

DADAM AND MADAM multiple-time graphical analysis (Logan plot)

Plasma input

Multiple time graphical analysis was done with program logan 1.10.0. Tissue curves were not corrected for blood volume like in the compartmental model fits. Based on graphics of first fit, the start-time for the fit was set to be 9 min for DADAM and 21 min for MADAM.

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logan 1.10.0 (c) 2001-2004 by Turku PET Centre
Date:      2004-11-18 12:58:40
Study:     FRGU3
Data file:  FDtis.dft
Plasma file:  ..\frgu\dadam\result\FDplasma_pure_min.dft
Reference region:  cer All
Data range:  9 - 69 min (N=11) lsq=c
Vb:        0 %
Data was not weighted.
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Region		DV	Ic	r	DVR
ac	. All	1.0704e+01	-2.420e+01	0.9999	1.0801
	SD .	4.4284e-02	3.3759e-01	.	.
ang	. All	1.0297e+01	-2.552e+01	0.9999	1.0391
	SD .	5.0386e-02	3.9271e-01	.	.
cau	. All	1.1689e+01	-2.730e+01	0.9997	1.1795
	SD .	1.0438e-01	7.1411e-01	.	.
cer	. All	9.9099e+00	-2.435e+01	1.0000	1.0000
	SD .	2.2686e-02	1.8521e-01	.	.
dlp	. All	1.0004e+01	-2.342e+01	0.9997	1.0095
	SD .	8.4826e-02	6.8019e-01	.	.
gti	. All	1.1066e+01	-2.484e+01	0.9998	1.1167
	SD .	8.6827e-02	6.2618e-01	.	.
gtm	. All	1.0773e+01	-2.383e+01	0.9999	1.0871
	SD .	6.1846e-02	4.6238e-01	.	.
gts	. All	1.0113e+01	-2.154e+01	0.9999	1.0205
	SD .	6.0490e-02	4.9011e-01	.	.
ins	. All	1.1915e+01	-2.657e+01	0.9998	1.2024
	SD .	7.8644e-02	5.2595e-01	.	.
mfc	. All	9.7939e+00	-2.233e+01	1.0000	0.9883
	SD .	3.1047e-02	2.6041e-01	.	.
occ	. All	1.0220e+01	-2.357e+01	0.9997	1.0312
	SD .	9.5395e-02	7.4756e-01	.	.
pc	. All	1.1024e+01	-2.458e+01	0.9999	1.1124
	SD .	6.4827e-02	4.7292e-01	.	.
put	. All	1.2318e+01	-2.700e+01	0.9999	1.2429
	SD .	7.1037e-02	4.6246e-01	.	.
raphe	. All	0.0000e+00	0.0000e+00	0.0000	0.0000
smar	. All	1.0225e+01	-2.531e+01	0.9999	1.0318
	SD .	3.8759e-02	3.0432e-01	.	.
tha	. All	1.1895e+01	-3.028e+01	0.9998	1.2003
	SD .	8.7167e-02	5.8821e-01	.	.
wm	. All	1.1297e+01	-7.803e+01	0.9911	1.1400
	SD .	5.4701e-01	5.4139e+00	.	.
str	. All	1.2138e+01	-2.716e+01	0.9999	1.2249
	SD .	7.2091e-02	4.7585e-01	.	.
lpi	. All	1.0260e+01	-2.552e+01	0.9999	1.0353
	SD .	4.0959e-02	3.2011e-01	.	.
gt	. All	1.0657e+01	-2.339e+01	0.9998	1.0754
	SD .	7.1673e-02	5.4172e-01	.	.

logan 1.10.0 (c) 2001-2004 by Turku PET Centre
 Date: 2004-11-18 12:58:42
 Study: PAGH3
 Data file: PDtis.dft
 Plasma file: ..\pagh\dadam\result\PDplasma_pure_min.dft
 Reference region: cer All
 Data range: 9 - 69 min (N=11) lsq=c
 Vb: 0 %
 Data was not weighted.

