

# Supporting Information for: Extended correlation functions for spatial analysis of multiplex imaging data

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June 16, 2023

## S1 Analysis of other regions of interest

In this section we present supplementary analyses (without additional commentary) for three additional  $1\text{mm} \times 1\text{mm}$  regions of interest from within the same KPN mouse presented in the main text. The same cross-PCFs, NCFs, TCMs and wPCFs as those found in the main text are presented below, and show the same general results presented in the main text.

Celltype	Marker	Region 1 - $n$	Region 2 - $n$	Region 3 - $n$
Epithelium	E-Cadherin	5122	5812	5737
Macrophage	CD68	549	287	467
T helper cell	CD4+ FoxP3-	965	91	666
Neutrophil	Ly6G	116	165	163
Cytotoxic T cell	CD8	163	14	130
Regulatory T cell	CD4+ FoxP3+	25	5	49

Table 1: Number of cells,  $n$ , for each supplementary region

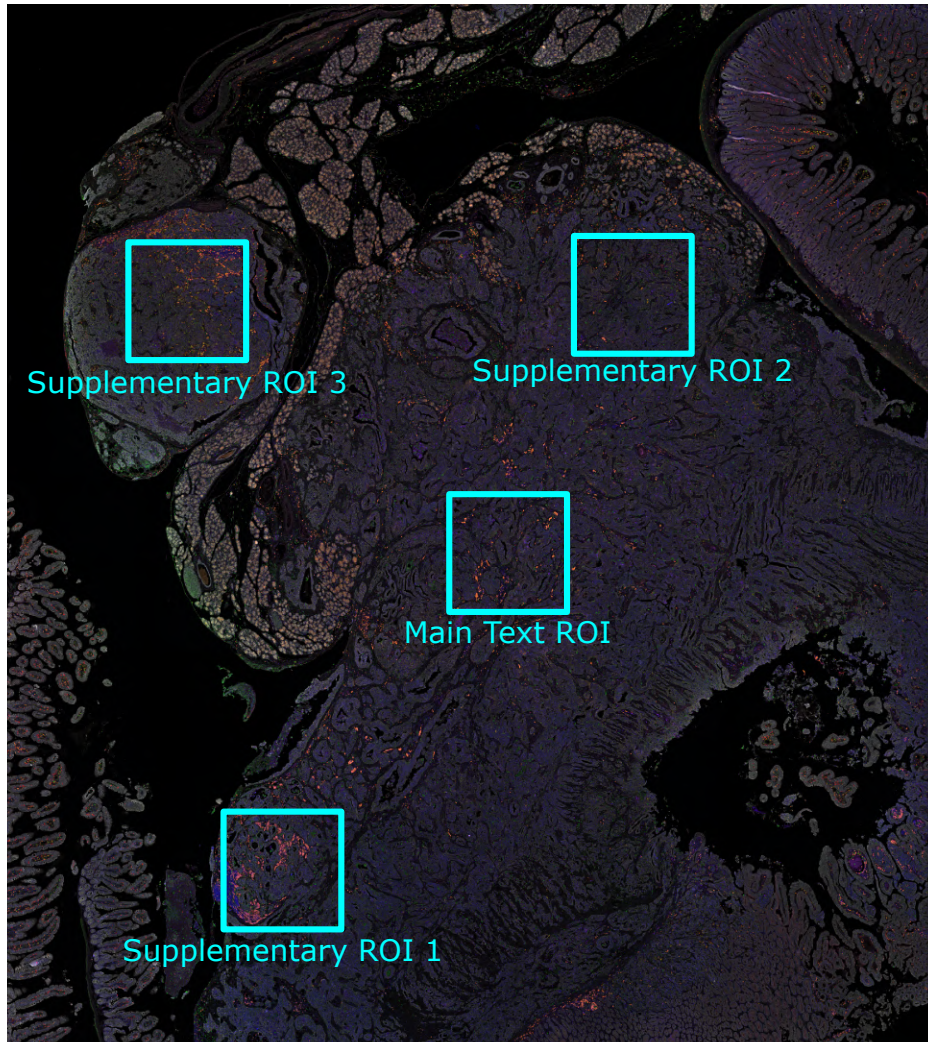


Figure S1: Location of  $1\text{mm} \times 1\text{mm}$  ROIs within the wider tissue context

