

## Supplementary Material

### Macrophage mannose receptor CD206-targeted PET imaging in experimental acute myocardial infarction

Putri Andriana<sup>1</sup>, Senthil Palani<sup>1</sup>, Heidi Liljenbäck<sup>1,2</sup>, Imran Iqbal<sup>1</sup>, Vesa Oikonen<sup>1</sup>, Jenni Virta<sup>1</sup>, Konstantina Makrypidi<sup>3</sup>, Johan Rajander<sup>4</sup>, Erika Atencio Herre<sup>1</sup>, Aino Suni<sup>1</sup>, Sirpa Jalkanen<sup>5,6</sup>, Juhani Knuuti<sup>1,6,7</sup>, Luisa Martinez-Pomares<sup>8</sup>, Ioannis Pirmettis<sup>3</sup>, Xiang-Guo Li<sup>1,6,7,9</sup>, Antti Saraste<sup>1,7,10</sup> and Anne Roivainen<sup>1,2,6,7\*</sup>

<sup>1</sup>Turku PET Centre, University of Turku, Turku, Finland

<sup>2</sup>Turku Center of Disease Modeling, University of Turku, Turku, Finland

<sup>3</sup>Institute of Nuclear and Radiological Science and Technology, Energy and Safety, NCSR “Demokritos”, Athens, Greece

<sup>4</sup>Turku PET Centre, Accelerator Laboratory, Åbo Akademi University, Turku, Finland

<sup>5</sup>MediCity Research Laboratory, University of Turku, Turku, Finland

<sup>6</sup>InFLAMES Research Flagship, University of Turku, Turku, Finland

<sup>7</sup>Turku PET Centre, Turku University Hospital, Turku, Finland

<sup>8</sup>School of Life Sciences, University of Nottingham, Nottingham, UK

<sup>9</sup>Department of Chemistry, University of Turku, Turku, Finland

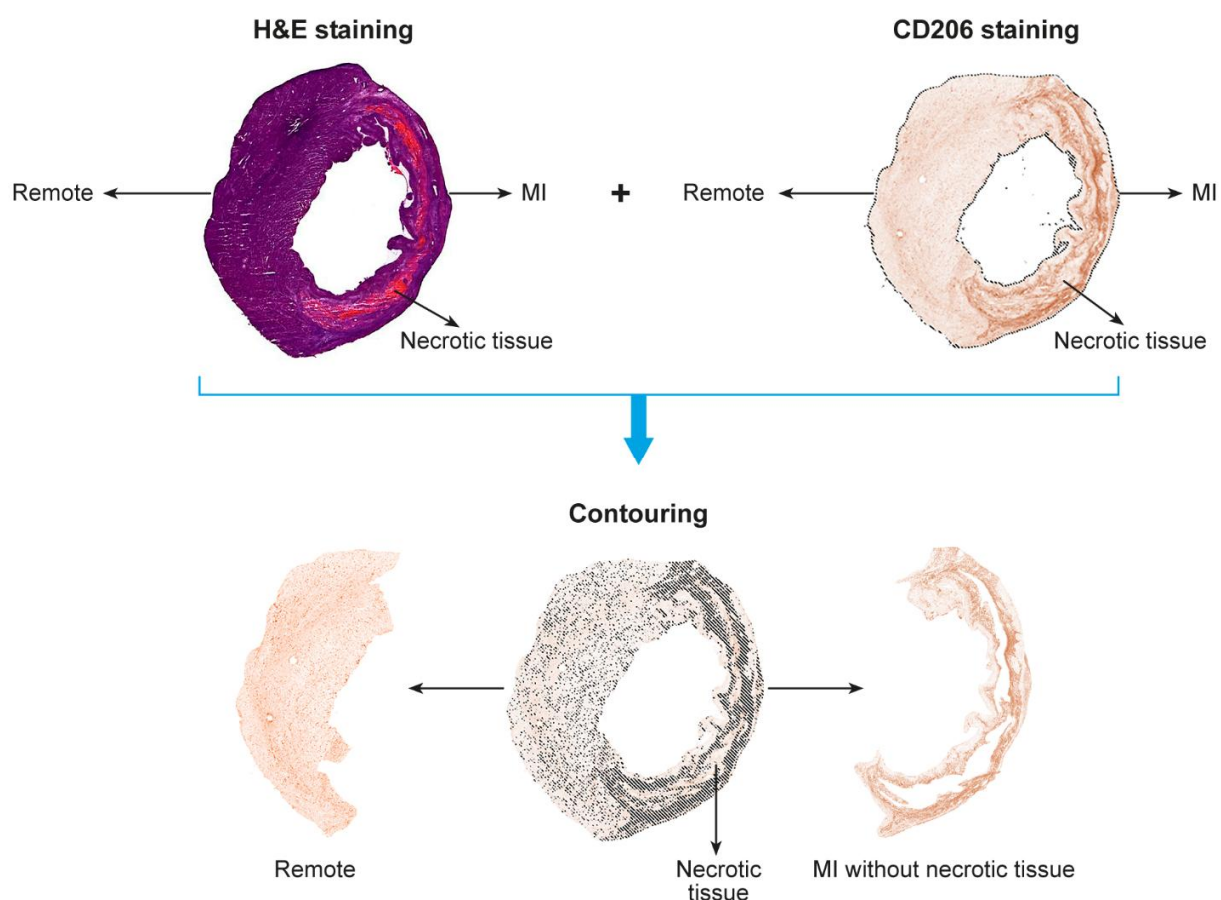
<sup>10</sup>Heart Center, Turku University Hospital and University of Turku, Turku, Finland