Region		DV	Ic	r	DVR
ac	. All	8.1807	-1.972e+01	0.9994	1.0894
	SD . .	0.1033	1.0859e+00	.	.
ang	. All	7.1134	-1.973e+01	0.9996	0.9472
	SD . .	0.0736	8.9151e-01	.	.
cau	. All	8.8551	-2.396e+01	0.9997	1.1792
	SD . .	0.0841	7.9444e-01	.	.
cer	. All	7.5097	-1.898e+01	0.9995	1.0000
	SD . .	0.0815	9.4339e-01	.	.
dlp	. All	7.7357	-1.976e+01	0.9991	1.0301
	SD . .	0.1190	1.3000e+00	.	.
gti	. All	7.5430	-2.196e+01	0.9993	1.0044
	SD . .	0.0992	1.0921e+00	.	.
gtm	. All	8.1992	-2.051e+01	0.9995	1.0918
	SD . .	0.0941	9.7586e-01	.	.
gts	. All	8.4100	-2.179e+01	0.9995	1.1199
	SD . .	0.0997	9.9184e-01	.	.
ins	. All	9.0054	-2.210e+01	0.9994	1.1992
	SD . .	0.1078	9.9973e-01	.	.
mfc	. All	7.6952	-1.853e+01	0.9995	1.0247
	SD . .	0.0916	1.0416e+00	.	.
occ	. All	7.5592	-2.233e+01	0.9992	1.0066
	SD . .	0.1085	1.1858e+00	.	.
pc	. All	7.8108	-2.057e+01	0.9987	1.0401
	SD . .	0.1455	1.5449e+00	.	.
put	. All	8.7938	-2.591e+01	0.9998	1.1710
	SD . .	0.0603	5.6249e-01	.	.
raphe	. All	0.0000	0.0000e+00	0.0000	0.0000
smar	. All	7.5753	-2.032e+01	0.9992	1.0087
	SD . .	0.1079	1.2013e+00	.	.
tha	. All	9.8716	-2.298e+01	0.9996	1.3145
	SD . .	0.0981	8.2978e-01	.	.
wm	. All	7.3244	-5.724e+01	0.9839	0.9753
	SD . .	0.4789	6.1268e+00	.	.
str	. All	8.8242	-2.529e+01	0.9999	1.1750
	SD . .	0.0521	4.8664e-01	.	.
lpi	. All	7.3823	-2.011e+01	0.9994	0.9830
	SD . .	0.0933	1.0739e+00	.	.
gt	. All	8.0770	-2.124e+01	0.9995	1.0755
	SD . .	0.0941	9.8014e-01	.	.

logan 1.10.0 (c) 2001-2004 by Turku PET Centre
 Date: 2004-11-18 12:58:44
 Study: RE_FRGU1
 Data file: FMtis.dft
 Plasma file: ..\frgu\madam\result\FMplasma_pure_min.dft
 Reference region: cer All
 Data range: 21 - 93 min (N=12) lsq=c
 Vb: 0 %
 Data was not weighted.

Region		DV	Ic	r	DVR
ac	. All	8.9360e+00	-2.882e+01	0.9996	1.2643
	SD . .	8.8048e-02	8.7157e-01	.	.
ang	. All	7.1141e+00	-2.368e+01	0.9999	1.0065
	SD . .	3.3174e-02	4.1476e-01	.	.
cau	. All	1.3068e+01	-3.611e+01	0.9992	1.8489