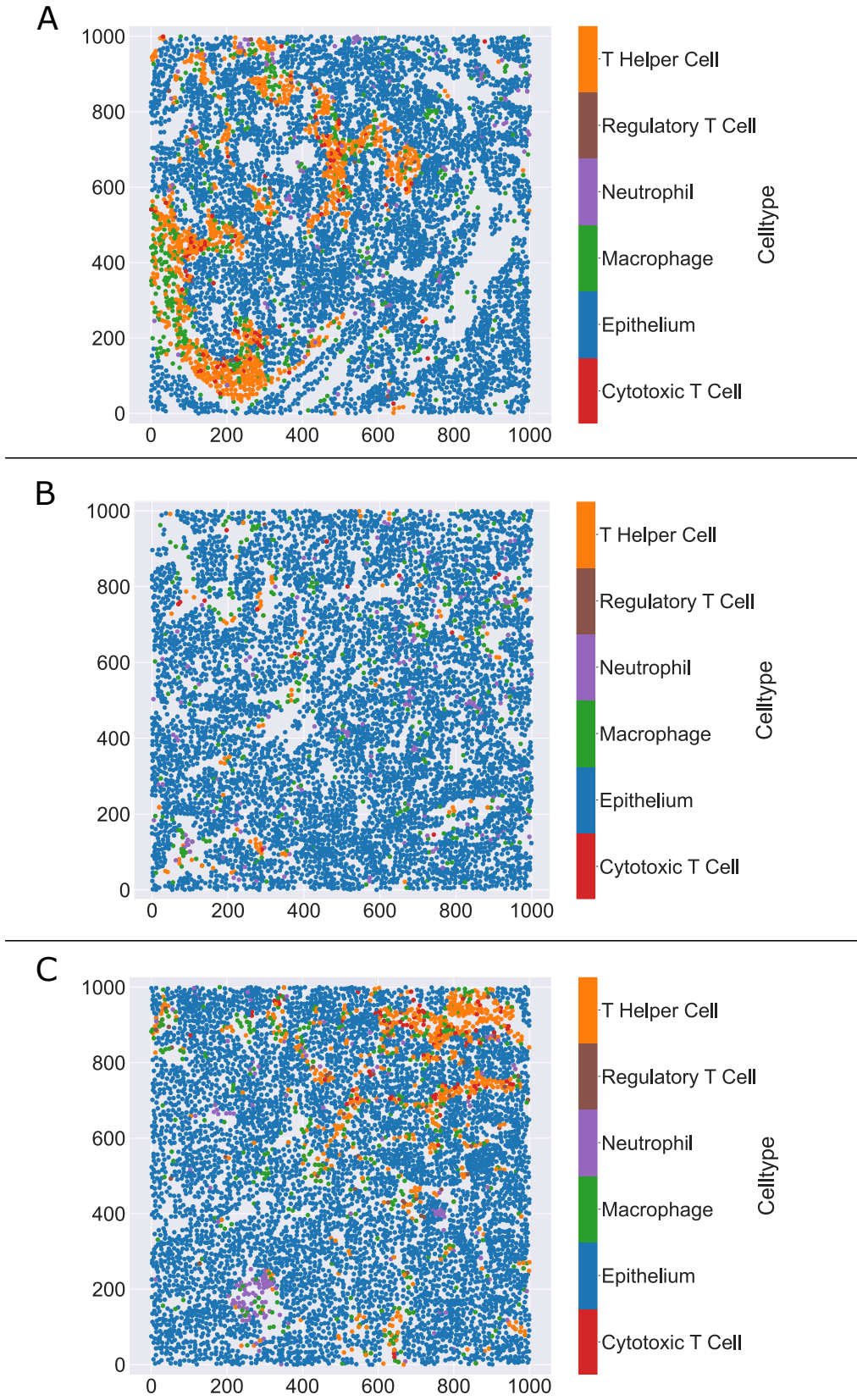


Figure S2: Cell centre locations for supplementary ROIs 1 (A), 2 (B) and 3 (C)