\*Correspondence: Professor Anne Roivainen, PhD, Turku PET Centre, Kiinamyllynkatu 4-8, FI-20520 Turku, Finland; Phone: +35823132862; E-mail: [anne.roivainen@utu.fi](mailto:anne.roivainen@utu.fi)

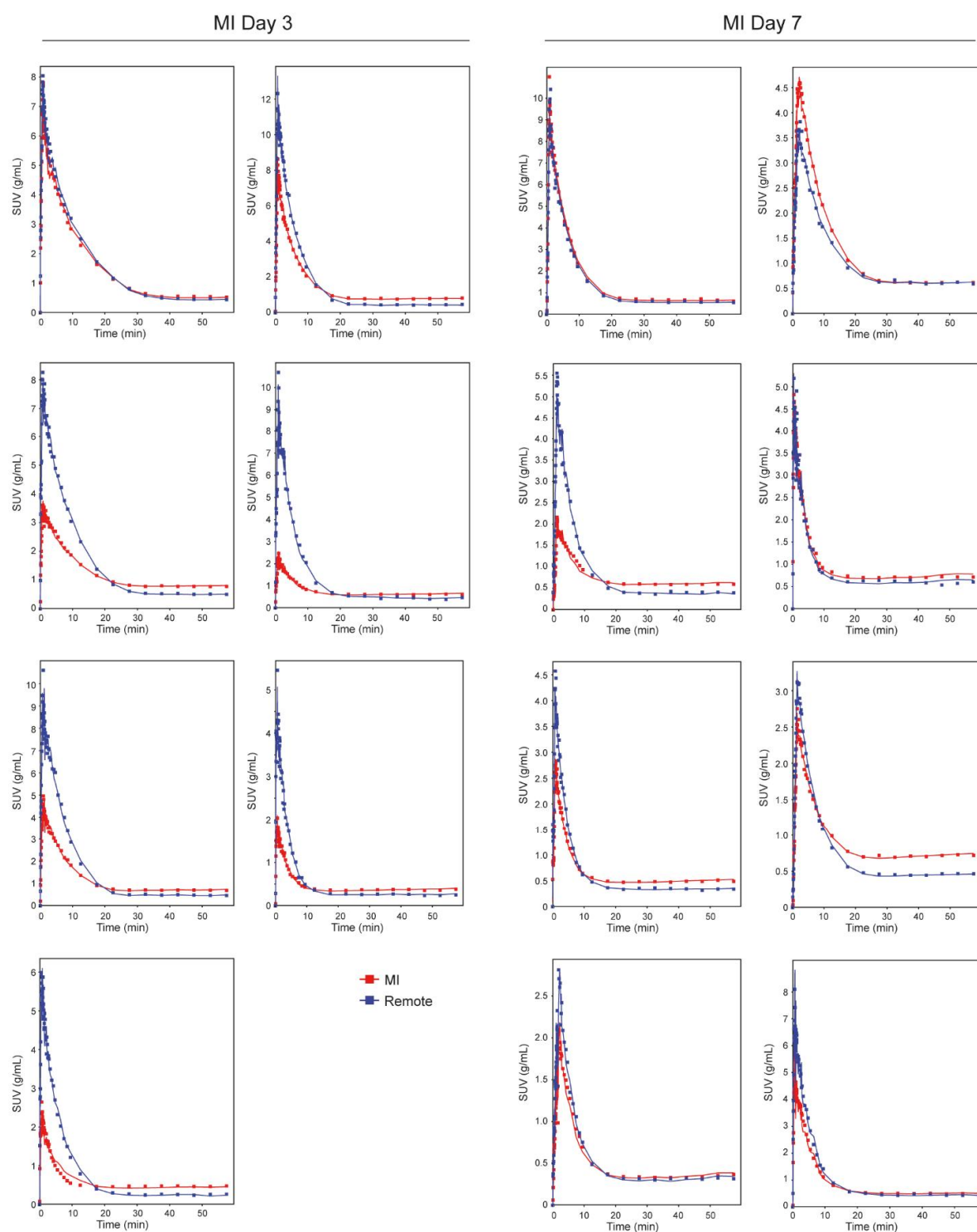
**Supplementary Table 1** *Ex vivo* biodistribution of Al[<sup>18</sup>F]F-NOTA-D10CM at 70 min post-intravenous injection into rats