cer	SD	.	.	1.7630e-01	1.2238e+00	.	.
		All	.	7.0679e+00	-2.356e+01	1.0000	1.0000
	SD	.	.	2.2225e-02	2.8000e-01	.	.
dlp	.	All	.	7.9406e+00	-2.448e+01	0.9999	1.1235
	SD	.	.	3.4459e-02	3.8403e-01	.	.
gti	.	All	.	7.5708e+00	-2.515e+01	0.9999	1.0711
	SD	.	.	2.6232e-02	3.0781e-01	.	.
gtm	.	All	.	8.1475e+00	-2.547e+01	0.9999	1.1528
	SD	.	.	3.8683e-02	4.2194e-01	.	.
gts	.	All	.	8.0706e+00	-2.426e+01	0.9999	1.1419
	SD	.	.	4.5952e-02	5.0473e-01	.	.
ins	.	All	.	9.8888e+00	-3.378e+01	0.9996	1.3991
	SD	.	.	9.7297e-02	8.8161e-01	.	.
mfc	.	All	.	7.7311e+00	-2.246e+01	0.9998	1.0938
	SD	.	.	5.1838e-02	6.0412e-01	.	.
occ	.	All	.	8.0029e+00	-2.364e+01	1.0000	1.1323
	SD	.	.	2.5507e-02	2.8513e-01	.	.
pc	.	All	.	8.2678e+00	-2.869e+01	0.9993	1.1698
	SD	.	.	1.0524e-01	1.1270e+00	.	.
put	.	All	.	1.2858e+01	-3.694e+01	0.9995	1.8192
	SD	.	.	1.4234e-01	1.0098e+00	.	.
raphe	.	All	.	2.2790e+01	-8.025e+01	0.9836	3.2245
	SD	.	.	1.4121e+00	7.6051e+00	.	.
smar	.	All	.	7.0572e+00	-2.342e+01	0.9999	0.9985
	SD	.	.	3.4950e-02	4.4114e-01	.	.
tha	.	All	.	1.4118e+01	-4.438e+01	0.9995	1.9975
	SD	.	.	1.4660e-01	9.8720e-01	.	.
wm	.	All	.	6.0789e+00	-6.628e+01	0.9916	0.8601
	SD	.	.	2.6833e-01	4.8899e+00	.	.
str	.	All	.	1.2939e+01	-3.678e+01	0.9995	1.8307
	SD	.	.	1.4377e-01	1.0124e+00	.	.
lpi	.	All	.	7.0905e+00	-2.371e+01	0.9999	1.0032
	SD	.	.	2.4476e-02	3.0701e-01	.	.
gt	.	All	.	7.9637e+00	-2.502e+01	0.9999	1.1267
	SD	.	.	3.0095e-02	3.3540e-01	.	.

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Date: 2004-11-18 12:58:46

Study: RE_PAGH1

Data file: PMtis.dft

Plasma file: ..\pagh\madam\result\PMplasma_pure_min.dft

Reference region: cer All

Data range: 21 - 93 min (N=12) lsq=c

Vb: 0 %

Data was not weighted.

Region		DV	Ic	r	DVR		
ac	.	All	.	1.0894e+01	-3.600e+01	0.9994	1.3734
	SD	.	.	1.2224e-01	1.1293e+00	.	.
ang	.	All	.	8.2894e+00	-2.506e+01	0.9997	1.0450
	SD	.	.	6.8138e-02	8.4027e-01	.	.
cau	.	All	.	1.4964e+01	-4.172e+01	0.9995	1.8865
	SD	.	.	1.5182e-01	1.0341e+00	.	.
cer	.	All	.	7.9321e+00	-2.372e+01	0.9999	1.0000
	SD	.	.	2.9719e-02	3.8981e-01	.	.
dlp	.	All	.	8.7682e+00	-2.603e+01	0.9997	1.1054
	SD	.	.	6.8215e-02	7.9010e-01	.	.
gti	.	All	.	8.8151e+00	-2.901e+01	0.9999	1.1113
	SD	.	.	4.9874e-02	5.7188e-01	.	.
gtm	.	All	.	8.5896e+00	-2.636e+01	0.9999	1.0829
	SD	.	.	4.8409e-02	5.7402e-01	.	.
gts	.	All	.	9.2185e+00	-2.909e+01	0.9999	1.1622
	SD	.	.	5.1172e-02	5.6144e-01	.	.
ins	.	All	.	1.0958e+01	-3.373e+01	0.9999	1.3815
	SD	.	.	6.0320e-02	5.5285e-01	.	.

