

# P11 - tumor voxel 12;12

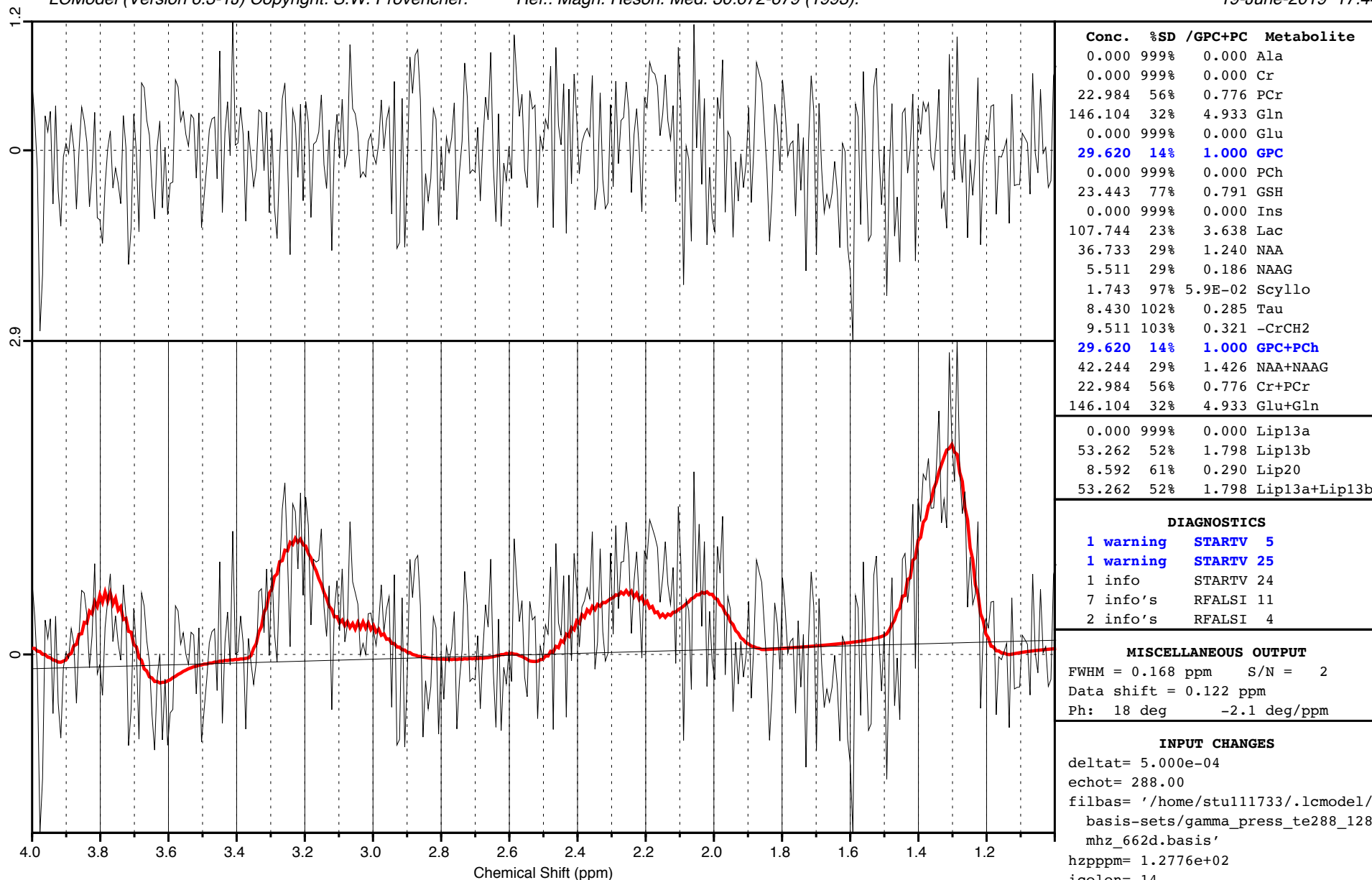
Row#12 Col#12 MR Hirn (2018.11.14 13:31:04) Subject 13 8.00e-01 mL, TE/TR/NS=288/1500/1 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

Ref.: Magn. Reson. Med. 30:672-679 (1993).

19-June-2019 17:44



Conc.	%SD	/GPC+PC	Metabolite
0.000	999%	0.000	Ala
0.000	999%	0.000	Cr
22.984	56%	0.776	PCr
146.104	32%	4.933	Gln
0.000	999%	0.000	Glu
29.620	14%	1.000	GPC
0.000	999%	0.000	PCh
23.443	77%	0.791	GSH
0.000	999%	0.000	Ins
107.744	23%	3.638	Lac
36.733	29%	1.240	NAA
5.511	29%	0.186	NAAG
1.743	97%	5.9E-02	Scyllo
8.430	102%	0.285	Tau
9.511	103%	0.321	-CrCH2
29.620	14%	1.000	GPC+PCh
42.244	29%	1.426	NAA+NAAG
22.984	56%	0.776	Cr+PCr
146.104	32%	4.933	Glu+Gln

0.000	999%	0.000	Lip13a
53.262	52%	1.798	Lip13b
8.592	61%	0.290	Lip20
53.262	52%	1.798	Lip13a+Lip13b

## DIAGNOSTICS

1 warning STARTV 5  
1 warning STARTV 25  
1 info STARTV 24  
7 info's RFALSI 11  
2 info's RFALSI 4

## MISCELLANEOUS OUTPUT

FWHM = 0.168 ppm S/N = 2  
Data shift = 0.122 ppm  
Ph: 18 deg -2.1 deg/ppm

## INPUT CHANGES

deltat= 5.000e-04  
echot= 288.00  
filbas= '/home/stu111733/.lcmodel/  
basis-sets/gamma\_press\_te288\_128  
mh2\_662d.basis'  
hzpppm= 1.2776e+02  
icolen= 14  
icolst= 10

Row#12 Col#12 MR Hirn (2018.11.14 13:31:04) Subject 13 8.00e-01 mL, TE/TR/NS=288/1500/1 (s2DSI\_TE288 TR1500)

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<table><tr><td>Conc.</td><td>%SD</td><td>/GPC+PC</td><td>Metabolite</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>Ala</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>Cr</td></tr><tr><td>22.984</td><td>56%</td><td>0.776</td><td>PCr</td></tr><tr><td>146.104</td><td>32%</td><td>4.933</td><td>Gln</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>Glu</td></tr><tr><td>29.620</td><td>14%</td><td>1.000</td><td>GPC</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>PCh</td></tr><tr><td>23.443</td><td>77%</td><td>0.791</td><td>GSH</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>Ins</td></tr><tr><td>107.744</td><td>23%</td><td>3.638</td><td>Lac</td></tr><tr><td>36.733</td><td>29%</td><td>1.240</td><td>NAA</td></tr><tr><td>5.511</td><td>29%</td><td>0.186</td><td>NAAG</td></tr><tr><td>1.743</td><td>97%</td><td>5.9E-02</td><td>Scyllo</td></tr><tr><td>8.430</td><td>102%</td><td>0.285</td><td>Tau</td></tr><tr><td>9.511</td><td>103%</td><td>0.321</td><td>-CrCH2</td></tr><tr><td>29.620</td><td>14%</td><td>1.000</td><td>GPC+PCh</td></tr><tr><td>42.244</td><td>29%</td><td>1.426</td><td>NAA+NAAG</td></tr><tr><td>22.984</td><td>56%</td><td>0.776</td><td>Cr+PCr</td></tr><tr><td>146.104</td><td>32%</td><td>4.933</td><td>Glu+Gln</td></tr></table>	Conc.	%SD	/GPC+PC	Metabolite	0.000	999%	0.000	Ala	0.000	999%	0.000	Cr	22.984	56%	0.776	PCr	146.104	32%	4.933	Gln	0.000	999%	0.000	Glu	29.620	14%	1.000	GPC	0.000	999%	0.000	PCh	23.443	77%	0.791	GSH	0.000	999%	0.000	Ins	107.744	23%	3.638	Lac	36.733	29%	1.240	NAA	5.511	29%	0.186	NAAG	1.743	97%	5.9E-02	Scyllo	8.430	102%	0.285	Tau	9.511	103%	0.321	-CrCH2	29.620	14%	1.000	GPC+PCh	42.244	29%	1.426	NAA+NAAG	22.984	56%	0.776	Cr+PCr	146.104	32%	4.933	Glu+Gln	<table><tr><td>icolst= 10</td></tr><tr><td>irowen= 13</td></tr><tr><td>irowst= 9</td></tr><tr><td>islice= 1</td></tr><tr><td>lps= 8</td></tr><tr><td>ltable= 7</td></tr><tr><td>ndcols= 16</td></tr><tr><td>ndrows= 20</td></tr><tr><td>ndslic= 1</td></tr><tr><td>nunfil= 1024</td></tr><tr><td>ppmend= 1.0</td></tr><tr><td>ppmst= 4.0</td></tr><tr><td>savdir= '/home/data/Studies/GBM_Spektro/</td></tr><tr><td>results/</td></tr><tr><td>s13/'</td></tr><tr><td>sptype= 'tumor'</td></tr><tr><td>srcaswspéctrométrie_2d_spectroscopie/GBM_Spektroscopie/</td></tr><tr><td>s13</td></tr></table>	icolst= 10	irowen= 13	irowst= 9	islice= 1	lps= 8	ltable= 7	ndcols= 16	ndrows= 20	ndslic= 1	nunfil= 1024	ppmend= 1.0	ppmst= 4.0	savdir= '/home/data/Studies/GBM_Spektro/	results/	s13/'	sptype= 'tumor'	srcaswspéctrométrie_2d_spectroscopie/GBM_Spektroscopie/	s13
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# P11 - edema voxel 10;11

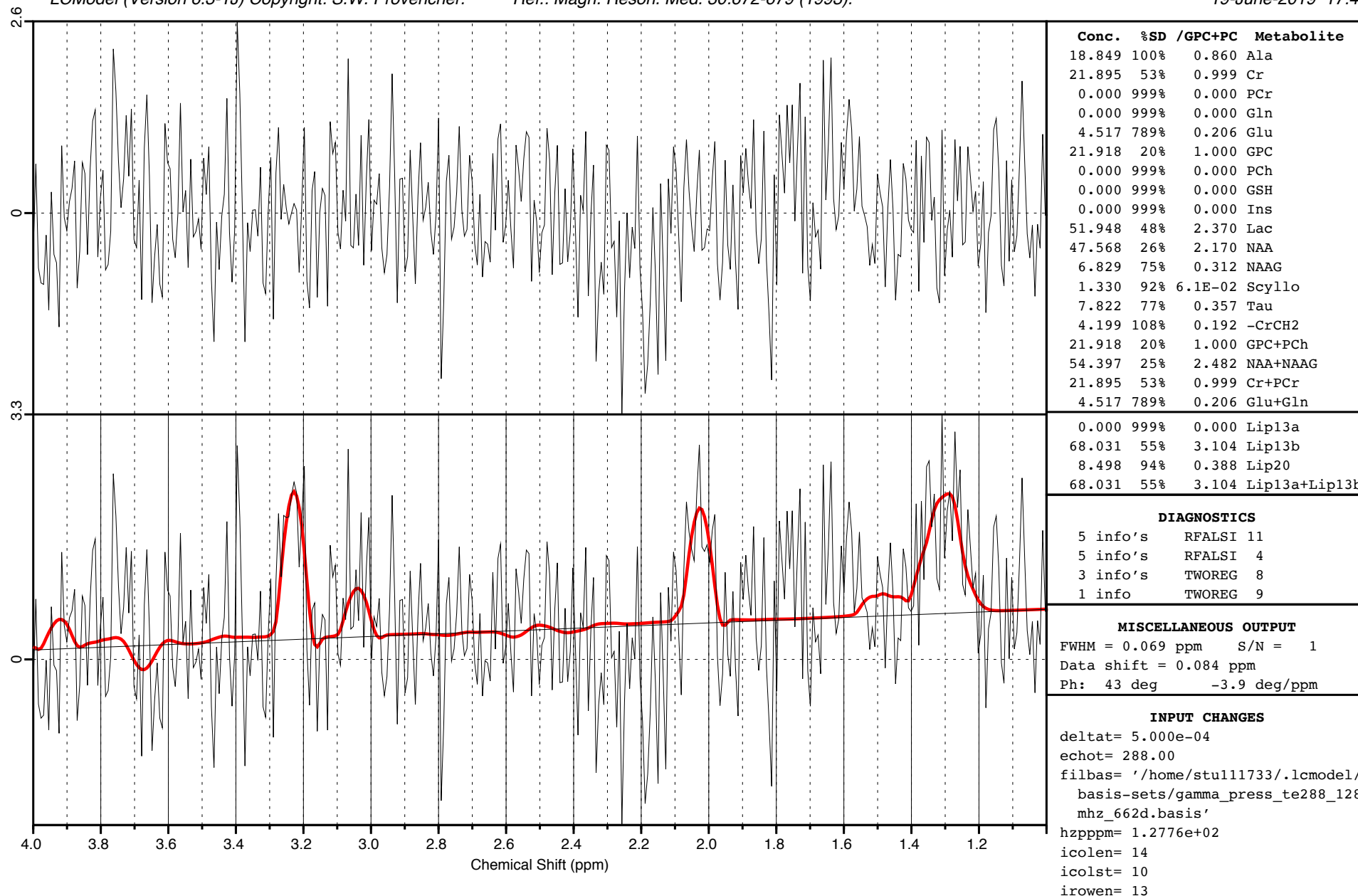
Row#10 Col#11 MR Hirn (2018.11.14 13:31:04) Subject 13 8.00e-01 mL, TE/TR/NS=288/1500/1 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

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19-June-2019 17:44



# P11 - edema voxel 10;11

Row#10 Col#11 MR Hirn (2018.11.14 13:31:04) Subject 13 8.00e-01 mL, TE/TR/NS=288/1500/1 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

