standard SA vs compartmental modelling

- 2TCM1K - HABs
- 2TCM1K - MABs
- 2TCM - HABs
- 2TCM - MABs

standard SA vs SA-IRF

Parametric mapping for TSPO PET
imaging with spectral analysis impulsive
response function

Supplementary Figure 2
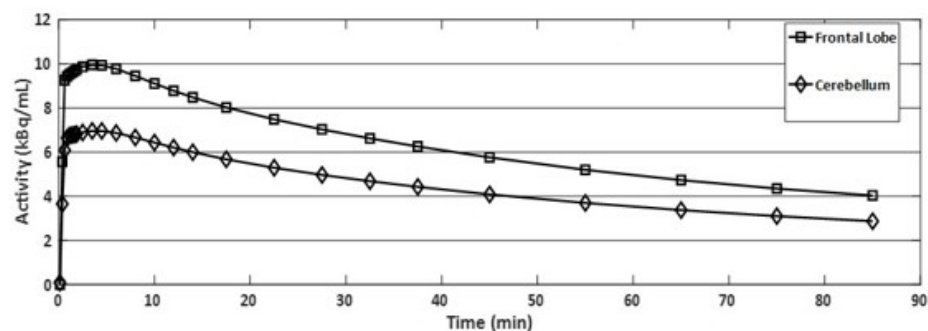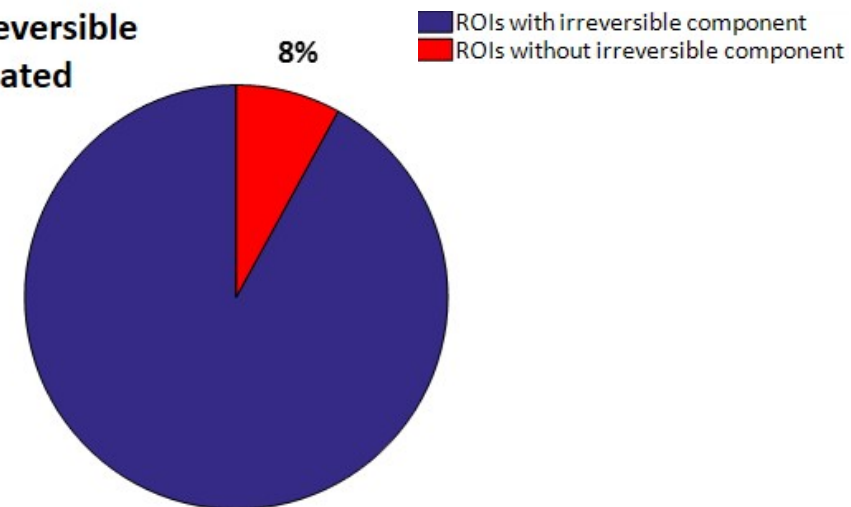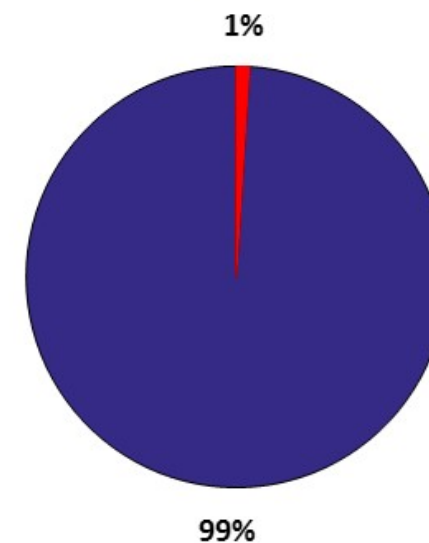

A) Kinetic Spectrum

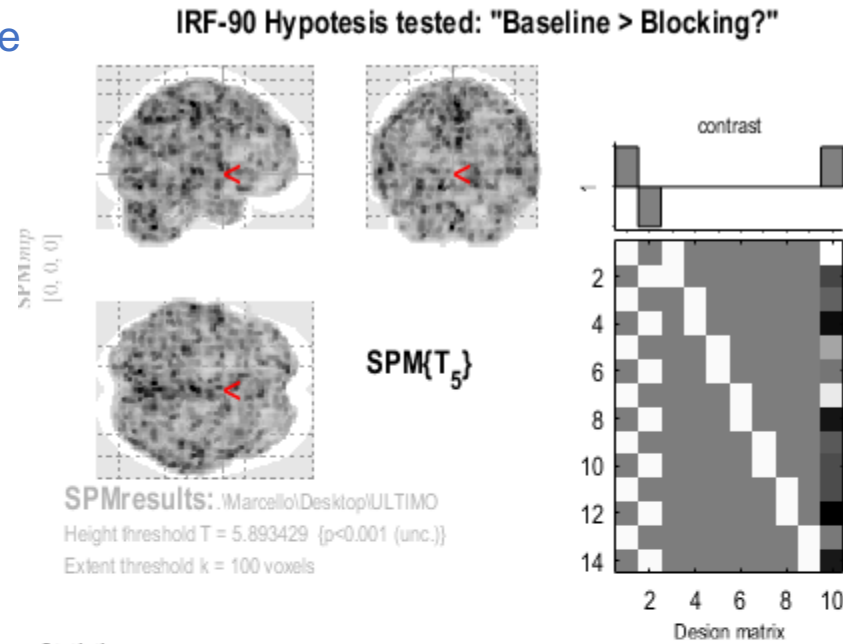B) Statistics of irreversible components estimated with SA