mfc	.	All	9.6953e+00	-2.731e+01	0.9996	1.2223
SD	.	.	8.8666e-02	9.2590e-01	.	.
occ	.	All	8.6839e+00	-3.003e+01	0.9999	1.0948
SD	.	.	4.0030e-02	4.6513e-01	.	.
pc	.	All	9.7609e+00	-2.832e+01	0.9994	1.2306
SD	.	.	1.1560e-01	1.1910e+00	.	.
put	.	All	1.6155e+01	-4.493e+01	0.9998	2.0367
SD	.	.	9.9025e-02	6.3576e-01	.	.
raphe	.	All	2.3803e+01	-9.271e+01	0.9817	3.0008
SD	.	.	1.5596e+00	9.1332e+00	.	.
smar	.	All	8.2951e+00	-2.475e+01	0.9999	1.0458
SD	.	.	4.5062e-02	5.6093e-01	.	.
tha	.	All	1.6342e+01	-4.977e+01	0.9990	2.0603
SD	.	.	2.5284e-01	1.6419e+00	.	.
wm	.	All	7.8388e+00	-8.012e+01	0.9657	0.9882
SD	.	.	7.1196e-01	1.1543e+01	.	.
str	.	All	1.5806e+01	-4.401e+01	0.9998	1.9926
SD	.	.	9.8363e-02	6.4217e-01	.	.
lpi	.	All	8.2770e+00	-2.486e+01	0.9999	1.0435
SD	.	.	3.8351e-02	4.7723e-01	.	.
gt	.	All	8.8826e+00	-2.819e+01	0.9999	1.1198
SD	.	.	3.3841e-02	3.8617e-01	.	.

Reference input

In order to reach the linearity earlier, k'_2 was estimated from plasma input Logan plot. Mean of inverse values of negative intercepts can be used as an estimate for k'_2 . These values calculated from the above are 0.04107, 0.05269, 0.04244, 0.04216 and the mean value is 0.0446. In the MADAM study linearity was reached considerably earlier when k'_2 correction was used - even around 10 min for instead of 20. For DADAM study the difference wasn't that clear.

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logan 1.10.0 (c) 2001-2004 by Turku PET Centre
Date:      2004-11-18 14:03:39
Study:     FRGU3
Data file:  FDTis.dft
Reference region:  cer
Data range:  9 - 69 min (N=11) lsq=c refk2=0.0446
Vb:        0 %
Data was not weighted.
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Region		DVR	Ic	r	
ac	.	All	1.0800	-2.227e+01	0.9999
SD	.	.	0.0051	3.7933e-01	.
ang	.	All	1.0381	-2.351e+01	0.9999
SD	.	.	0.0039	2.9689e-01	.
cau	.	All	1.1769	-2.517e+01	0.9998
SD	.	.	0.0093	6.1816e-01	.
dlp	.	All	1.0103	-2.156e+01	0.9998
SD	.	.	0.0065	5.0875e-01	.
gti	.	All	1.1162	-2.288e+01	0.9999
SD	.	.	0.0068	4.7842e-01	.
gtm	.	All	1.0876	-2.194e+01	0.9999
SD	.	.	0.0046	3.3151e-01	.
gts	.	All	1.0226	-1.978e+01	0.9999
SD	.	.	0.0044	3.4352e-01	.
ins	.	All	1.2003	-2.449e+01	0.9999
SD	.	.	0.0057	3.7148e-01	.
mfc	.	All	0.9897	-2.052e+01	1.0000
SD	.	.	0.0025	2.0588e-01	.
occ	.	All	1.0318	-2.168e+01	0.9998
SD	.	.	0.0076	5.7391e-01	.
pc	.	All	1.1122	-2.263e+01	0.9999
SD	.	.	0.0048	3.4060e-01	.
put	.	All	1.2406	-2.491e+01	0.9999

SD	.	.	0.0065	4.1193e-01	.
raphe	.	All	0.0000	0.0000e+00	0.0000
smar	.	All	1.0309	-2.330e+01	1.0000
SD	.	.	0.0029	2.1804e-01	.
tha	.	All	1.1945	-2.792e+01	0.9997
SD	.	.	0.0097	6.3276e-01	.
wm	.	All	1.0857	-6.959e+01	0.9922
SD	.	.	0.0490	4.6689e+00	.
str	.	All	1.2224	-2.505e+01	0.9999
SD	.	.	0.0065	4.1502e-01	.
lpi	.	All	1.0343	-2.350e+01	1.0000
SD	.	.	0.0028	2.0948e-01	.
gt	.	All	1.0762	-2.153e+01	0.9999
SD	.	.	0.0054	3.9419e-01	.