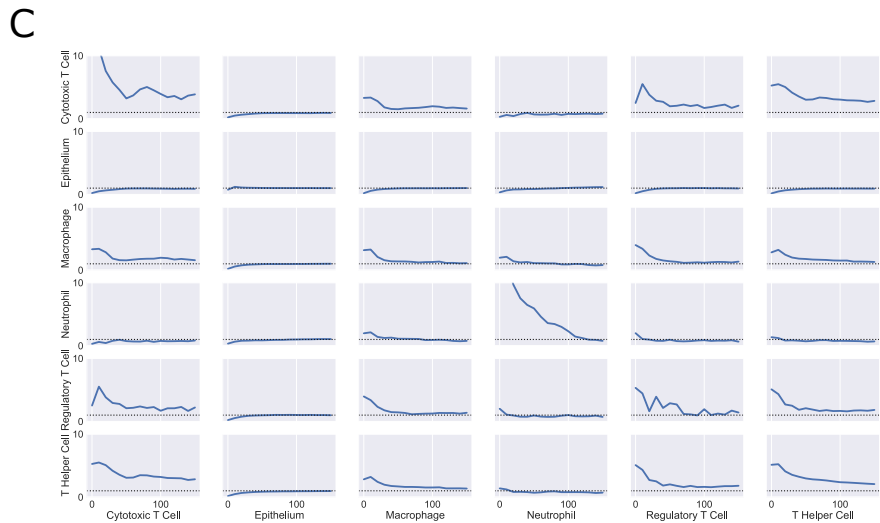
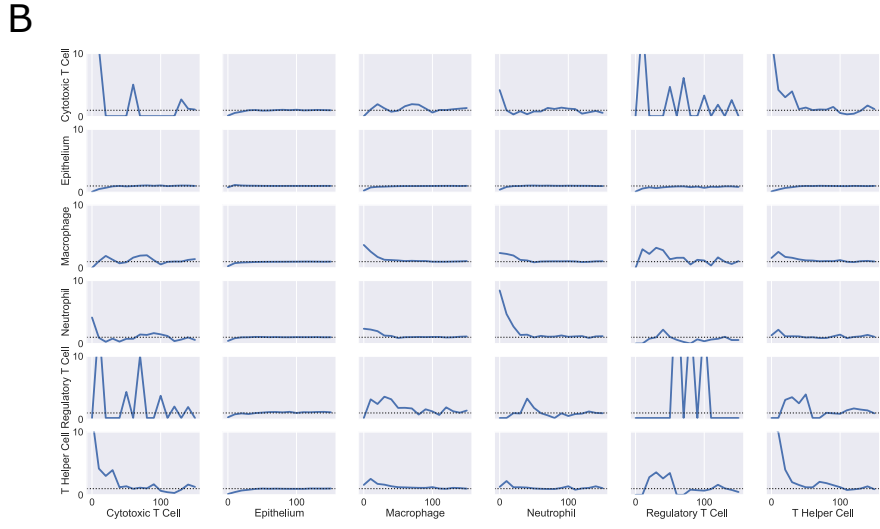
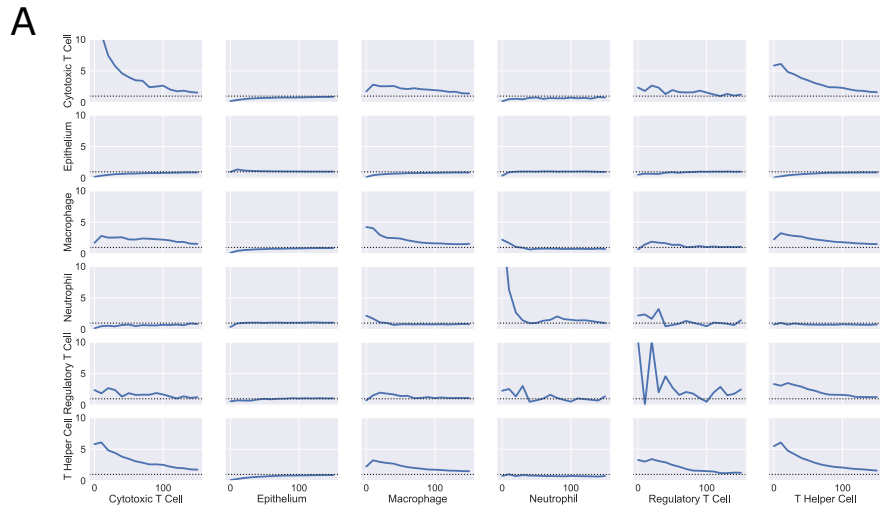
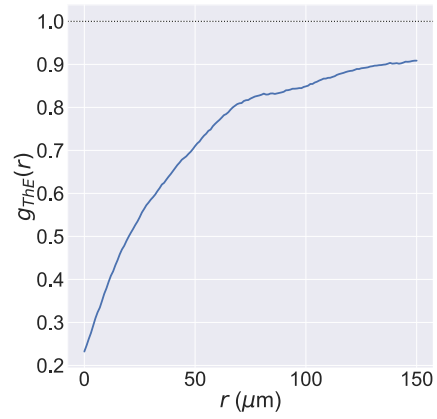
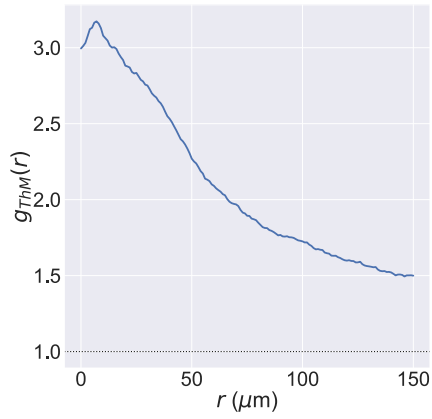
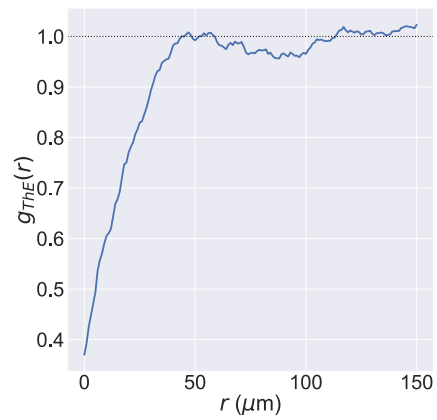
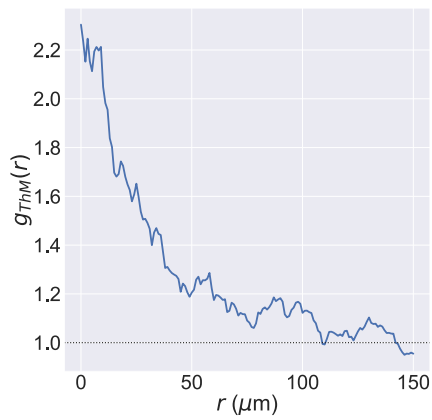