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<b>Conc. %SD /GPC+PC Metabolite</b> 18.849 100% 0.860 Ala 21.895 53% 0.999 Cr 0.000 999% 0.000 PCr 0.000 999% 0.000 Gln 4.517 789% 0.206 Glu 21.918 20% 1.000 GPC 0.000 999% 0.000 PCh 0.000 999% 0.000 GSH 0.000 999% 0.000 Ins 51.948 48% 2.370 Lac 47.568 26% 2.170 NAA 6.829 75% 0.312 NAAG 1.330 92% 6.1E-02 Scyllo 7.822 77% 0.357 Tau 4.199 108% 0.192 -CrCH2 21.918 20% 1.000 GPC+PCh 54.397 25% 2.482 NAA+NAAG 21.895 53% 0.999 Cr+PCr 4.517 789% 0.206 Glu+Gln  0.000 999% 0.000 Lip13a 68.031 55% 3.104 Lip13b 8.498 94% 0.388 Lip20 68.031 55% 3.104 Lip13a+Lip13b	irowen= 13 irowst= 9 islice= 1 lps= 8 ltable= 7 ndcols= 16 ndrows= 20 ndslic= 1 nunfil= 1024 ppmend= 1.0 ppmst= 4.0 savdir= '/home/data/Studies/GBM_Spektro/ results/ s13/' sptype= 'tumor' srcname= 'home12dapecstod1e3d1_raw_act.SDAT'
<b>DIAGNOSTICS</b> 5 info's RFALSI 11 5 info's RFALSI 4 3 info's TWOREG 8 1 info TWOREG 9	
<b>MISCELLANEOUS OUTPUT</b> FWHM = 0.069 ppm S/N = 1 Data shift = 0.084 ppm Ph: 43 deg -3.9 deg/ppm	
<b>INPUT CHANGES</b> deltat= 5.000e-04 echot= 288.00 filbas= '/home/stu111733/.lcmmodel/basis-sets/gam ma_press_te288_128mhz_662d.basis' hzpppm= 1.2776e+02 icolen= 14 icolst= 10	

# P12 - tumor voxel 19;8

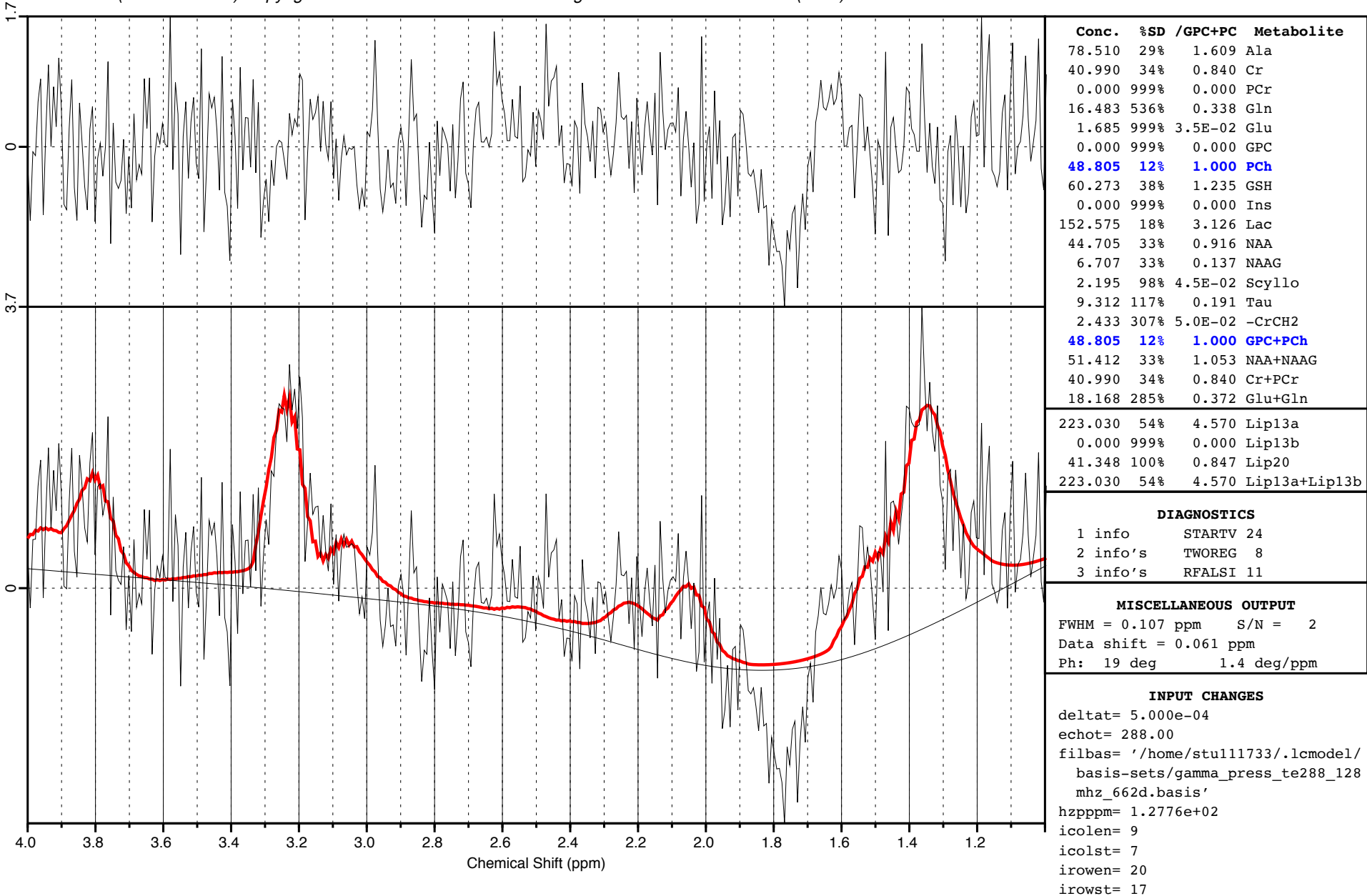
Row#19 Col#8 MR Spektroskopie (2018.11.20 09:44:02) Subject 01 8.00e-01 mL, TE/TR/NS=288/1500/1 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

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13-June-2019 09:33



# P12 - tumor voxel 19;8

Row#19 Col#8 MR Spektroskopie (2018.11.20 09:44:02) Subject 01 8.00e-01 mL, TE/TR/NS=288/1500/1 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

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13-June-2019 09:33

<table><tr><th colspan="4">Conc. %SD /GPC+PC Metabolite</th></tr><tr><td>78.510</td><td>29%</td><td>1.609</td><td>Ala</td></tr><tr><td>40.990</td><td>34%</td><td>0.840</td><td>Cr</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>PCr</td></tr><tr><td>16.483</td><td>536%</td><td>0.338</td><td>Gln</td></tr><tr><td>1.685</td><td>999%</td><td>3.5E-02</td><td>Glu</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>GPC</td></tr><tr><td>48.805</td><td>12%</td><td>1.000</td><td>PCh</td></tr><tr><td>60.273</td><td>38%</td><td>1.235</td><td>GSH</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>Ins</td></tr><tr><td>152.575</td><td>18%</td><td>3.126</td><td>Lac</td></tr><tr><td>44.705</td><td>33%</td><td>0.916</td><td>NAA</td></tr><tr><td>6.707</td><td>33%</td><td>0.137</td><td>NAAG</td></tr><tr><td>2.195</td><td>98%</td><td>4.5E-02</td><td>Scyllo</td></tr><tr><td>9.312</td><td>117%</td><td>0.191</td><td>Tau</td></tr><tr><td>2.433</td><td>307%</td><td>5.0E-02</td><td>-CrCH2</td></tr><tr><td>48.805</td><td>12%</td><td>1.000</td><td>GPC+PCh</td></tr><tr><td>51.412</td><td>33%</td><td>1.053</td><td>NAA+NAAG</td></tr><tr><td>40.990</td><td>34%</td><td>0.840</td><td>Cr+PCr</td></tr><tr><td>18.168</td><td>285%</td><td>0.372</td><td>Glu+Gln</td></tr></table>	Conc. %SD /GPC+PC Metabolite				78.510	29%	1.609	Ala	40.990	34%	0.840	Cr	0.000	999%	0.000	PCr	16.483	536%	0.338	Gln	1.685	999%	3.5E-02	Glu	0.000	999%	0.000	GPC	48.805	12%	1.000	PCh	60.273	38%	1.235	GSH	0.000	999%	0.000	Ins	152.575	18%	3.126	Lac	44.705	33%	0.916	NAA	6.707	33%	0.137	NAAG	2.195	98%	4.5E-02	Scyllo	9.312	117%	0.191	Tau	2.433	307%	5.0E-02	-CrCH2	48.805	12%	1.000	GPC+PCh	51.412	33%	1.053	NAA+NAAG	40.990	34%	0.840	Cr+PCr	18.168	285%	0.372	Glu+Gln	<table><tr><td>irowst= 17</td></tr><tr><td>islice= 1</td></tr><tr><td>lps= 8</td></tr><tr><td>ltable= 7</td></tr><tr><td>ndcols= 16</td></tr><tr><td>ndrows= 20</td></tr><tr><td>ndslic= 1</td></tr><tr><td>nunfil= 1024</td></tr><tr><td>ppmend= 1.0</td></tr><tr><td>ppmst= 4.0</td></tr><tr><td>savdir= '/home/data/Studies/GBM_Spektro/</td></tr><tr><td>results/s01/'</td></tr><tr><td>sptype= 'tumor'</td></tr><tr><td>srcraw= '/home/data/Studies/GBM_Spektro/data/</td></tr><tr><td>s01/DIEX_5_1_raw_act.SDAT'</td></tr></table>	irowst= 17	islice= 1	lps= 8	ltable= 7	ndcols= 16	ndrows= 20	ndslic= 1	nunfil= 1024	ppmend= 1.0	ppmst= 4.0	savdir= '/home/data/Studies/GBM_Spektro/	results/s01/'	sptype= 'tumor'	srcraw= '/home/data/Studies/GBM_Spektro/data/	s01/DIEX_5_1_raw_act.SDAT'
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P12 - edema  
voxel 19;10

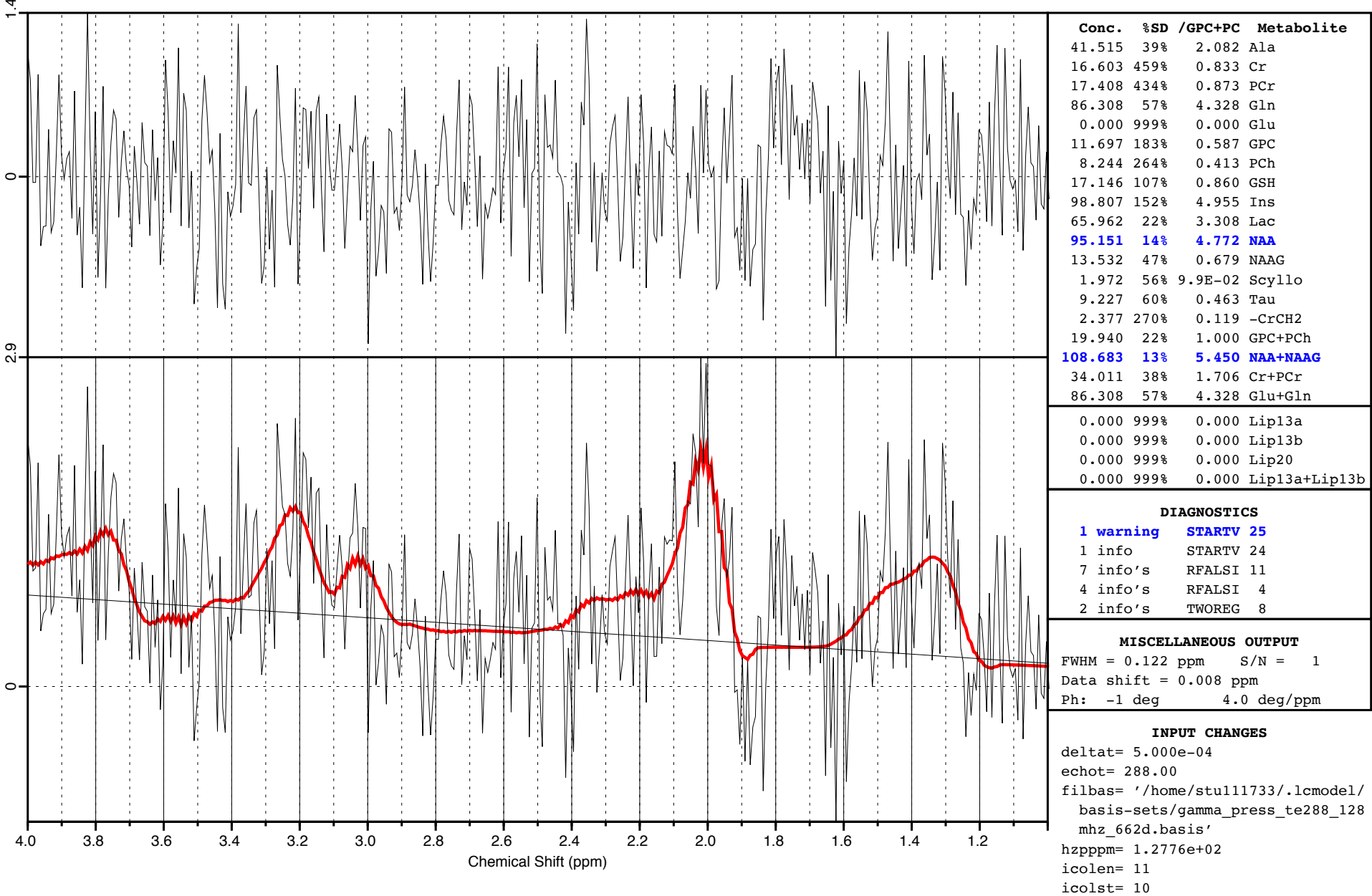
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Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

Ref.: Magn. Reson. Med. 30:672-679 (1993).

