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Supplementary Materials for

Detection of response to tumor microenvironment–targeted cellular immunotherapy using nano-radiomics

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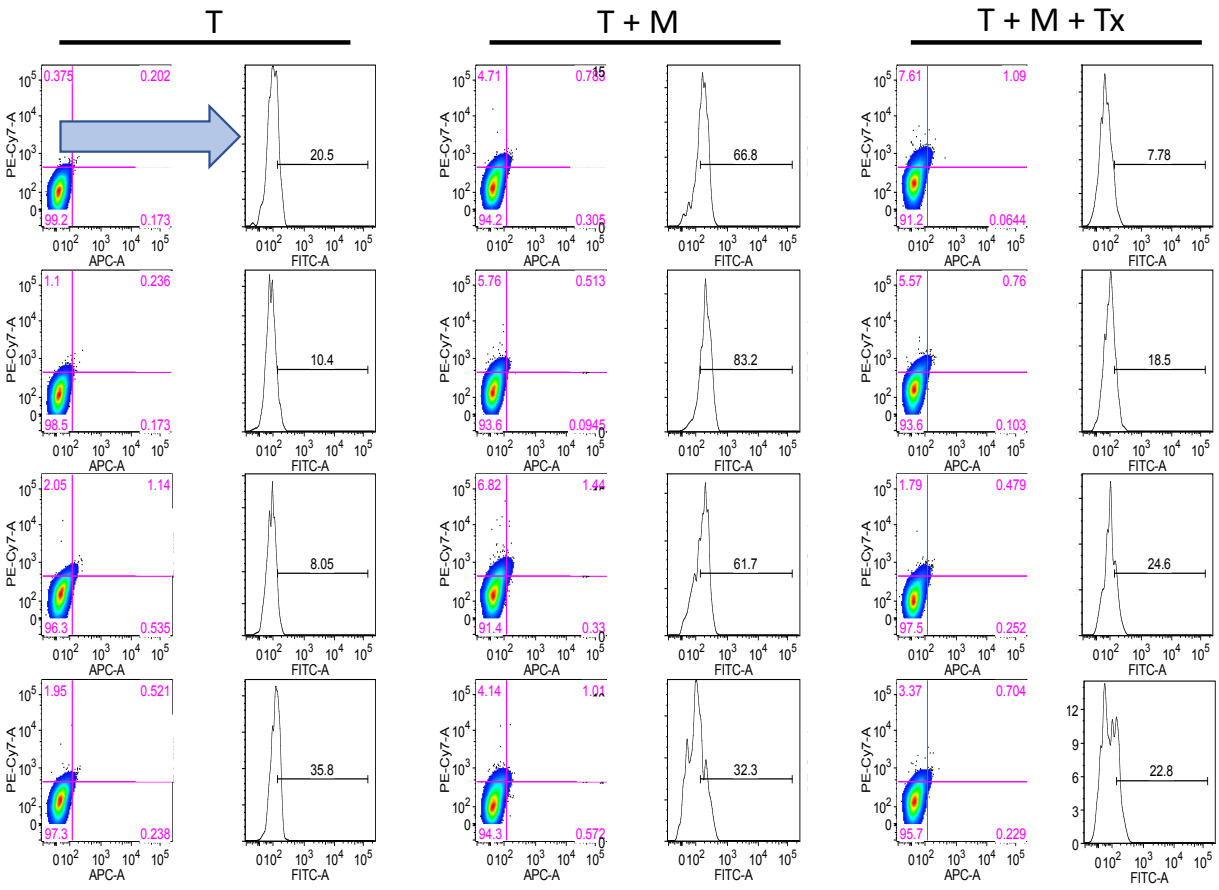
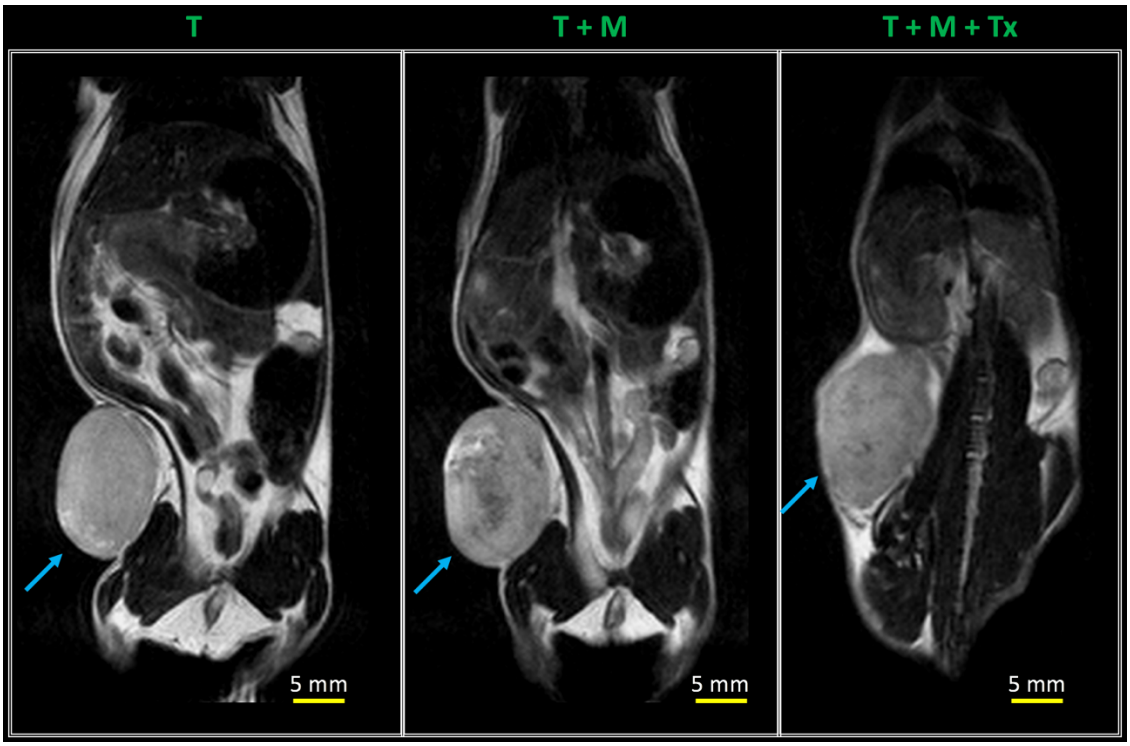
Supplementary Figure 1. Intra-tumoral MDSCs burden as quantified by flow cytometry. Representative flow cytometry profiles for definition of MDSCs in Tumor only (T), Tumor+MDSC (T+M) and Tumor+MDSC+NK cell immunotherapy (T+M+Tx) groups (n=4 mice/group). Human MDSCs were defined as $CD14^{+}$ (PE-Cy7 axis), HLA-DR^{neg} (APC axis) cells (top left quadrant of each dot plot) that also express intracellular $S100A9^{+}$ (FITC axis of histograms) within tumor digests after live cell gating and elimination of doublets.