Figure S3: All cross-PCFs from supplementary ROIs 1 (A), 2 (B) and 3 (C)

A



B



C

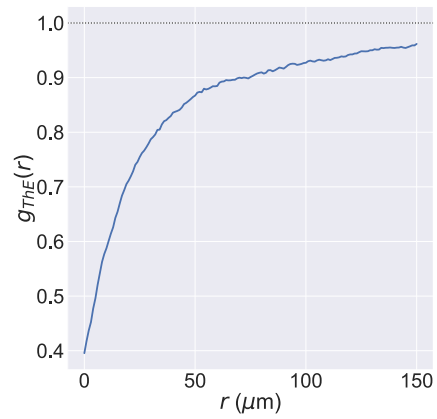
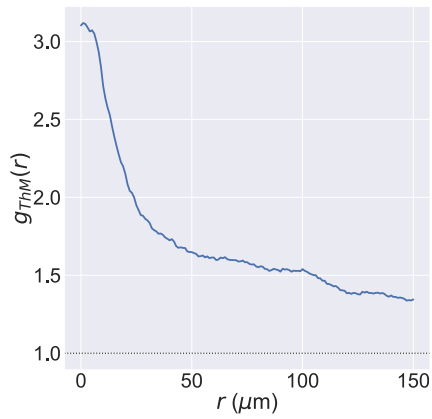