26-November-2019 17:23



Row#19 Col#10 MR Spektroskopie (2018.11.20 09:44:02) Subject 01 8.00e-01 mL, TE/TR/NS=288/1500/1 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

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Ref.: *Magn. Reson. Med. 30:672-679 (1993).*

26-November-2019 17:23

<div><div><div><div><div>Conc.</div><div>%SD</div><div>/GPC+PC</div><div>Metabolite</div></div><div>41.51539%2.082Ala</div><div>16.603459%0.833Cr</div><div>17.408434%0.873PCr</div><div>86.30857%4.328Gln</div><div>0.000999%0.000Glu</div><div>11.697183%0.587GPC</div><div>8.244264%0.413PCh</div><div>17.146107%0.860GSH</div><div>98.807152%4.955Ins</div><div>65.96222%3.308Lac</div><div>95.15114%4.772NAA</div><div>13.53247%0.679NAAG</div><div>1.97256%9.9E-02Scyllo</div><div>9.22760%0.463Tau</div><div>2.377270%0.119-CrCH2</div><div>19.94022%1.000GPC+PCh</div><div>108.68313%5.450NAA+NAAG</div><div>34.01138%1.706Cr+PCr</div><div>86.30857%4.328Glu+Gln</div></div><div><div>0.000999%0.000Lip13a</div><div>0.000999%0.000Lip13b</div><div>0.000999%0.000Lip20</div><div>0.000999%0.000Lip13a+Lip13b</div></div><div><div>DIAGNOSTICS</div><div>1 warningSTARTV 25</div><div>1 infoSTARTV 24</div><div>7 info'sRFALSI 11</div><div>4 info'sRFALSI 4</div><div>2 info'sTWOREG 8</div></div><div><div>MISCELLANEOUS OUTPUT</div><div>FWHM = 0.122 ppmS/N = 1</div><div>Data shift = 0.008 ppm</div><div>Ph: -1 deg4.0 deg/ppm</div></div><div><div>INPUT CHANGES</div><div>deltat= 5.000e-04</div><div>echot= 288.00</div><div>filbas= '/home/stu111733/.lcmodel/basis-sets/gam ma_press_te288_128mhz_662d.basis'</div><div>hzpppm= 1.2776e+02</div><div>icolen= 11</div></div></div></div>	<div><div>icolst= 10</div><div>irowen= 20</div><div>irowst= 17</div><div>islice= 1</div><div>lps= 8</div><div>ltable= 7</div><div>ndcols= 16</div><div>ndrows= 20</div><div>ndslic= 1</div><div>nunfil= 1024</div><div>ppmend= 1.0</div><div>ppmst= 4.0</div><div>savdir= '/home/stu111733/.lcmodel/saved/MR_Spekt roskopie/s01/2018.11.20_09:44:02/' sptype= 'tumor'</div><div>srcraw= '/home/data/Studies/GBM_Spektro/data/s01 /DBIEX_5_1_raw_act.SDAT'</div></div>
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P15 - tumor  
voxel 10;4

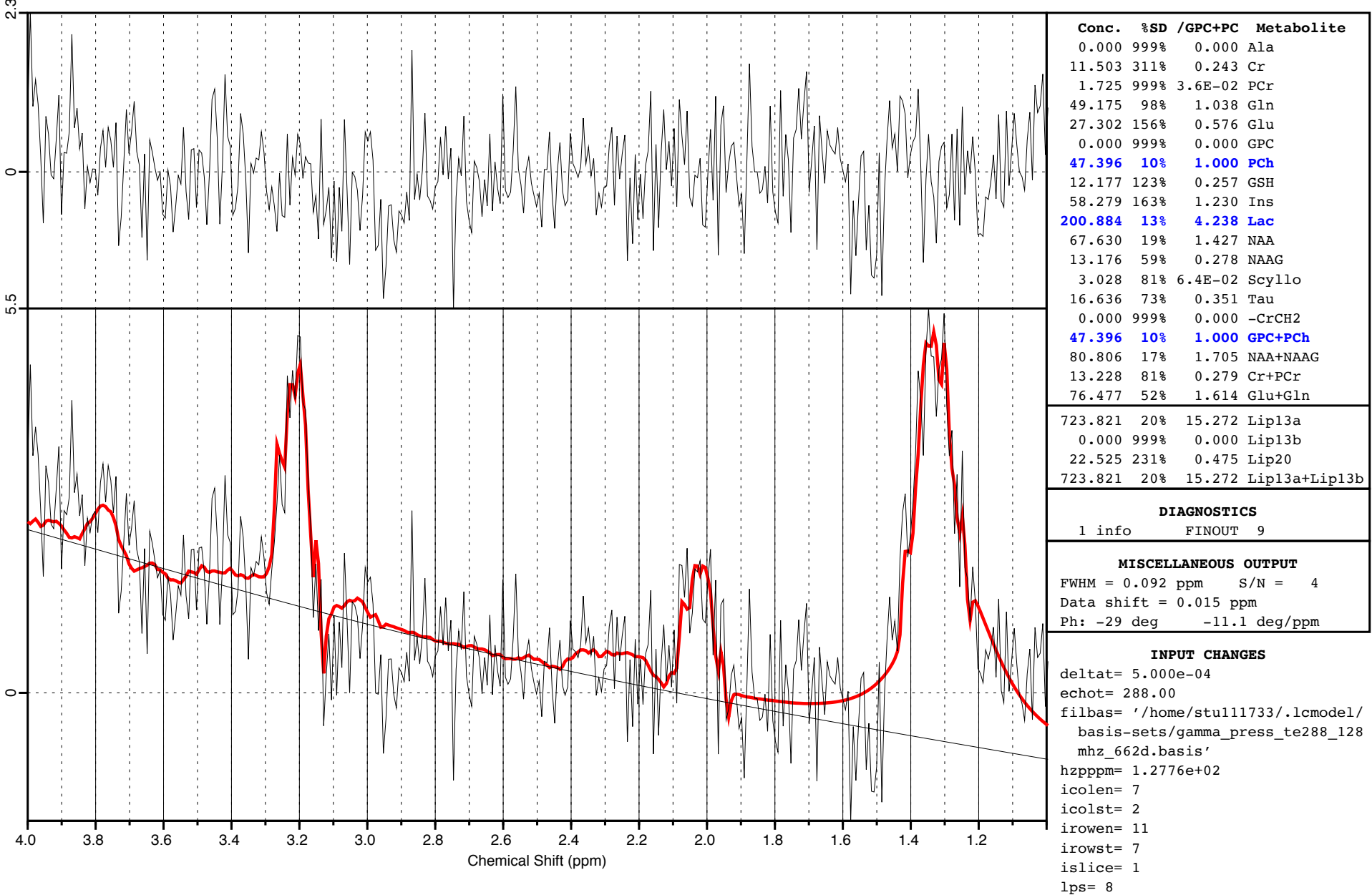
Row#10 Col#4 MR Hirn (2019.01.04 14:00:10) Subject 06 6.30e-01 mL, TE/TR/NS=288/1500/4 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

Ref.: Magn. Reson. Med. 30:672-679 (1993).

13-June-2019 10:47



Row#10 Col#4 MR Hirn (2019.01.04 14:00:10) Subject 06 6.30e-01 mL, TE/TR/NS=288/1500/4 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.      Ref.: Magn. Reson. Med. 30:672-679 (1993).

13-June-2019 10:47

<div><div><div><div><div>Conc.</div><div>%SD</div><div>/GPC+PC</div><div>Metabolite</div></div><div>0.000999%0.000Ala</div><div>11.503311%0.243Cr</div><div>1.725999%3.6E-02PCr</div><div>49.17598%1.038Gln</div><div>27.302156%0.576Glu</div><div>0.000999%0.000GPC</div><div>47.39610%1.000PCh</div><div>12.177123%0.257GSH</div><div>58.279163%1.230Ins</div><div>200.88413%4.238Lac</div><div>67.63019%1.427NAA</div><div>13.17659%0.278NAAG</div><div>3.02881%6.4E-02Scyllo</div><div>16.63673%0.351Tau</div><div>0.000999%0.000-CrCH2</div><div>47.39610%1.000GPC+PCh</div><div>80.80617%1.705NAA+NAAG</div><div>13.22881%0.279Cr+PCr</div><div>76.47752%1.614Glu+Gln</div></div></div><div><div><div><div>723.82120%15.272Lip13a</div><div>0.000999%0.000Lip13b</div><div>22.525231%0.475Lip20</div><div>723.82120%15.272Lip13a+Lip13b</div></div></div></div></div>	<div><div><div><div>lps= 8</div><div>ltable= 7</div><div>ndcols= 12</div><div>ndrows= 14</div><div>ndslic= 1</div><div>nunfil= 1024</div><div>ppmend= 1.0</div><div>ppmst= 4.0</div><div>savdir= '/home/data/Studies/GBM_Spektro/results/'</div><div>sptype= 'tumor'</div><div>srcraw= '/home/data/Studies/GBM_Spektro/data/</div><div>DBIEX_7_1_raw_act.SDAT'</div></div></div></div>
<div><div><div><div>DIAGNOSTICS</div><div>1 infoFINOUT 9</div></div></div></div>	
<div><div><div><div>MISCELLANEOUS OUTPUT</div><div>FWHM = 0.092 ppmS/N = 4</div><div>Data shift = 0.015 ppm</div><div>Ph: -29 deg-11.1 deg/ppm</div></div></div></div>	
<div><div><div><div>INPUT CHANGES</div><div>deltat= 5.000e-04</div><div>echot= 288.00</div><div>filbas= '/home/stu11733/.lcmmodel/basis-sets/gam</div><div>ma_press_te288_128mhz_662d.basis'</div><div>hzpppm= 1.2776e+02</div><div>icolen= 7</div><div>icolst= 2</div><div>irowen= 11</div><div>irowst= 7</div><div>islice= 1</div></div></div></div>	

P15 - edema  
voxel 11;3

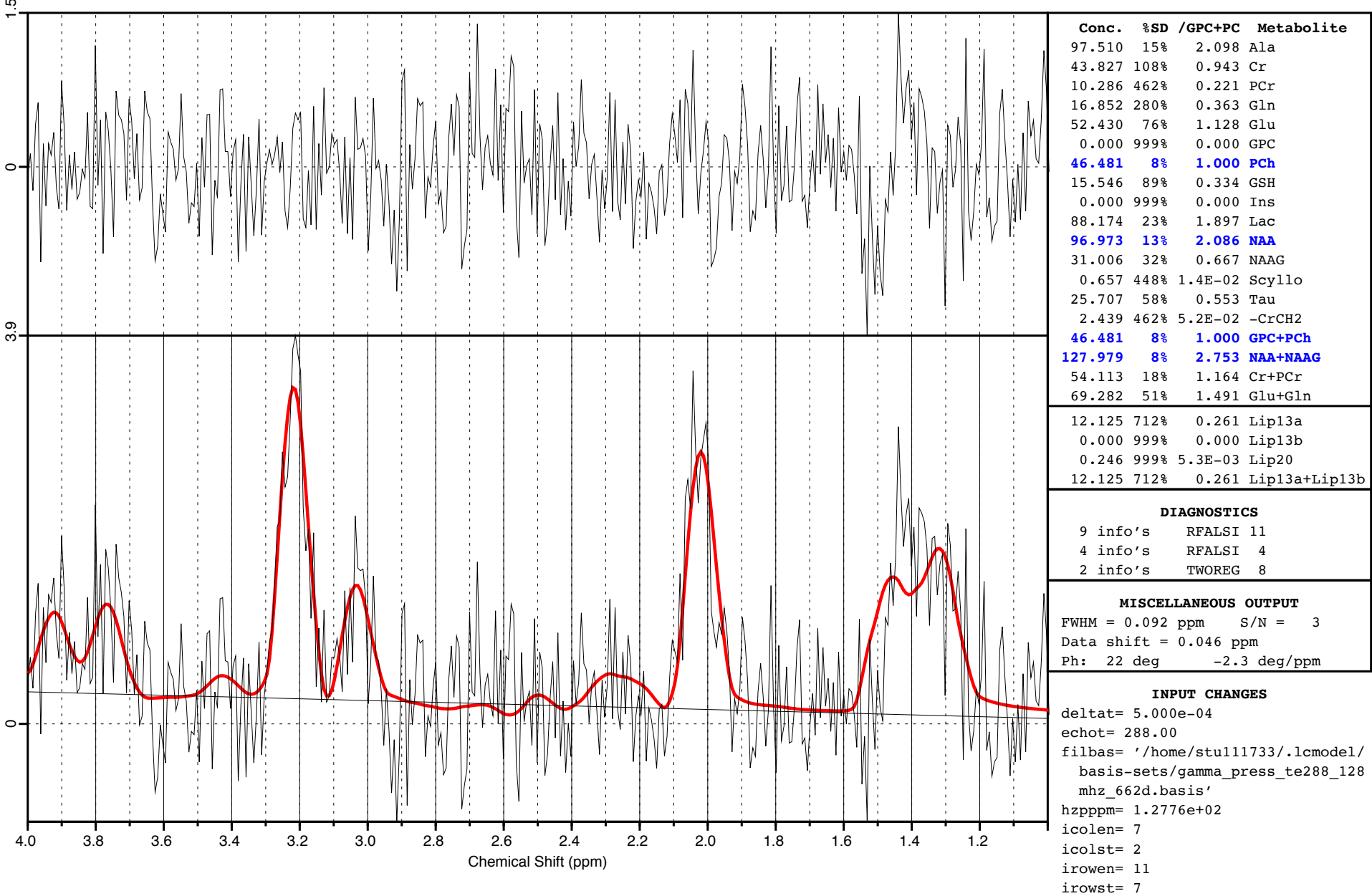
Row#11 Col#3 MR Hirn (2019.01.04 14:00:10) Subject 06 6.30e-01 mL, TE/TR/NS=288/1500/4 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

Ref.: *Magn. Reson. Med. 30:672-679 (1993).*

13-June-2019 10:48



## P15 - edema voxel 11;3

Row#11 Col#3 MR Hirn (2019.01.04 14:00:10) Subject 06 6.30e-01 mL, TE/TR/NS=288/1500/4 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