C) Data description

Parametric mapping for TSPO PET imaging with spectral analysis impulsive response function

Paired t-test to compare [11C]PRB28 PET SA IRF voxel estimates before and after competitive TSPO blockage with XBD173

Hypothesis: SA IRF baseline > SA IRF blocking

IRF-90 Hypotesis tested: "Baseline > Blocking?"

SPM{T₅}

SPMresults: .\Marcello\Desktop\ULTIMO
Height threshold T = 5.893429 {p<0.001 (unc.)}
Extent threshold k = 100 voxels

Statistics: *p-values adjusted for search volume*

cluster-level				peak-level					mm mm mm
$p_{FWE-corr}$	$q_{FDR-corr}$	k_E	p_{uncorr}	$p_{FWE-corr}$	$q_{FDR-corr}$	T	$(Z_=)$	p_{uncorr}	
0.000	0.000	969120.000		0.017	0.217	47.26	5.37	0.000	2 -24 50
				0.018	0.217	46.83	5.36	0.000	-2 -56 -42
				0.018	0.217	46.39	5.35	0.000	-12 -68 -12

table shows 3 local maxima more than 8.0mm apart

Height threshold: T = 5.89, p = 0.001 (1.000)
Extent threshold: k = 100 voxels, p = 0.005 (0.180)
Expected voxels per cluster, <k> = 10.680
Expected number of clusters, <c> = 0.20
FWEp: 37.957, FDRp: Inf, FWEc: 96912, FDRc: 96912

Degrees of freedom = [1.0, 5.0]
FWHM = 16.4 16.7 15.5 mm mm mm; 8.2 8.4 7.7 {voxels}
Volume: 3345448 = 418181 voxels = 747.4 resels
Voxel size: 2.0 2.0 2.0 mm mm mm; (resel = 529.80 voxels)

Paired t-test to compare [11C]PRB28 PET SA number of spectral components before and after competitive TSPO blockage with XBD173

Hypothesis: no difference between two conditions

Nr. of components "Baseline vs Blocking"

$SPM\{T_5\}$

SPMresults: .\Desktop\SPM component
Height threshold T = 5.893429 {p<0.001 (unc.)}
Extent threshold k = 100 voxels

Statistics: *p-values adjusted for search volume*

set-level		cluster-level				peak-level					mm mm mm
p	c	$p_{FWE-corr}$	$q_{FDR-corr}$	k_E	p_{uncorr}	$p_{FWE-corr}$	$q_{FDR-corr}$	T	$(Z_=)$	p_{uncorr}	
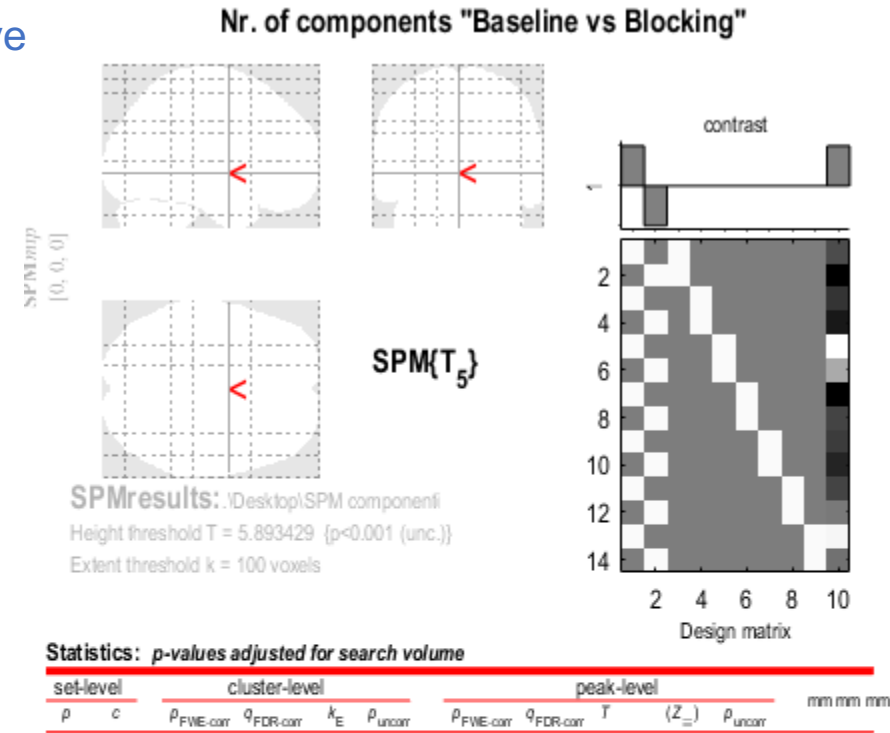
no suprathreshold clusters