Figure S4: Cross-PCFs between T Helper Cells and Macrophages (left) / Epithelium (right) from supplementary ROIs 1 (A), 2 (B) and 3 (C)

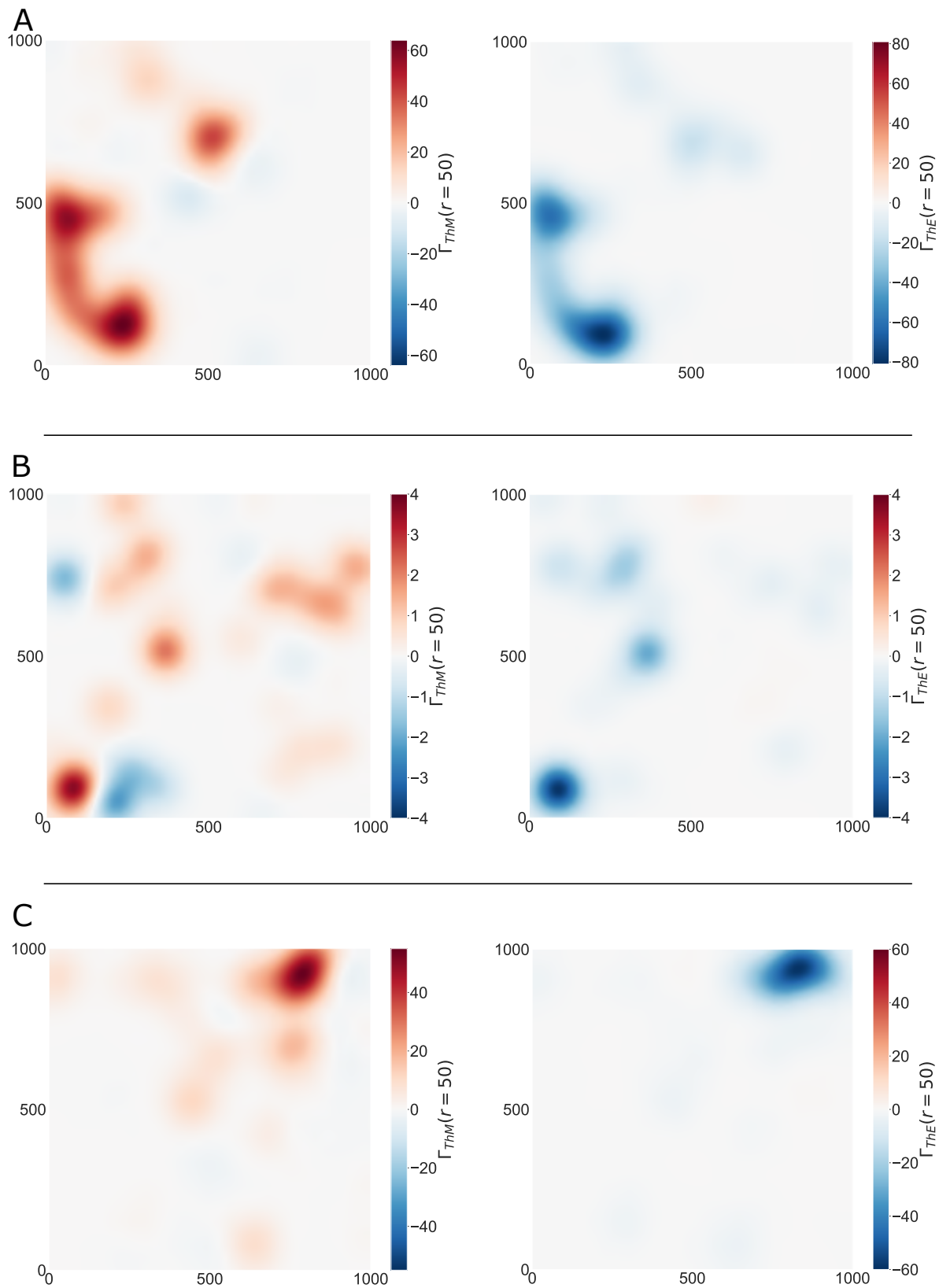


Figure S5: TCMs between T Helper Cells and Macrophages (left) / Epithelium (right) from supplementary ROIs 1 (A), 2 (B) and 3 (C)