*Ref.: Magn. Reson. Med. 30:672-679 (1993).*

13-June-2019 10:48

<table><tr><td colspan="3">Conc.</td><td>%SD</td><td>/GPC+PC</td><td>Metabolite</td></tr><tr><td>97.510</td><td>15%</td><td>2.098</td><td>Ala</td><td></td><td></td></tr><tr><td>43.827</td><td>108%</td><td>0.943</td><td>Cr</td><td></td><td></td></tr><tr><td>10.286</td><td>462%</td><td>0.221</td><td>PCr</td><td></td><td></td></tr><tr><td>16.852</td><td>280%</td><td>0.363</td><td>Gln</td><td></td><td></td></tr><tr><td>52.430</td><td>76%</td><td>1.128</td><td>Glu</td><td></td><td></td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>GPC</td><td></td><td></td></tr><tr><td>46.481</td><td>8%</td><td>1.000</td><td>PCh</td><td></td><td></td></tr><tr><td>15.546</td><td>89%</td><td>0.334</td><td>GSH</td><td></td><td></td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>Ins</td><td></td><td></td></tr><tr><td>88.174</td><td>23%</td><td>1.897</td><td>Lac</td><td></td><td></td></tr><tr><td>96.973</td><td>13%</td><td>2.086</td><td>NAA</td><td></td><td></td></tr><tr><td>31.006</td><td>32%</td><td>0.667</td><td>NAAG</td><td></td><td></td></tr><tr><td>0.657</td><td>448%</td><td>1.4E-02</td><td>Scyllo</td><td></td><td></td></tr><tr><td>25.707</td><td>58%</td><td>0.553</td><td>Tau</td><td></td><td></td></tr><tr><td>2.439</td><td>462%</td><td>5.2E-02</td><td>-CrCH2</td><td></td><td></td></tr><tr><td>46.481</td><td>8%</td><td>1.000</td><td>GPC+PCh</td><td></td><td></td></tr><tr><td>127.979</td><td>8%</td><td>2.753</td><td>NAA+NAAG</td><td></td><td></td></tr><tr><td>54.113</td><td>18%</td><td>1.164</td><td>Cr+PCr</td><td></td><td></td></tr><tr><td>69.282</td><td>51%</td><td>1.491</td><td>Glu+Gln</td><td></td><td></td></tr></table>	Conc.			%SD	/GPC+PC	Metabolite	97.510	15%	2.098	Ala			43.827	108%	0.943	Cr			10.286	462%	0.221	PCr			16.852	280%	0.363	Gln			52.430	76%	1.128	Glu			0.000	999%	0.000	GPC			46.481	8%	1.000	PCh			15.546	89%	0.334	GSH			0.000	999%	0.000	Ins			88.174	23%	1.897	Lac			96.973	13%	2.086	NAA			31.006	32%	0.667	NAAG			0.657	448%	1.4E-02	Scyllo			25.707	58%	0.553	Tau			2.439	462%	5.2E-02	-CrCH2			46.481	8%	1.000	GPC+PCh			127.979	8%	2.753	NAA+NAAG			54.113	18%	1.164	Cr+PCr			69.282	51%	1.491	Glu+Gln			<table><tr><td>irowst= 7</td></tr><tr><td>islice= 1</td></tr><tr><td>lps= 8</td></tr><tr><td>ltable= 7</td></tr><tr><td>ndcols= 12</td></tr><tr><td>ndrows= 14</td></tr><tr><td>ndslic= 1</td></tr><tr><td>nunfil= 1024</td></tr><tr><td>ppmend= 1.0</td></tr><tr><td>ppmst= 4.0</td></tr><tr><td>savdir= '/home/data/Studies/GBM_Spektro/results/</td></tr><tr><td>,</td></tr><tr><td>sptype= 'tumor'</td></tr><tr><td>srcraw= '/home/data/Studies/GBM_Spektro/data/</td></tr><tr><td>\$DBIEX_7_1_raw_act.SDAT'</td></tr></table>	irowst= 7	islice= 1	lps= 8	ltable= 7	ndcols= 12	ndrows= 14	ndslic= 1	nunfil= 1024	ppmend= 1.0	ppmst= 4.0	savdir= '/home/data/Studies/GBM_Spektro/results/	,	sptype= 'tumor'	srcraw= '/home/data/Studies/GBM_Spektro/data/	\$DBIEX_7_1_raw_act.SDAT'
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P19 - tumor  
voxel 12;7

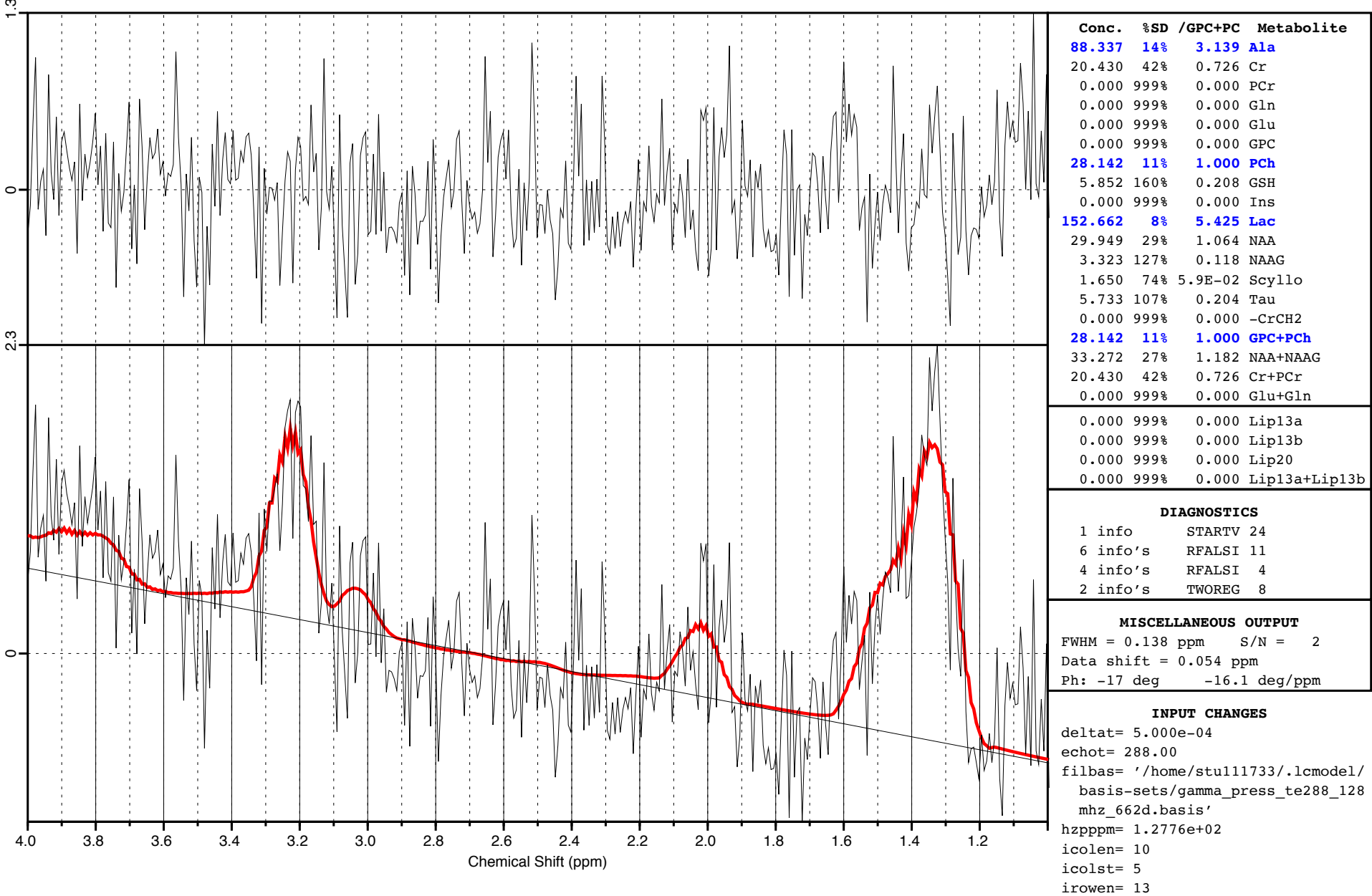
Row#12 Col#7 MR Hirn (2019.01.09 17:36:15) Subject 10 7.86e-01 mL, TE/TR/NS=288/1500/3 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

Ref.: Magn. Reson. Med. 30:672-679 (1993).

14-June-2019 17:23



Row#12 Col#7 MR Hirn (2019.01.09 17:36:15) Subject 10 7.86e-01 mL, TE/TR/NS=288/1500/3 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

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Ref.: *Magn. Reson. Med. 30:672-679 (1993).*

14-June-2019 17:23

<div><div><div><div><div>Conc.</div><div>%SD</div><div>/GPC+PC</div><div>Metabolite</div></div><div><div>88.337</div><div>14%</div><div>3.139</div><div>Ala</div></div></div><div><div>20.430</div><div>42%</div><div>0.726</div><div>Cr</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>PCr</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Gln</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Glu</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>GPC</div></div><div><div>28.142</div><div>11%</div><div>1.000</div><div>PCh</div></div><div><div>5.852</div><div>160%</div><div>0.208</div><div>GSH</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Ins</div></div><div><div>152.662</div><div>8%</div><div>5.425</div><div>Lac</div></div><div><div>29.949</div><div>29%</div><div>1.064</div><div>NAA</div></div><div><div>3.323</div><div>127%</div><div>0.118</div><div>NAAG</div></div><div><div>1.650</div><div>74%</div><div>5.9E-02</div><div>Scyllo</div></div><div><div>5.733</div><div>107%</div><div>0.204</div><div>Tau</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>-CrCH2</div></div><div><div>28.142</div><div>11%</div><div>1.000</div><div>GPC+PCh</div></div><div><div>33.272</div><div>27%</div><div>1.182</div><div>NAA+NAAG</div></div><div><div>20.430</div><div>42%</div><div>0.726</div><div>Cr+PCr</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Glu+Gln</div></div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Lip13a</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Lip13b</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Lip20</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Lip13a+Lip13b</div></div></div> <tr><td><div><div>DIAGNOSTICS</div><div><div>1</div><div>info</div><div>STARTV</div><div>24</div></div><div><div>6</div><div>info's</div><div>RFALSI</div><div>11</div></div><div><div>4</div><div>info's</div><div>RFALSI</div><div>4</div></div><div><div>2</div><div>info's</div><div>TWOREG</div><div>8</div></div></div></td></tr> <tr><td><div><div>MISCELLANEOUS OUTPUT</div><div><div>FWHM = 0.138 ppm</div><div>S/N = 2</div><div>Data shift = 0.054 ppm</div><div>Ph: -17 deg</div><div>-16.1 deg/ppm</div></div></div></td></tr> <tr><td><div><div>INPUT CHANGES</div><div><div>deltat= 5.000e-04</div><div>echot= 288.00</div><div>filbas= '/home/stu111733/.lcmodel/basis-sets/gam ma_press_te288_128mhz_662d.basis'</div><div>hzpppm= 1.2776e+02</div><div>icolen= 10</div><div>icolst= 5</div></div></div></td></tr>	<div><div>DIAGNOSTICS</div><div><div>1</div><div>info</div><div>STARTV</div><div>24</div></div><div><div>6</div><div>info's</div><div>RFALSI</div><div>11</div></div><div><div>4</div><div>info's</div><div>RFALSI</div><div>4</div></div><div><div>2</div><div>info's</div><div>TWOREG</div><div>8</div></div></div>	<div><div>MISCELLANEOUS OUTPUT</div><div><div>FWHM = 0.138 ppm</div><div>S/N = 2</div><div>Data shift = 0.054 ppm</div><div>Ph: -17 deg</div><div>-16.1 deg/ppm</div></div></div>	<div><div>INPUT CHANGES</div><div><div>deltat= 5.000e-04</div><div>echot= 288.00</div><div>filbas= '/home/stu111733/.lcmodel/basis-sets/gam ma_press_te288_128mhz_662d.basis'</div><div>hzpppm= 1.2776e+02</div><div>icolen= 10</div><div>icolst= 5</div></div></div>
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irowst= 9

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lps= 8

ltable= 7

ndcols= 11

ndrows= 14

ndslic= 1

nunfil= 1024

ppmend= 1.0

ppmst= 4.0

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# P19 - edema voxel 10;10

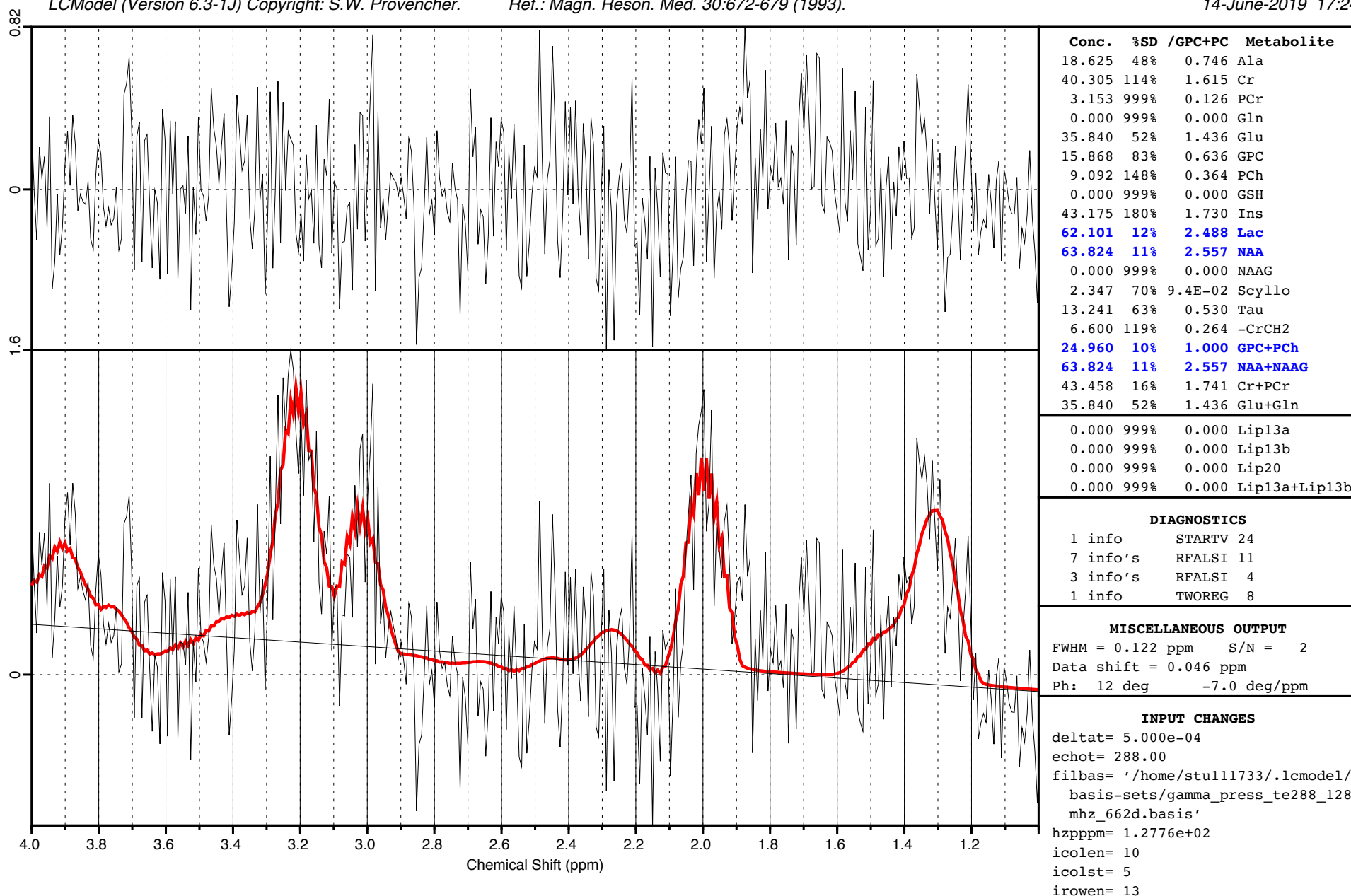
Row#10 Col#10 MR Hirn (2019.01.09 17:36:15) Subject 10 7.86e-01 mL, TE/TR/NS=288/1500/3 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

Ref.: Magn. Reson. Med. 30:672-679 (1993).