logan 1.10.0 (c) 2001-2004 by Turku PET Centre
Date: 2004-11-18 14:03:41
Study: PAGH3
Data file: PDtis.dft
Reference region: cer
Data range: 9 - 69 min (N=11) lsq=c refk2=0.0446
Vb: 0 %
Data was not weighted.

Region		DVR	Ic	r	
ac	.	All	1.0902	-2.323e+01	0.9999
SD	.	.	0.0062	5.0627e-01	.
ang	.	All	0.9468	-2.313e+01	0.9999
SD	.	.	0.0038	3.6087e-01	.
cau	.	All	1.1839	-2.788e+01	0.9994
SD	.	.	0.0148	1.0929e+00	.
dlp	.	All	1.0356	-2.360e+01	0.9999
SD	.	.	0.0059	5.0044e-01	.
gti	.	All	1.0127	-2.608e+01	0.9999
SD	.	.	0.0042	3.6176e-01	.
gtm	.	All	1.0946	-2.417e+01	1.0000
SD	.	.	0.0035	2.8627e-01	.
gts	.	All	1.1274	-2.580e+01	1.0000
SD	.	.	0.0025	1.9077e-01	.
ins	.	All	1.2059	-2.602e+01	0.9999
SD	.	.	0.0046	3.3176e-01	.
mfc	.	All	1.0233	-2.185e+01	0.9999
SD	.	.	0.0045	4.0005e-01	.
occ	.	All	1.0165	-2.658e+01	1.0000
SD	.	.	0.0029	2.4944e-01	.
pc	.	All	1.0500	-2.473e+01	0.9997
SD	.	.	0.0093	7.6881e-01	.
put	.	All	1.1843	-3.043e+01	0.9992
SD	.	.	0.0167	1.2124e+00	.
raphe	.	All	0.0000	0.0000e+00	0.0000
smar	.	All	1.0148	-2.423e+01	0.9999
SD	.	.	0.0046	3.9432e-01	.
tha	.	All	1.3227	-2.701e+01	0.9997
SD	.	.	0.0112	7.3728e-01	.
wm	.	All	1.1402	-7.890e+01	0.9907
SD	.	.	0.0565	5.6964e+00	.
str	.	All	1.1860	-2.963e+01	0.9995
SD	.	.	0.0137	1.0008e+00	.
lpi	.	All	0.9865	-2.382e+01	1.0000
SD	.	.	0.0029	2.6099e-01	.
gt	.	All	1.0810	-2.511e+01	1.0000
SD	.	.	0.0022	1.7453e-01	.

logan 1.10.0 (c) 2001-2004 by Turku PET Centre
Date: 2004-11-18 14:03:43
Study: RE_FRGU1

Data file: FMTis.dft
 Reference region: cer
 Data range: 21 - 93 min (N=12) lsq=c refk2=0.0446
 Vb: 0 %
 Data was not weighted.