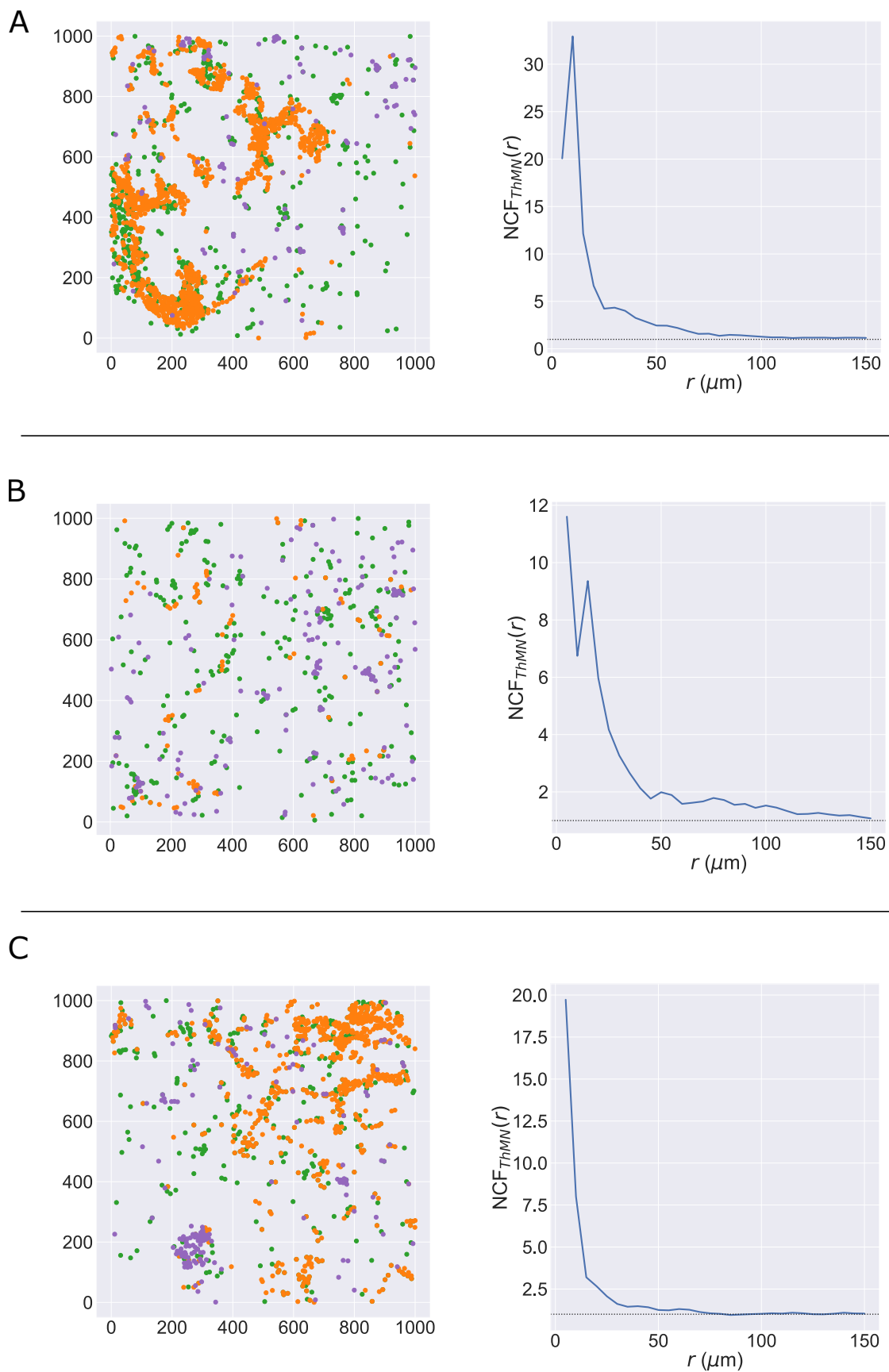


Figure S6: Left: locations of T Helper cells (orange), Macrophages (green) and Neutrophils (purple) from supplementary ROIs 1 (A), 2 (B) and 3 (C). Right: NCF between T Helper cells, Macrophages and Neutrophils from supplementary ROIs 1 (A), 2 (B) and 3 (C).