14-June-2019 17:24



<table><tr><th>Conc.</th><th>%SD</th><th>/GPC+PC</th><th>Metabolite</th></tr><tr><td>18.625</td><td>48%</td><td>0.746</td><td>Ala</td></tr><tr><td>40.305</td><td>114%</td><td>1.615</td><td>Cr</td></tr><tr><td>3.153</td><td>999%</td><td>0.126</td><td>PCr</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>Gln</td></tr><tr><td>35.840</td><td>52%</td><td>1.436</td><td>Glu</td></tr><tr><td>15.868</td><td>83%</td><td>0.636</td><td>GPC</td></tr><tr><td>9.092</td><td>148%</td><td>0.364</td><td>PCh</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>GSH</td></tr><tr><td>43.175</td><td>180%</td><td>1.730</td><td>Ins</td></tr><tr><td>62.101</td><td>12%</td><td>2.488</td><td>Lac</td></tr><tr><td>63.824</td><td>11%</td><td>2.557</td><td>NAA</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>NAAG</td></tr><tr><td>2.347</td><td>70%</td><td>9.4E-02</td><td>Scyllo</td></tr><tr><td>13.241</td><td>63%</td><td>0.530</td><td>Tau</td></tr><tr><td>6.600</td><td>119%</td><td>0.264</td><td>-CrCH2</td></tr><tr><td>24.960</td><td>10%</td><td>1.000</td><td>GPC+PCh</td></tr><tr><td>63.824</td><td>11%</td><td>2.557</td><td>NAA+NAAG</td></tr><tr><td>43.458</td><td>16%</td><td>1.741</td><td>Cr+PCr</td></tr><tr><td>35.840</td><td>52%</td><td>1.436</td><td>Glu+Gln</td></tr></table>	Conc.	%SD	/GPC+PC	Metabolite	18.625	48%	0.746	Ala	40.305	114%	1.615	Cr	3.153	999%	0.126	PCr	0.000	999%	0.000	Gln	35.840	52%	1.436	Glu	15.868	83%	0.636	GPC	9.092	148%	0.364	PCh	0.000	999%	0.000	GSH	43.175	180%	1.730	Ins	62.101	12%	2.488	Lac	63.824	11%	2.557	NAA	0.000	999%	0.000	NAAG	2.347	70%	9.4E-02	Scyllo	13.241	63%	0.530	Tau	6.600	119%	0.264	-CrCH2	24.960	10%	1.000	GPC+PCh	63.824	11%	2.557	NAA+NAAG	43.458	16%	1.741	Cr+PCr	35.840	52%	1.436	Glu+Gln	<table><tr><td>irowen= 13</td></tr><tr><td>irowst= 9</td></tr><tr><td>islice= 1</td></tr><tr><td>lps= 8</td></tr><tr><td>ltable= 7</td></tr><tr><td>ndcols= 11</td></tr><tr><td>ndrows= 14</td></tr><tr><td>ndslic= 1</td></tr><tr><td>nunfil= 1024</td></tr><tr><td>ppmend= 1.0</td></tr><tr><td>ppmst= 4.0</td></tr><tr><td>savdir= '/home/data/Studies/GBM_Spektro/results/</td></tr><tr><td>,</td></tr><tr><td>sptype= 'tumor'</td></tr><tr><td>srcraw= '/home/data/Studies/GBM_Spektro/data/</td></tr><tr><td>st0288_5_1_raw_act.SDAT'</td></tr></table>	irowen= 13	irowst= 9	islice= 1	lps= 8	ltable= 7	ndcols= 11	ndrows= 14	ndslic= 1	nunfil= 1024	ppmend= 1.0	ppmst= 4.0	savdir= '/home/data/Studies/GBM_Spektro/results/	,	sptype= 'tumor'	srcraw= '/home/data/Studies/GBM_Spektro/data/	st0288_5_1_raw_act.SDAT'
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P30 - tumor  
voxel 11;4

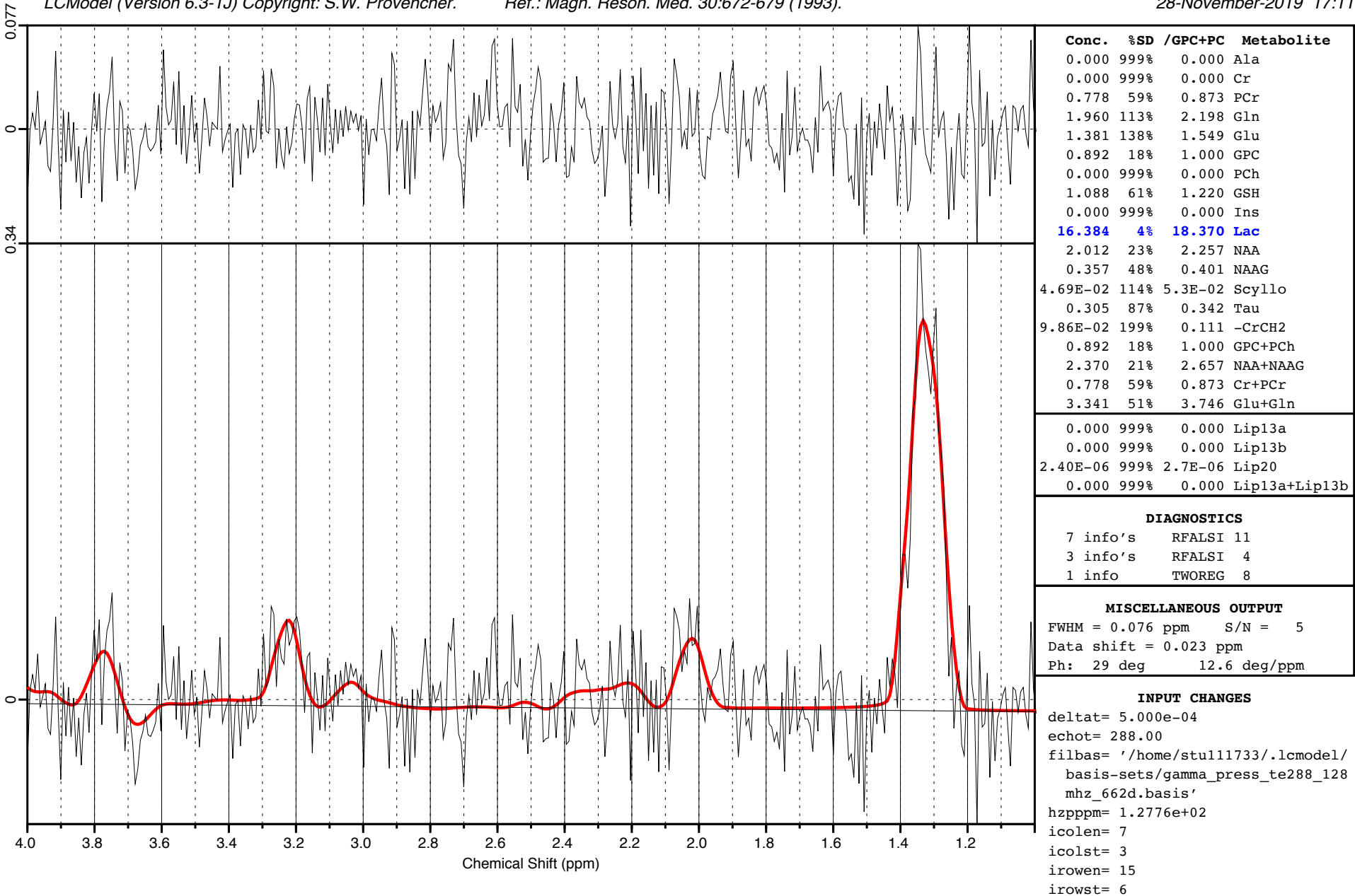
Row#11 Col#4 MR Spektroskopie (2019.08.27 10:25:40) Subject 04 8.00e-01 mL, TE/TR/NS=288/1500/2 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

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Ref.: Magn. Reson. Med. 30:672-679 (1993).

28-November-2019 17:11



## P30 - tumor voxel 11;4

Row#11 Col#4 MR Spektroskopie (2019.08.27 10:25:40) Subject 04 8.00e-01 mL, TE/TR/NS=288/1500/2 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

*Ref.: Magn. Reson. Med. 30:672-679 (1993).*

28-November-2019 17:11

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# P30 - edema voxel 14;4

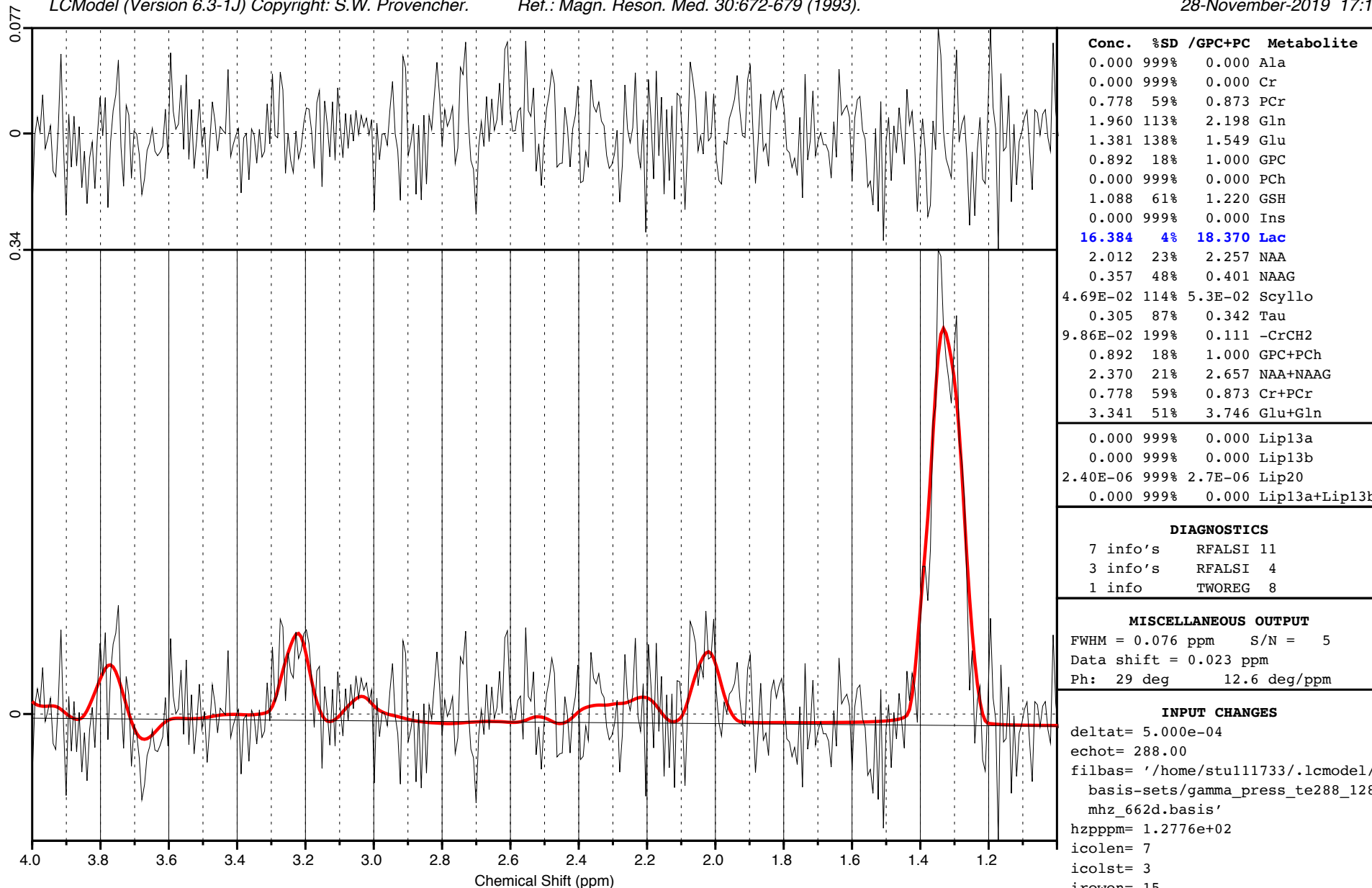
Row#11 Col#4 MR Spektroskopie (2019.08.27 10:25:40) Subject 04 8.00e-01 mL, TE/TR/NS=288/1500/2 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

Ref.: Magn. Reson. Med. 30:672-679 (1993).