| Tissue              | MI              |                 | Sham            |                 |
|---------------------|-----------------|-----------------|-----------------|-----------------|
|                     | Day 3           | Day 7           | Day 3           | Day 7           |
|                     | ( <i>n</i> = 7) | ( <i>n</i> = 7) | ( <i>n</i> = 4) | ( <i>n</i> = 4) |
| Blood               | 0.004 ± 0.001   | 0.006 ± 0.008   | 0.003 ± 0.001   | 0.002 ± 0.001   |
| Bone (skull)        | 0.158 ± 0.074   | 0.179 ± 0.036   | 0.242 ± 0.038   | 0.218 ± 0.067   |
| Bone marrow (femur) | 2.624 ± 0.495   | 2.923 ± 0.907   | 2.549 ± 0.902   | 2.998 ± 1.258   |
| Brain (intact)      | 0.008 ± 0.000   | 0.002 ± 0.001   | 0.001 ± 0.000   | 0.001 ± 0.001   |
| Heart               | 0.231 ± 0.089   | 0.319 ± 0.154   | 0.340 ± 0.052   | 0.242 ± 0.040   |
| Intestine (large)   | 0.266 ± 0.052   | 0.281 ± 0.111   | 0.335 ± 0.072   | 0.365 ± 0.227   |
| Intestine (small)   | 0.369 ± 0.077   | 0.381 ± 0.203   | 0.469 ± 0.069   | 0.273 ± 0.184   |
| Kidneys             | 0.478 ± 0.124   | 0.484 ± 0.155   | 0.545 ± 0.134   | 0.496 ± 0.149   |
| Liver               | 5.734 ± 1.463   | 5.118 ± 1.392   | 6.690 ± 3.015   | 6.853 ± 4.707   |
| Lungs               | 0.217 ± 0.053   | 0.154 ± 0.081   | 0.205 ± 0.039   | 0.133 ± 0.040   |
| Muscle              | 0.030 ± 0.011   | 0.024 ± 0.012   | 0.038 ± 0.005   | 0.023 ± 0.004   |
| Pancreas            | 0.449 ± 0.140   | 0.531 ± 0.168   | 0.661 ± 0.163   | 0.491 ± 0.196   |
| Spleen              | 3.072 ± 0.750   | 2.508 ± 0.461   | 2.923 ± 1.083   | 2.603 ± 1.270   |
| Testis              | 0.054 ± 0.016   | 0.051 ± 0.021   | 0.086 ± 0.007   | 0.058 ± 0.022   |
| Thymus              | 0.107 ± 0.044   | 0.079 ± 0.062   | 0.180 ± 0.014   | 0.064 ± 0.017   |