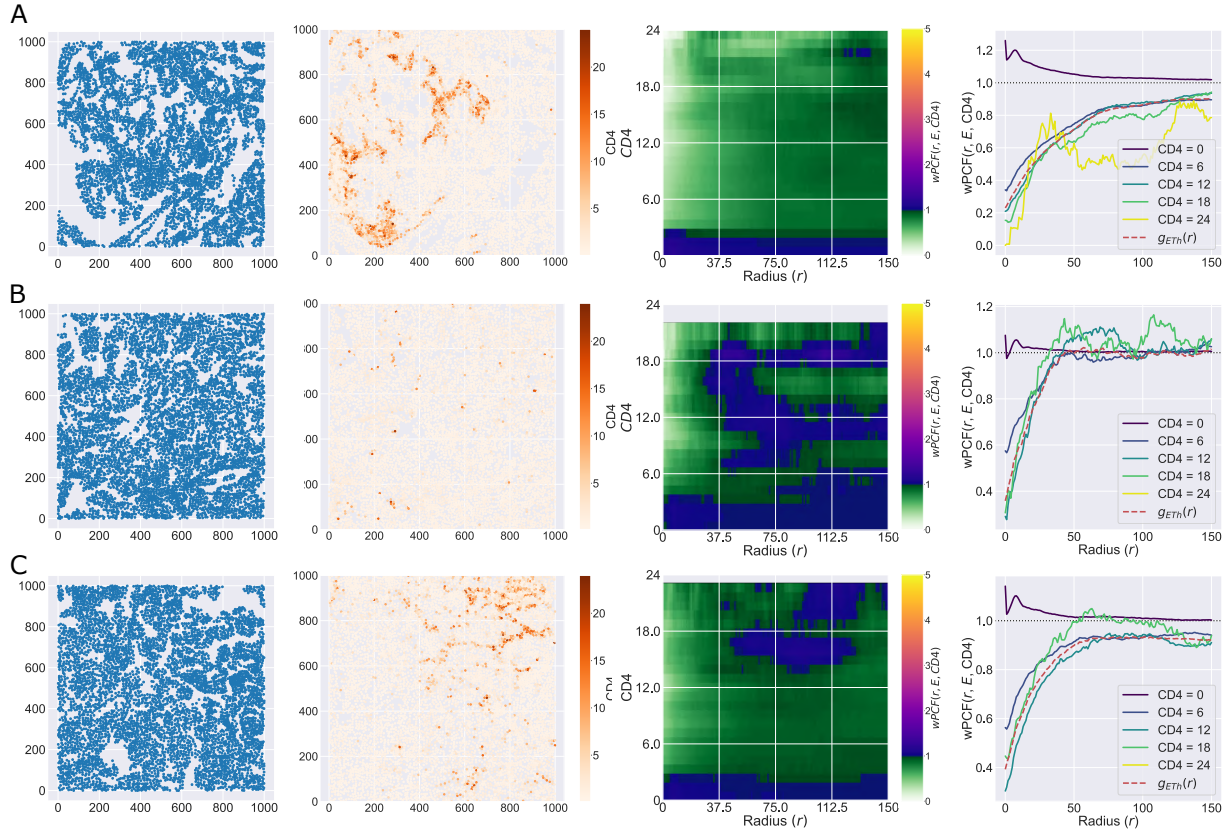


Figure S7: From left: i) locations of epithelial (cancer) cells; ii) all cells labelled according to CD4 intensity; iii)  $wPCF(r, E, CD4)$ ; iv) cross-sections of  $wPCF(r, E, CD4)$  at fixed values for the CD4 intensity. From supplementary ROIs 1 (A), 2 (B) and 3 (C).