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Conc.	%SD	/GPC+PC	Metabolite
0.000	99%	0.000	Ala
0.000	99%	0.000	Cr
0.778	5%	0.873	PCr
1.960	11%	2.198	Gln
1.381	13%	1.549	Glu
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2.40E-06	99%	2.7E-06	Lip20
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## DIAGNOSTICS

7 info's	RFALSI	11
3 info's	RFALSI	4
1 info	TWOREG	8

## MISCELLANEOUS OUTPUT

FWHM = 0.076 ppm S/N = 5  
Data shift = 0.023 ppm  
Ph: 29 deg 12.6 deg/ppm

## INPUT CHANGES

deltat= 5.000e-04  
echot= 288.00  
filbas= '/home/stu11733/.lcmodel/  
basis-sets/gamma\_press\_te288\_128  
mhz\_662d.basis'  
hzpppm= 1.2776e+02  
icolen= 7  
icolst= 3  
irowen= 15  
irowst= 6

Row#11 Col#4 MR Spektroskopie (2019.08.27 10:25:40) Subject 04 8.00e-01 mL, TE/TR/NS=288/1500/2 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

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2.370	21%	2.657	NAA+NAAG																																																																																																																																																																																	
0.778	59%	0.873	Cr+PCr																																																																																																																																																																																	
3.341	51%	3.746	Glu+Gln																																																																																																																																																																																	
0.000	999%	0.000	Lip13a																																																																																																																																																																																	
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2.40E-06	999%	2.7E-06	Lip20																																																																																																																																																																																	
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P42 - tumor  
voxel 16;7

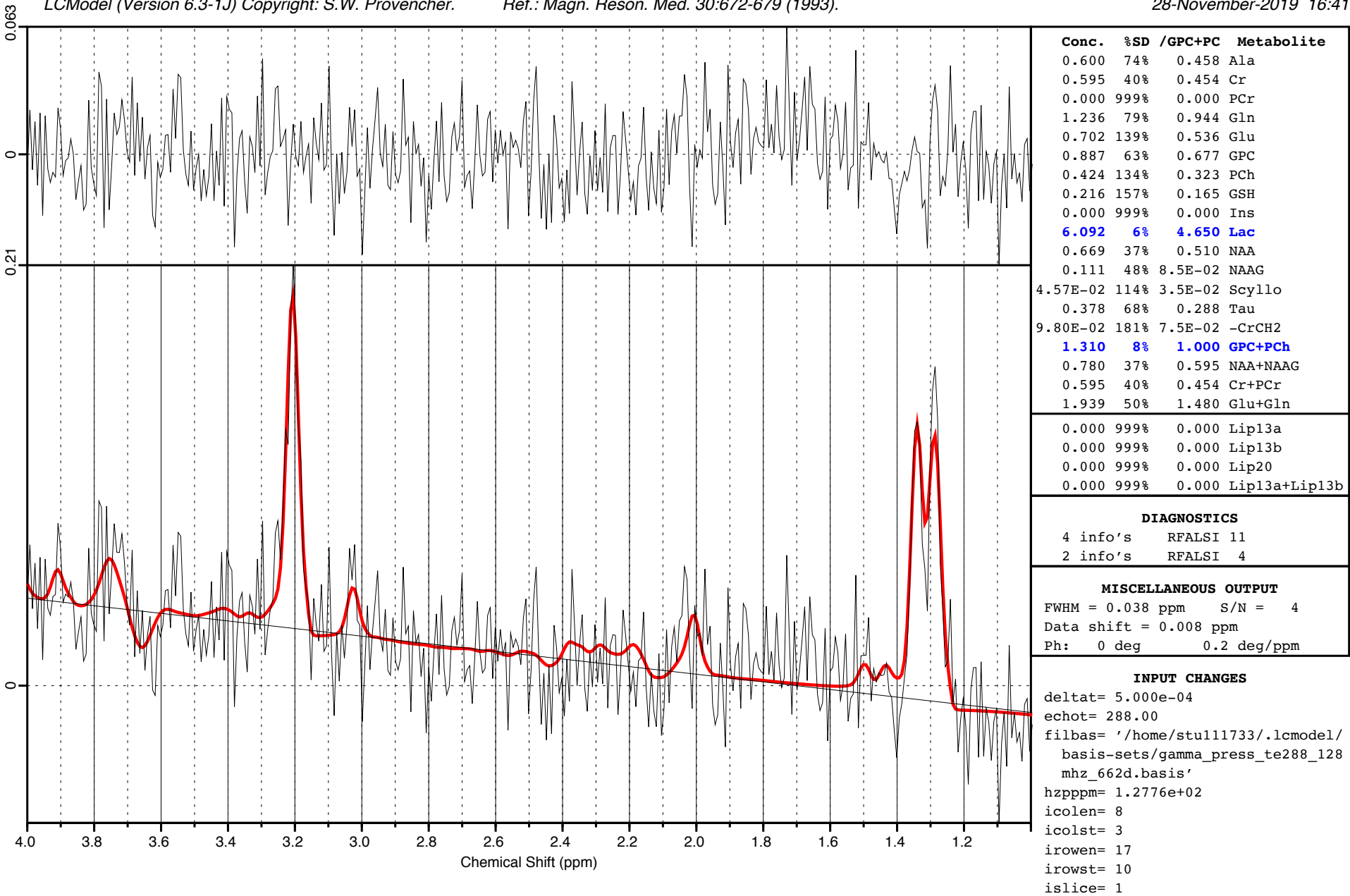
Row#16 Col#7 (2019.08.27 10:55:20) Subject 11 7.88e-01 mL, TE/TR/NS=288/1500/2 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

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Ref.: *Magn. Reson. Med. 30:672-679 (1993).*

28-November-2019 16:41



Row#16 Col#7 (2019.08.27 10:55:20) Subject 11 7.88e-01 mL, TE/TR/NS=288/1500/2 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.      Ref.: Magn. Reson. Med. 30:672-679 (1993).

28-November-2019 16:41

<div><div><div><div>Conc.</div><div>%SD</div><div>/GPC+PC</div><div>Metabolite</div></div><div><div>0.600</div><div>74%</div><div>0.458</div><div>Ala</div></div><div><div>0.595</div><div>40%</div><div>0.454</div><div>Cr</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>PCr</div></div><div><div>1.236</div><div>79%</div><div>0.944</div><div>Gln</div></div><div><div>0.702</div><div>139%</div><div>0.536</div><div>Glu</div></div><div><div>0.887</div><div>63%</div><div>0.677</div><div>GPC</div></div><div><div>0.424</div><div>134%</div><div>0.323</div><div>PCh</div></div><div><div>0.216</div><div>157%</div><div>0.165</div><div>GSH</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Ins</div></div><div><div>6.092</div><div>6%</div><div>4.650</div><div>Lac</div></div><div><div>0.669</div><div>37%</div><div>0.510</div><div>NAA</div></div><div><div>0.111</div><div>48%</div><div>8.5E-02</div><div>NAAG</div></div><div><div>4.57E-02</div><div>114%</div><div>3.5E-02</div><div>Scyllo</div></div><div><div>0.378</div><div>68%</div><div>0.288</div><div>Tau</div></div><div><div>9.80E-02</div><div>181%</div><div>7.5E-02</div><div>-CrCH2</div></div><div><div>1.310</div><div>8%</div><div>1.000</div><div>GPC+PCh</div></div><div><div>0.780</div><div>37%</div><div>0.595</div><div>NAA+NAAG</div></div><div><div>0.595</div><div>40%</div><div>0.454</div><div>Cr+PCr</div></div><div><div>1.939</div><div>50%</div><div>1.480</div><div>Glu+Gln</div></div></div></div>	<div><div>islice= 1</div><div>lps= 8</div><div>ltable= 7</div><div>ndcols= 16</div><div>ndrows= 20</div><div>ndslic= 1</div><div>nunfil= 1024</div><div>ppmend= 1.0</div><div>ppmst= 4.0</div><div>savdir= '/home/stu111733/.lcmodel/saved/'</div><div>sptype= 'tumor'</div><div>srcraw= '/home/data/Studies/GBM_Spektrum/data/s11</div><div>/DBIEX_5_1_raw_act.SDAT'</div></div>
<div><div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Lip13a</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Lip13b</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Lip20</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Lip13a+Lip13b</div></div></div></div>	
<div><div><div>DIAGNOSTICS</div><div>4 info's      RFALSI 11</div><div>2 info's      RFALSI 4</div></div></div>	
<div><div><div>MISCELLANEOUS OUTPUT</div><div>FWHM = 0.038 ppm      S/N = 4</div><div>Data shift = 0.008 ppm</div><div>Ph: 0 deg      0.2 deg/ppm</div></div></div>	
<div><div><div>INPUT CHANGES</div><div>deltat= 5.000e-04</div><div>echot= 288.00</div><div>filbas= '/home/stu111733/.lcmodel/basis-sets/gam</div><div>ma_press_te288_128mhz_662d.basis'</div><div>hzpppm= 1.2776e+02</div><div>icolen= 8</div><div>icolst= 3</div><div>irowen= 17</div><div>irowst= 10</div></div></div>	

P42 - edema  
voxel 13;6

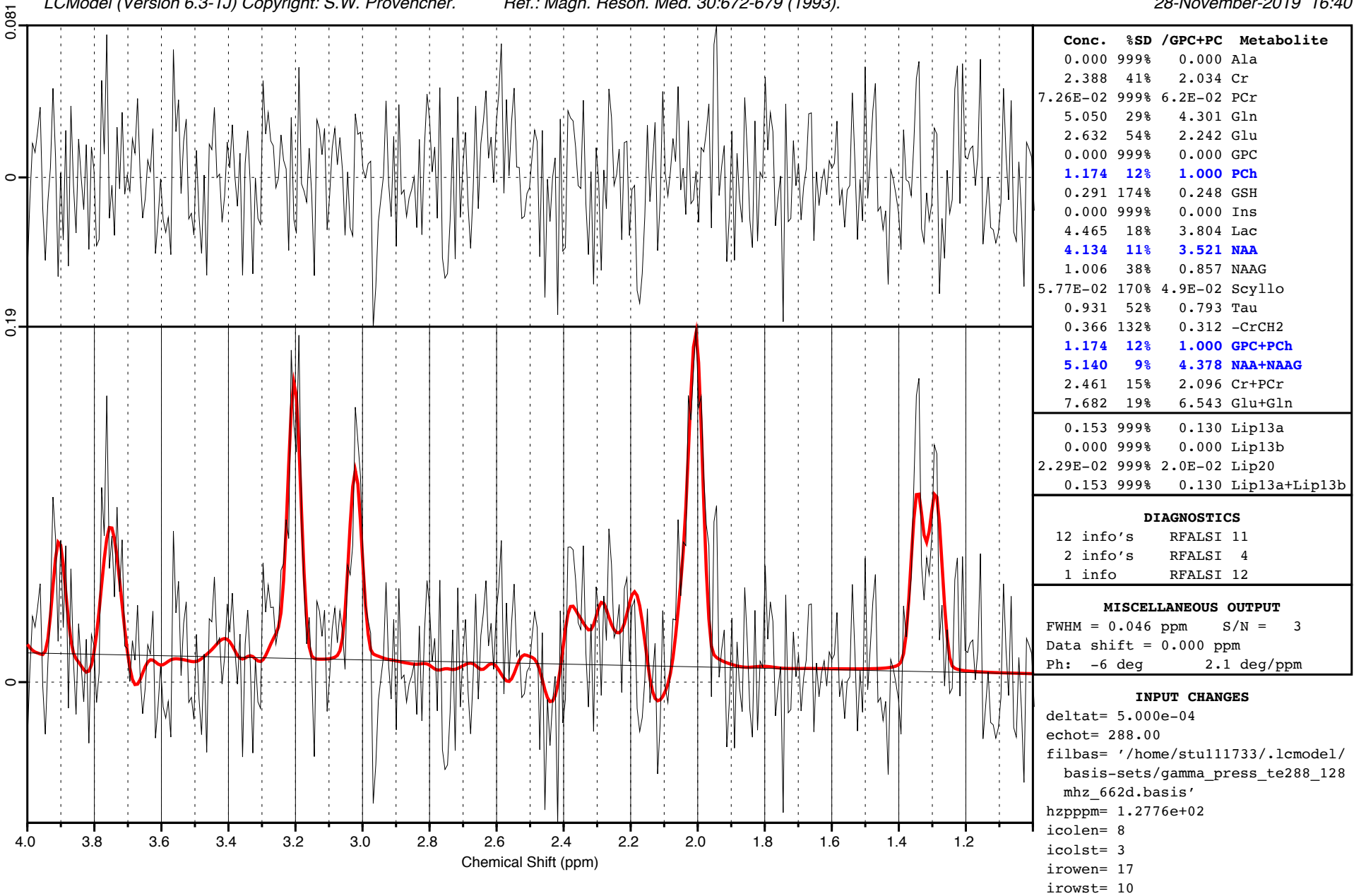
Row#13 Col#6 (2019.08.27 10:55:20) Subject 11 7.88e-01 mL, TE/TR/NS=288/1500/2 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

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Ref.: Magn. Reson. Med. 30:672-679 (1993).