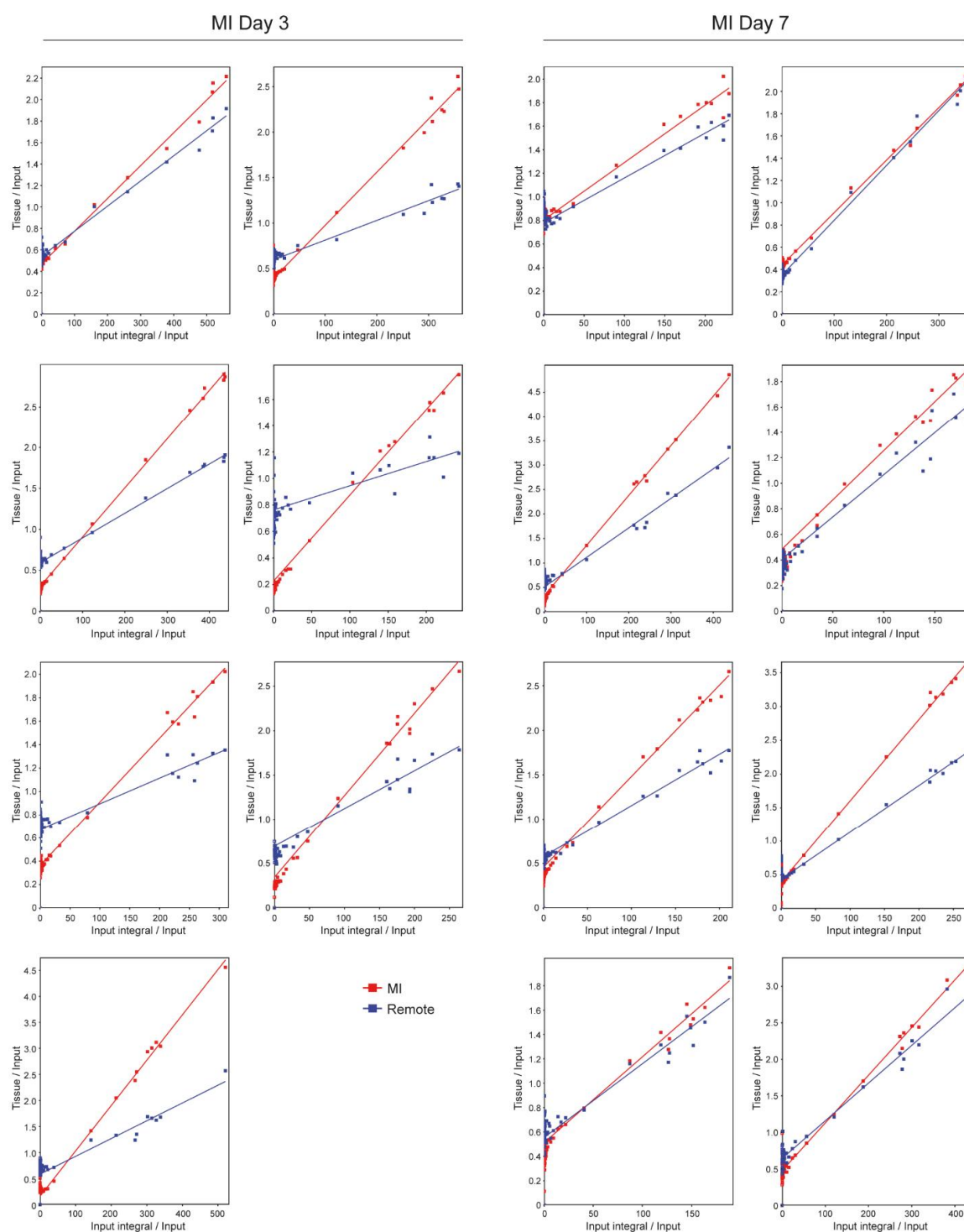
Results are expressed as the percentage of the injected radioactivity dose per gram of tissue (mean ± SD).



