC: Tocilizumab, IFX: Infliximab