28-November-2019 16:40



## P42 - edema voxel 13;6

Row#13 Col#6 (2019.08.27 10:55:20) Subject 11 7.88e-01 mL, TE/TR/NS=288/1500/2 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

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28-November-2019 16:40

<table><tr><th>Conc.</th><th>%SD</th><th>/GPC+PC</th><th>Metabolite</th></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>Ala</td></tr><tr><td>2.388</td><td>41%</td><td>2.034</td><td>Cr</td></tr><tr><td>7.26E-02</td><td>999%</td><td>6.2E-02</td><td>PCr</td></tr><tr><td>5.050</td><td>29%</td><td>4.301</td><td>Gln</td></tr><tr><td>2.632</td><td>54%</td><td>2.242</td><td>Glu</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>GPC</td></tr><tr><td>1.174</td><td>12%</td><td>1.000</td><td>PCh</td></tr><tr><td>0.291</td><td>174%</td><td>0.248</td><td>GSH</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>Ins</td></tr><tr><td>4.465</td><td>18%</td><td>3.804</td><td>Lac</td></tr><tr><td>4.134</td><td>11%</td><td>3.521</td><td>NAA</td></tr><tr><td>1.006</td><td>38%</td><td>0.857</td><td>NAAG</td></tr><tr><td>5.77E-02</td><td>170%</td><td>4.9E-02</td><td>Scyllo</td></tr><tr><td>0.931</td><td>52%</td><td>0.793</td><td>Tau</td></tr><tr><td>0.366</td><td>132%</td><td>0.312</td><td>-CrCH2</td></tr><tr><td>1.174</td><td>12%</td><td>1.000</td><td>GPC+PCh</td></tr><tr><td>5.140</td><td>9%</td><td>4.378</td><td>NAA+NAAG</td></tr><tr><td>2.461</td><td>15%</td><td>2.096</td><td>Cr+PCr</td></tr><tr><td>7.682</td><td>19%</td><td>6.543</td><td>Glu+Gln</td></tr></table>	Conc.	%SD	/GPC+PC	Metabolite	0.000	999%	0.000	Ala	2.388	41%	2.034	Cr	7.26E-02	999%	6.2E-02	PCr	5.050	29%	4.301	Gln	2.632	54%	2.242	Glu	0.000	999%	0.000	GPC	1.174	12%	1.000	PCh	0.291	174%	0.248	GSH	0.000	999%	0.000	Ins	4.465	18%	3.804	Lac	4.134	11%	3.521	NAA	1.006	38%	0.857	NAAG	5.77E-02	170%	4.9E-02	Scyllo	0.931	52%	0.793	Tau	0.366	132%	0.312	-CrCH2	1.174	12%	1.000	GPC+PCh	5.140	9%	4.378	NAA+NAAG	2.461	15%	2.096	Cr+PCr	7.682	19%	6.543	Glu+Gln	<table><tr><td>irowst= 10</td></tr><tr><td>islice= 1</td></tr><tr><td>lps= 8</td></tr><tr><td>ltable= 7</td></tr><tr><td>ndcols= 16</td></tr><tr><td>ndrows= 20</td></tr><tr><td>ndslic= 1</td></tr><tr><td>nunfil= 1024</td></tr><tr><td>ppmend= 1.0</td></tr><tr><td>ppmst= 4.0</td></tr><tr><td>savdir= '/home/stu11733/.lcmode1/saved/'</td></tr><tr><td>sptype= 'tumor'</td></tr><tr><td>srcraw= '/home/data/Studies/GBM_Spektro/data/s11</td></tr><tr><td>/DBIEX_5_1_raw_act.SDAT'</td></tr></table>	irowst= 10	islice= 1	lps= 8	ltable= 7	ndcols= 16	ndrows= 20	ndslic= 1	nunfil= 1024	ppmend= 1.0	ppmst= 4.0	savdir= '/home/stu11733/.lcmode1/saved/'	sptype= 'tumor'	srcraw= '/home/data/Studies/GBM_Spektro/data/s11	/DBIEX_5_1_raw_act.SDAT'
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<table><tr><td>0.153</td><td>999%</td><td>0.130</td><td>Lip13a</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>Lip13b</td></tr><tr><td>2.29E-02</td><td>999%</td><td>2.0E-02</td><td>Lip20</td></tr><tr><td>0.153</td><td>999%</td><td>0.130</td><td>Lip13a+Lip13b</td></tr></table>	0.153	999%	0.130	Lip13a	0.000	999%	0.000	Lip13b	2.29E-02	999%	2.0E-02	Lip20	0.153	999%	0.130	Lip13a+Lip13b																																																																															
0.153	999%	0.130	Lip13a																																																																																												
0.000	999%	0.000	Lip13b																																																																																												
2.29E-02	999%	2.0E-02	Lip20																																																																																												
0.153	999%	0.130	Lip13a+Lip13b																																																																																												
<table><tr><th colspan="2">DIAGNOSTICS</th></tr><tr><td>12 info's</td><td>RFALSI 11</td></tr><tr><td>2 info's</td><td>RFALSI 4</td></tr><tr><td>1 info</td><td>RFALSI 12</td></tr></table>	DIAGNOSTICS		12 info's	RFALSI 11	2 info's	RFALSI 4	1 info	RFALSI 12																																																																																							
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<table><tr><th colspan="2">MISCELLANEOUS OUTPUT</th></tr><tr><td>FWHM = 0.046 ppm</td><td>S/N = 3</td></tr><tr><td>Data shift = 0.000 ppm</td><td></td></tr><tr><td>Ph: -6 deg</td><td>2.1 deg/ppm</td></tr></table>	MISCELLANEOUS OUTPUT		FWHM = 0.046 ppm	S/N = 3	Data shift = 0.000 ppm		Ph: -6 deg	2.1 deg/ppm																																																																																							
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<table><tr><th colspan="2">INPUT CHANGES</th></tr><tr><td>deltat= 5.000e-04</td><td></td></tr><tr><td>echot= 288.00</td><td></td></tr><tr><td>filbas= '/home/stu11733/.lcmode1/basis-sets/gam</td><td></td></tr><tr><td>ma_press_te288_128mhz_662d.basis'</td><td></td></tr><tr><td>hzpppm= 1.2776e+02</td><td></td></tr><tr><td>icolen= 8</td><td></td></tr><tr><td>icolst= 3</td><td></td></tr><tr><td>irowen= 17</td><td></td></tr></table>	INPUT CHANGES		deltat= 5.000e-04		echot= 288.00		filbas= '/home/stu11733/.lcmode1/basis-sets/gam		ma_press_te288_128mhz_662d.basis'		hzpppm= 1.2776e+02		icolen= 8		icolst= 3		irowen= 17																																																																														
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P43 - tumor  
voxel 14;11

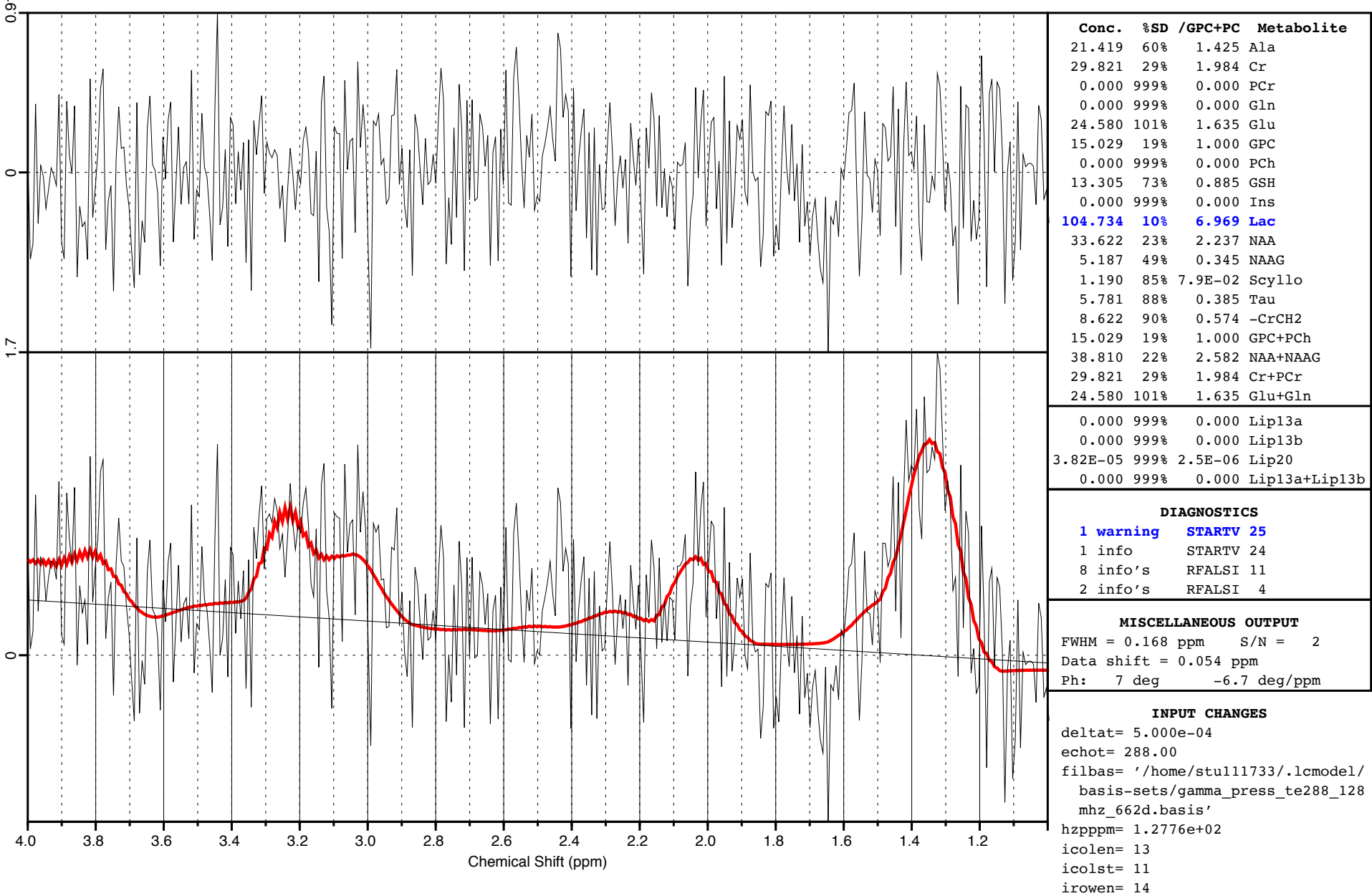
Row#14 Col#11 MR Hirn funktionell (2019.04.26 14:02:53) Subject 12 7.99e-01 mL, TE/TR/NS=288/1500/2  
(s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

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Ref.: Magn. Reson. Med. 30:672-679 (1993).

17-June-2019 14:55



Row#14 Col#11 MR Hirn funktionell (2019.04.26 14:02:53) Subject 12 7.99e-01 mL, TE/TR/NS=288/1500/2 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.      Ref.: Magn. Reson. Med. 30:672-679 (1993).

17-June-2019 14:55

<div><div><div><div><div>Conc.</div><div>%SD</div><div>/GPC+PC</div><div>Metabolite</div></div><div>21.41960%1.425Ala</div><div>29.82129%1.984Cr</div><div>0.000999%0.000PCr</div><div>0.000999%0.000Gln</div><div>24.580101%1.635Glu</div><div>15.02919%1.000GPC</div><div>0.000999%0.000PCh</div><div>13.30573%0.885GSH</div><div>0.000999%0.000Ins</div><div>104.73410%6.969Lac</div><div>33.62223%2.237NAA</div><div>5.18749%0.345NAAG</div><div>1.19085%7.9E-02Scyllo</div><div>5.78188%0.385Tau</div><div>8.62290%0.574-CrCH2</div><div>15.02919%1.000GPC+PCh</div><div>38.81022%2.582NAA+NAAG</div><div>29.82129%1.984Cr+PCr</div><div>24.580101%1.635Glu+Gln</div></div><div><div>0.000999%0.000Lip13a</div><div>0.000999%0.000Lip13b</div><div>3.82E-05999%2.5E-06Lip20</div><div>0.000999%0.000Lip13a+Lip13b</div></div></div></div> <div><div>DIAGNOSTICS</div><div><div>1 warning</div><div>STARTV 25</div></div><div><div>1 info</div><div>STARTV 24</div></div><div><div>8 info's</div><div>RFALSI 11</div></div><div><div>2 info's</div><div>RFALSI 4</div></div></div> <div><div>MISCELLANEOUS OUTPUT</div><div><div>FWHM = 0.168 ppm</div><div>S/N = 2</div></div><div><div>Data shift = 0.054 ppm</div></div><div><div>Ph: 7 deg</div><div>-6.7 deg/ppm</div></div></div> <div><div>INPUT CHANGES</div><div><div>deltat= 5.000e-04</div><div>echot= 288.00</div><div>filbas= '/home/stu111733/.lcmodel/basis-sets/gam ma_press_te288_128mhz_662d.basis'</div><div>hzpppm= 1.2776e+02</div><div>icolen= 13</div><div>icolst= 11</div></div></div>
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irowen= 14

irowst= 12

islice= 1

lps= 8

ltable= 7

ndcols= 16

ndrows= 20

ndslic= 1

nunfil= 1024

ppmend= 1.0

ppmst= 4.0

savdir= '/home/stu111733/.lcmodel/saved/'

sptype= 'tumor'

srcraw= '/home/data/Studies/GBM\_Spektro/data/s12  
/DBIEX\_11\_1\_raw\_act.SDAT'

# P43 - edema voxel 11;11

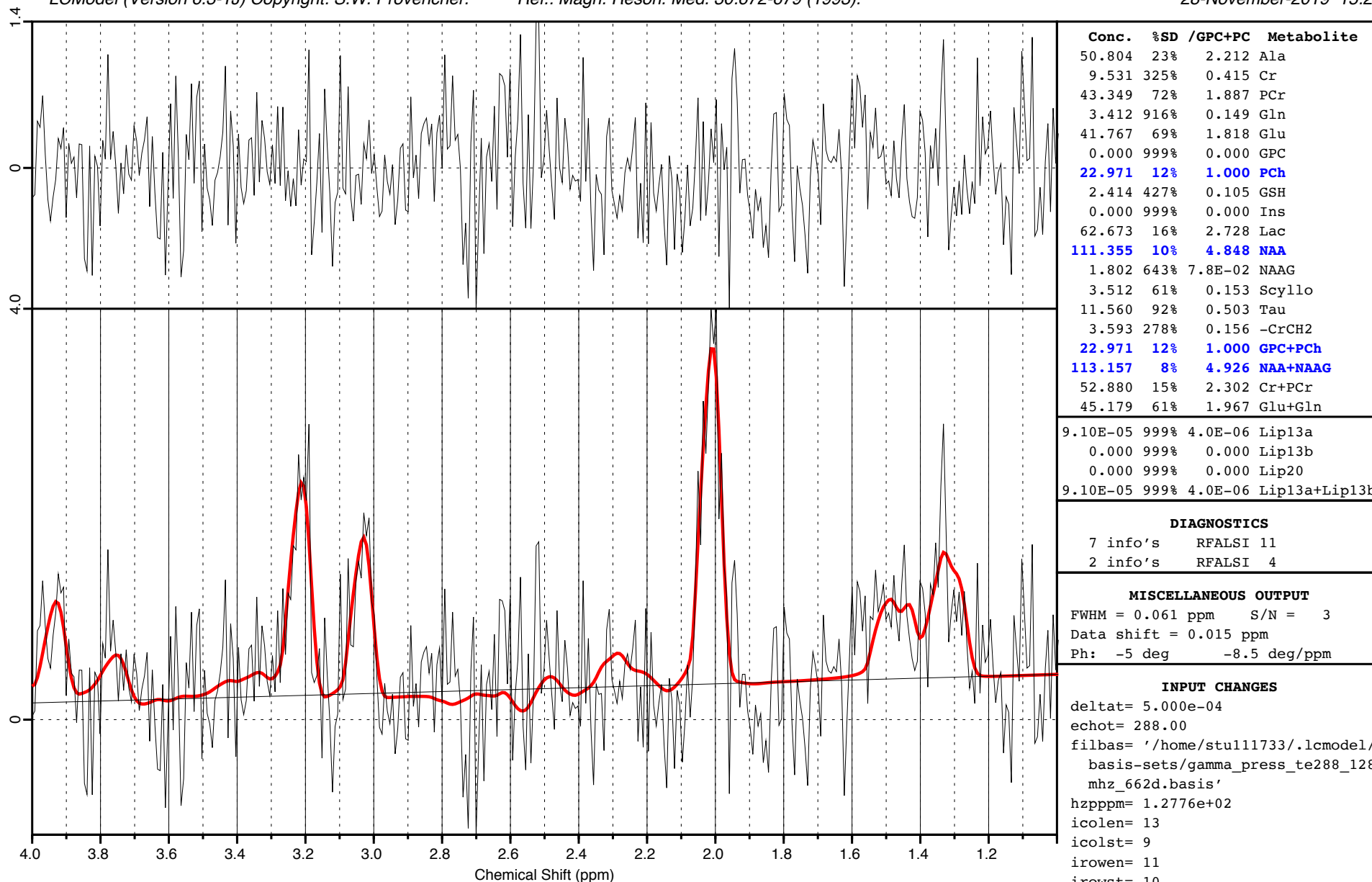
Row#11 Col#11 MR Hirn funktionell (2019.04.26 14:02:53) Subject 12 7.99e-01 mL, TE/TR/NS=288/1500/2  
(s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

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Ref.: Magn. Reson. Med. 30:672-679 (1993).