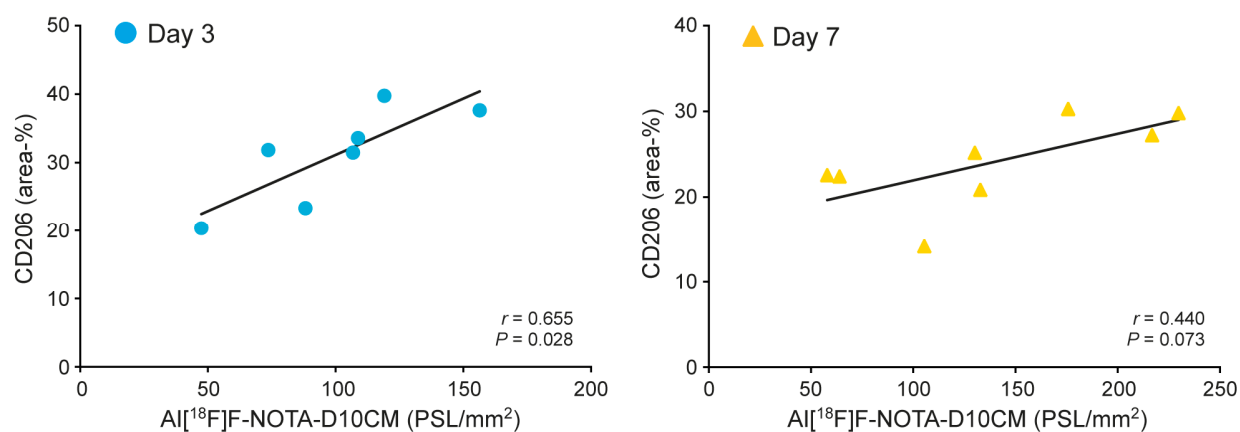
**Supplementary Fig, 1** Analysis of CD206 immunohistochemical staining of the rat left ventricle cryosections after myocardial infarction (MI). The MI area, the remote area, and necrotic tissue were visually observed in histological hematoxylin-eosin (H&E) staining, their contours were delineated, and copied onto the anti-CD206 stained adjacent section. The analysis was performed using GIMP (version 2.10.24) and ImageJ (version 1.52n) software.



**Supplementary Fig. 2** Kinetics of intravenously injected  $\text{Al}[^{18}\text{F}]\text{F-NOTA-D10CM}$  in rats with myocardial infarction (MI). Fitted time-activity curves of the MI and remote areas in each rat on Day 3 and Day 7 after permanent coronary artery ligation.



**Supplementary Fig. 3** Graphical analysis of Al[ $^{18}\text{F}$ ]F-NOTA-D10CM uptake in rats with myocardial infarction (MI). Patlak plots of the MI and remote areas in each rat on Day 3 and Day 7 after permanent coronary artery ligation.



**Supplementary Fig. 4** Association of Al[<sup>18</sup>F]F-NOTA-D10CM and CD206. Correlation between CD206-positive staining (area-%) and Al[<sup>18</sup>F]F-NOTA-D10CM uptake (autoradiography) by the infarction region on Day 3 and Day 7 after myocardial infarction. PSL/mm<sup>2</sup> = photostimulated luminescence per square millimeter. Correlation coefficients are from Pearson's analysis.