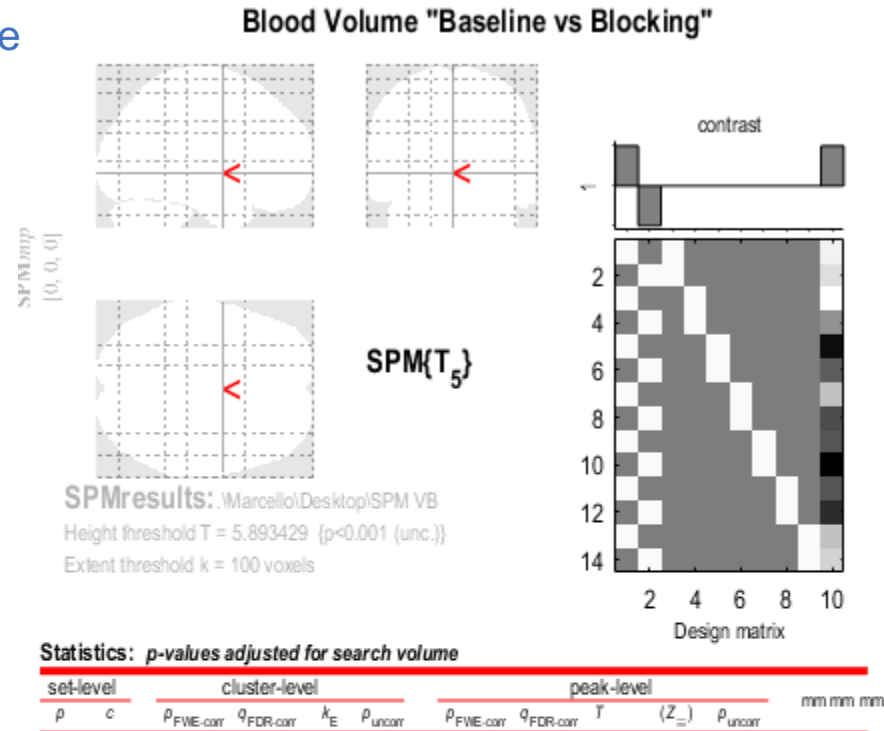*table shows 3 local maxima more than 8.0mm apart*

Height threshold: T = 5.89, p = 0.001 (1.000)   Degrees of freedom = [1.0, 5.0]
Extent threshold: k = 100 voxels, p = 0.000 (0.000)   FWHM = 4.3 4.4 4.6 mm mm mm; 2.1 2.2 2.3 {voxels}
Expected voxels per cluster, <k> = 0.217   Volume: 1535640 = 191955 voxels = 15722.3 resels
Expected number of clusters, <c> = 0.00   Voxel size: 2.0 2.0 2.0 mm mm mm; {resel = 10.78 voxels}
FWEp: 32.465, FDRp: Inf, FWEc: 8, FDRc: 1

Parametric mapping for TSPO PET imaging with spectral analysis impulsive response function

Paired t-test to compare [11C]PRB28 PET blood volume before and after competitive TSPO blockage with XBD173

Hypothesis: no difference between two conditions

Blood Volume "Baseline vs Blocking"

contrast

SPM{T$_5$}

SPMresults: .\Marcello\Desktop\SPM VB
Height threshold T = 5.893429 {p<0.001 (unc.)}
Extent threshold k = 100 voxels

Design matrix

Statistics: *p-values adjusted for search volume*

set-level		cluster-level				peak-level					mm mm mm
p	c	$p_{FWE-corr}$	$q_{FDR-corr}$	k_E	p_{uncorr}	$p_{FWE-corr}$	$q_{FDR-corr}$	T	$(Z_=)$	p_{uncorr}	

no suprathreshold clusters

table shows 3 local maxima more than 8.0mm apart

Height threshold: T = 5.89, p = 0.001 (1.000)   Degrees of freedom = [1.0, 5.0]
Extent threshold: k = 100 voxels, p = 0.000 (0.000)   FWHM = 5.4 5.7 5.8 mm mm mm; 2.7 2.9 2.9 {voxels}
Expected voxels per cluster, <k> = 0.449   Volume: 266200 = 33275 voxels = 43.2 resels
Expected number of clusters, <c> = 0.00   Voxel size: 2.0 2.0 2.0 mm mm mm; (resel = 22.26 voxels)
FWEp: 22.819, FDRp: Inf, FWEc: Inf, FDRc: Inf