Supplementary Figure 2. Non-contrast MR imaging. Representative coronal non-contrast T2-weighted (T2w) MR images for an animal in Tumor only control group (T, left column), Tumor+MDSC untreated group (T+M, middle column) and Tumor+MDSC+NK cell immunotherapy group (T+M+Tx, right column).



Supplementary Table 1. Radiomic analysis of nanoparticle contrast-enhanced CT delayed images. List of radiomic features that enabled differentiation of immunotherapy group from untreated group. Non-parametric Wilcoxon test with Bonferroni correction was applied for statistical analysis and calculation of p–values. A p-value less than 0.05 was considered significantly different.

Radiomic feature name	p-value
glrlm_RunLengthNonUniformity	0.0029
glszm_SizeZoneNonUniformity	0.0058
glszm_GrayLevelNonUniformity	0.0063
ngtdm_Coarseness	0.0072
gldm_DependenceNonUniformity	0.0075
gldm_GrayLevelNonUniformity	0.0075
glrlm_GrayLevelNonUniformity	0.0075
glszm_ZoneVariance	0.0123
glszm_LargeAreaEmphasis	0.0123
glszm_LargeAreaHighGrayLevelEmphasis	0.0267

Supplementary Table 2. Radiomic analysis of nanoparticle contrast-enhanced CT angiographic images. List of radiomic features that enabled differentiation of immunotherapy group from untreated group. Non-parametric Wilcoxon test with Bonferroni correction was applied for statistical analysis and calculation of p–values. A p-value less than 0.05 was considered significantly different.

Radiomic feature name	p-value
glszm_GrayLevelNonUniformity	0.0017
glszm_ZoneVariance	0.0024
glszm_LargeAreaEmphasis	0.0024
gldm_GrayLevelNonUniformity	0.0026
ngtdm_Coarseness	0.0053
glszm_LargeAreaHighGrayLevelEmphasis	0.0063
glrlm_GrayLevelNonUniformity	0.0075
glszm_SizeZoneNonUniformity	0.0075
firstorder_10Percentile	0.0108
gldm_DependenceNonUniformity	0.0230
firstorder_Median	0.0237
glszm_SizeZoneNonUniformityNormalized	0.0333
glrlm_RunLengthNonUniformity	0.0357

Supplementary Table 3. Radiomic analysis of non-contrast T2w-MRI images. List of radiomic features that enabled differentiation of immunotherapy group from untreated group. Non-parametric Wilcoxon test with Bonferroni correction was applied for statistical analysis and calculation of p–values. A p-value less than 0.05 was considered significantly different.

Radiomic feature name	**p-value**
glrlm_RunLengthNonUniformity	0.0063
glszm_SizeZoneNonUniformity	0.0096
gldm_DependenceNonUniformity	0.0156
glcm_Correlation	0.0412
firstorder_Maximum	0.0437