Region		DVR	Ic	r
ac	. All	1.2625	-2.753e+01	0.9997
	SD . .	0.0097	6.6925e-01	.
ang	. All	1.0064	-2.254e+01	0.9999
	SD . .	0.0043	3.7116e-01	.
cau	. All	1.8413	-3.452e+01	0.9994
	SD . .	0.0208	1.0071e+00	.
dlp	. All	1.1230	-2.330e+01	0.9999
	SD . .	0.0041	3.1806e-01	.
gti	. All	1.0703	-2.394e+01	0.9999
	SD . .	0.0037	3.0284e-01	.
gtm	. All	1.1519	-2.426e+01	0.9999
	SD . .	0.0047	3.5862e-01	.
gts	. All	1.1413	-2.307e+01	0.9999
	SD . .	0.0063	4.8397e-01	.
ins	. All	1.3927	-3.218e+01	0.9996
	SD . .	0.0131	8.2936e-01	.
mfc	. All	1.0940	-2.134e+01	0.9998
	SD . .	0.0077	6.3075e-01	.
occ	. All	1.1317	-2.247e+01	0.9999
	SD . .	0.0050	3.9197e-01	.
pc	. All	1.1658	-2.724e+01	0.9991
	SD . .	0.0165	1.2325e+00	.
put	. All	1.8094	-3.523e+01	0.9995
	SD . .	0.0201	9.9540e-01	.
raphe	. All	3.1400	-7.526e+01	0.9852
	SD . .	0.1849	6.9393e+00	.
smar	. All	0.9986	-2.230e+01	0.9999
	SD . .	0.0040	3.4933e-01	.
tha	. All	1.9800	-4.225e+01	0.9996
	SD . .	0.0199	9.3403e-01	.
wm	. All	0.8419	-6.238e+01	0.9915
	SD . .	0.0373	4.7318e+00	.
str	. All	1.8214	-3.511e+01	0.9995
	SD . .	0.0189	9.3041e-01	.
lpi	. All	1.0031	-2.257e+01	1.0000
	SD . .	0.0026	2.3004e-01	.
gt	. All	1.1259	-2.381e+01	1.0000
	SD . .	0.0038	2.9567e-01	.

logan 1.10.0 (c) 2001-2004 by Turku PET Centre
 Date: 2004-11-18 14:03:46
 Study: RE_PAGH1
 Data file: PMtis.dft
 Reference region: cer
 Data range: 21 - 93 min (N=12) lsq=c refk2=0.0446
 Vb: 0 %
 Data was not weighted.

Region		DVR	Ic	r
ac	. All	1.3695	-3.438e+01	0.9997
	SD . .	0.0120	8.6651e-01	.
ang	. All	1.0449	-2.375e+01	0.9998
	SD . .	0.0065	6.2961e-01	.
cau	. All	1.8776	-3.988e+01	0.9997
	SD . .	0.0164	8.7539e-01	.
dlp	. All	1.1050	-2.471e+01	0.9998
	SD . .	0.0068	6.1770e-01	.
gti	. All	1.1095	-2.756e+01	0.9999
	SD . .	0.0052	4.6410e-01	.
gtm	. All	1.0822	-2.501e+01	0.9999

	SD	.	.	0.0046	4.2300e-01	.
gts	.	All	.	1.1604	-2.765e+01	0.9999
	SD	.	.	0.0058	5.0274e-01	.
ins	.	All	.	1.3778	-3.216e+01	0.9999
	SD	.	.	0.0058	4.1772e-01	.
mfc	.	All	.	1.2213	-2.595e+01	0.9997
	SD	.	.	0.0101	8.2683e-01	.
occ	.	All	.	1.0927	-2.855e+01	0.9999
	SD	.	.	0.0038	3.4232e-01	.
pc	.	All	.	1.2297	-2.695e+01	0.9996
	SD	.	.	0.0115	9.3133e-01	.
put	.	All	.	2.0240	-4.290e+01	0.9998
	SD	.	.	0.0132	6.6496e-01	.
raphe	.	All	.	2.9443	-8.809e+01	0.9833
	SD	.	.	0.1840	8.4255e+00	.
smar	.	All	.	1.0452	-2.341e+01	0.9999
	SD	.	.	0.0051	4.9502e-01	.
tha	.	All	.	2.0455	-4.756e+01	0.9990
	SD	.	.	0.0303	1.5386e+00	.
wm	.	All	.	0.9767	-7.681e+01	0.9693
	SD	.	.	0.0837	1.0610e+01	.
str	.	All	.	1.9811	-4.204e+01	0.9998
	SD	.	.	0.0119	6.0722e-01	.
lpi	.	All	.	1.0430	-2.353e+01	0.9999
	SD	.	.	0.0036	3.4727e-01	.
gt	.	All	.	1.1184	-2.678e+01	1.0000
	SD	.	.	0.0027	2.4102e-01	.