28-November-2019 15:28



Conc.	%SD	/GPC+PC	Metabolite
50.804	23%	2.212	Ala
9.531	325%	0.415	Cr
43.349	72%	1.887	PCr
3.412	916%	0.149	Gln
41.767	69%	1.818	Glu
0.000	999%	0.000	GPC
<b>22.971</b>	<b>12%</b>	<b>1.000</b>	<b>PCh</b>
2.414	427%	0.105	GSH
0.000	999%	0.000	Ins
62.673	16%	2.728	Lac
<b>111.355</b>	<b>10%</b>	<b>4.848</b>	<b>NAA</b>
1.802	643%	7.8E-02	NAAG
3.512	61%	0.153	Scyllo
11.560	92%	0.503	Tau
3.593	278%	0.156	-CrCH2
<b>22.971</b>	<b>12%</b>	<b>1.000</b>	<b>GPC+PCh</b>
<b>113.157</b>	<b>8%</b>	<b>4.926</b>	<b>NAA+NAAG</b>
52.880	15%	2.302	Cr+PCr
45.179	61%	1.967	Glu+Gln

9.10E-05	999%	4.0E-06	Lip13a
0.000	999%	0.000	Lip13b
0.000	999%	0.000	Lip20
9.10E-05	999%	4.0E-06	Lip13a+Lip13b

## DIAGNOSTICS

7 info's RFALSI 11  
2 info's RFALSI 4

## MISCELLANEOUS OUTPUT

FWHM = 0.061 ppm S/N = 3  
Data shift = 0.015 ppm  
Ph: -5 deg -8.5 deg/ppm

## INPUT CHANGES

deltat= 5.000e-04  
echot= 288.00  
filbas= '/home/stu11733/.lcmmodel/  
basis-sets/gamma\_press\_te288\_128  
mhz\_662d.basis'  
hzpppm= 1.2776e+02  
icolen= 13  
icolst= 9  
irowen= 11  
irowst= 10  
islice= 1

# P43 - edema voxel 11;11

Row#11 Col#11 MR Hirn funktionell (2019.04.26 14:02:53) Subject 12 7.99e-01 mL, TE/TR/NS=288/1500/2 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

Ref.: Magn. Reson. Med. 30:672-679 (1993).

28-November-2019 15:28

<table><tr><th>Conc.</th><th>%SD</th><th>/GPC+PC</th><th>Metabolite</th></tr><tr><td>50.804</td><td>23%</td><td>2.212</td><td>Ala</td></tr><tr><td>9.531</td><td>325%</td><td>0.415</td><td>Cr</td></tr><tr><td>43.349</td><td>72%</td><td>1.887</td><td>PCr</td></tr><tr><td>3.412</td><td>916%</td><td>0.149</td><td>Gln</td></tr><tr><td>41.767</td><td>69%</td><td>1.818</td><td>Glu</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>GPC</td></tr><tr><td>22.971</td><td>12%</td><td>1.000</td><td>PCh</td></tr><tr><td>2.414</td><td>427%</td><td>0.105</td><td>GSH</td></tr><tr><td>0.000</td><td>999%</td><td>0.000</td><td>Ins</td></tr><tr><td>62.673</td><td>16%</td><td>2.728</td><td>Lac</td></tr><tr><td>111.355</td><td>10%</td><td>4.848</td><td>NAA</td></tr><tr><td>1.802</td><td>643%</td><td>7.8E-02</td><td>NAAG</td></tr><tr><td>3.512</td><td>61%</td><td>0.153</td><td>Scyllo</td></tr><tr><td>11.560</td><td>92%</td><td>0.503</td><td>Tau</td></tr><tr><td>3.593</td><td>278%</td><td>0.156</td><td>-CrCH2</td></tr><tr><td>22.971</td><td>12%</td><td>1.000</td><td>GPC+PCh</td></tr><tr><td>113.157</td><td>8%</td><td>4.926</td><td>NAA+NAAG</td></tr><tr><td>52.880</td><td>15%</td><td>2.302</td><td>Cr+PCr</td></tr><tr><td>45.179</td><td>61%</td><td>1.967</td><td>Glu+Gln</td></tr></table>	Conc.	%SD	/GPC+PC	Metabolite	50.804	23%	2.212	Ala	9.531	325%	0.415	Cr	43.349	72%	1.887	PCr	3.412	916%	0.149	Gln	41.767	69%	1.818	Glu	0.000	999%	0.000	GPC	22.971	12%	1.000	PCh	2.414	427%	0.105	GSH	0.000	999%	0.000	Ins	62.673	16%	2.728	Lac	111.355	10%	4.848	NAA	1.802	643%	7.8E-02	NAAG	3.512	61%	0.153	Scyllo	11.560	92%	0.503	Tau	3.593	278%	0.156	-CrCH2	22.971	12%	1.000	GPC+PCh	113.157	8%	4.926	NAA+NAAG	52.880	15%	2.302	Cr+PCr	45.179	61%	1.967	Glu+Gln	<table><tr><td>islice= 1</td></tr><tr><td>lps= 8</td></tr><tr><td>ltable= 7</td></tr><tr><td>ndcols= 16</td></tr><tr><td>ndrows= 20</td></tr><tr><td>ndslic= 1</td></tr><tr><td>nunfil= 1024</td></tr><tr><td>ppmend= 1.0</td></tr><tr><td>ppmst= 4.0</td></tr><tr><td>savdir= '/home/stu111733/.lcmodel/saved/MR_Hirn_funktionell/s12/2019.04.26_14:02:53/'</td></tr><tr><td>sptype= 'tumor'</td></tr><tr><td>srcraw= '/home/data/Studies/GBM_Spektro/data/s12_ff/DBIEX_11_1_raw_act.SDAT'</td></tr></table>	islice= 1	lps= 8	ltable= 7	ndcols= 16	ndrows= 20	ndslic= 1	nunfil= 1024	ppmend= 1.0	ppmst= 4.0	savdir= '/home/stu111733/.lcmodel/saved/MR_Hirn_funktionell/s12/2019.04.26_14:02:53/'	sptype= 'tumor'	srcraw= '/home/data/Studies/GBM_Spektro/data/s12_ff/DBIEX_11_1_raw_act.SDAT'
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<table><tr><th colspan="4">DIAGNOSTICS</th></tr><tr><td>7</td><td>info's</td><td>RFALSI</td><td>11</td></tr><tr><td>2</td><td>info's</td><td>RFALSI</td><td>4</td></tr></table>	DIAGNOSTICS				7	info's	RFALSI	11	2	info's	RFALSI	4																																																																																	
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<table><tr><th colspan="4">MISCELLANEOUS OUTPUT</th></tr><tr><td colspan="4">FWHM = 0.061 ppm S/N = 3</td></tr><tr><td colspan="4">Data shift = 0.015 ppm</td></tr><tr><td colspan="4">Ph: -5 deg -8.5 deg/ppm</td></tr></table>	MISCELLANEOUS OUTPUT				FWHM = 0.061 ppm S/N = 3				Data shift = 0.015 ppm				Ph: -5 deg -8.5 deg/ppm																																																																																
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<table><tr><th colspan="4">INPUT CHANGES</th></tr><tr><td colspan="4">deltat= 5.000e-04</td></tr><tr><td colspan="4">echot= 288.00</td></tr><tr><td colspan="4">filbas= '/home/stu111733/.lcmodel/basis-sets/gam_ma_press_te288_128mhz_662d.basis'</td></tr><tr><td colspan="4">hzpppm= 1.2776e+02</td></tr><tr><td colspan="4">icolen= 13</td></tr><tr><td colspan="4">icolst= 9</td></tr><tr><td colspan="4">irowen= 11</td></tr><tr><td colspan="4">irowst= 10</td></tr></table>	INPUT CHANGES				deltat= 5.000e-04				echot= 288.00				filbas= '/home/stu111733/.lcmodel/basis-sets/gam_ma_press_te288_128mhz_662d.basis'				hzpppm= 1.2776e+02				icolen= 13				icolst= 9				irowen= 11				irowst= 10																																																												
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P44 - tumor  
voxel 11;5

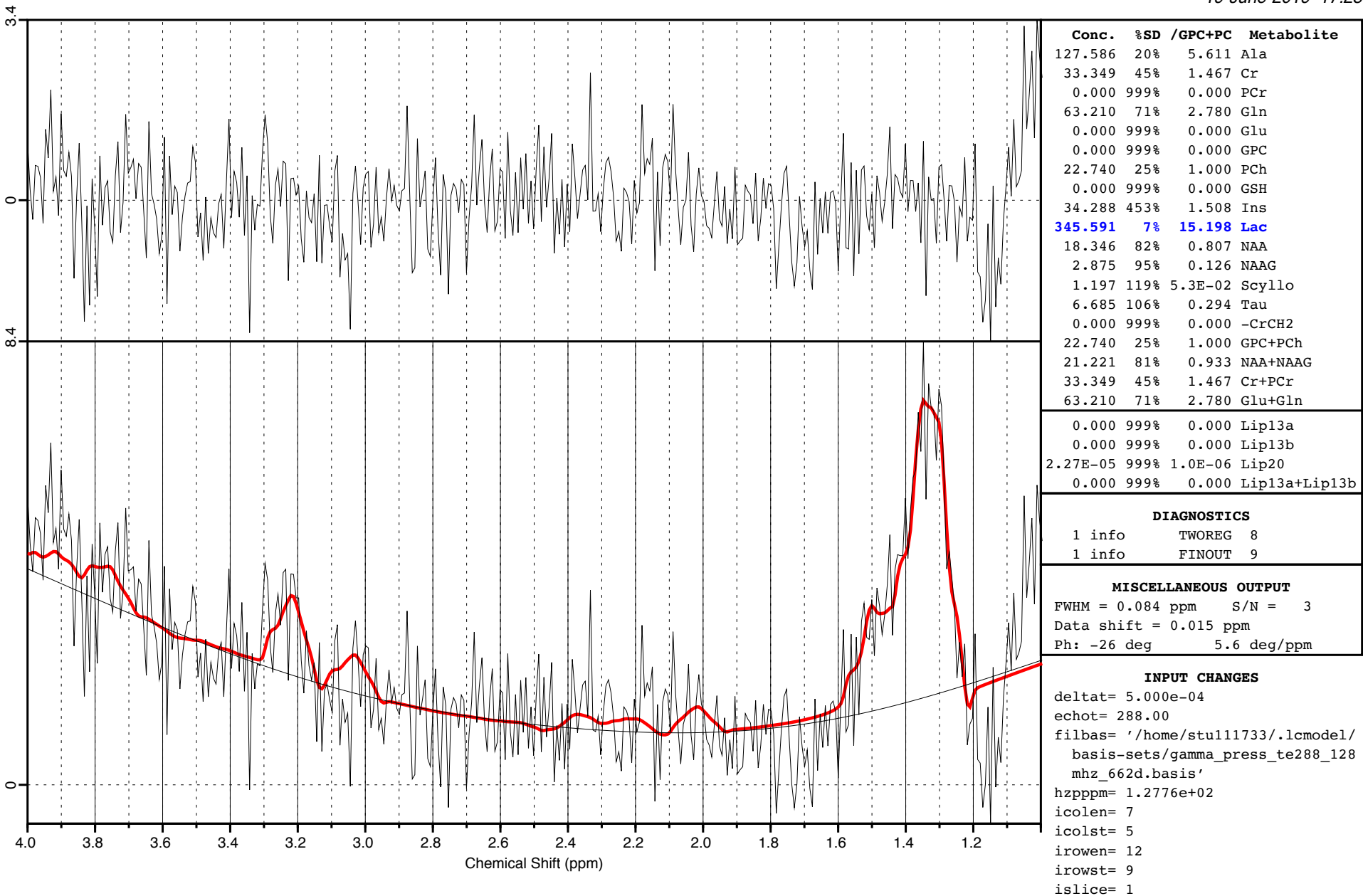
Row#11 Col#5 MR Hirn (2018.11.14 09:25:43) Subject 14 8.00e-01 mL, TE/TR/NS=288/1500/1 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

Ref.: Magn. Reson. Med. 30:672-679 (1993).

19-June-2019 17:28



P44 - tumor  
voxel 11;5

Row#11 Col#5 MR Hirn (2018.11.14 09:25:43) Subject 14 8.00e-01 mL, TE/TR/NS=288/1500/1 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.      Ref.: Magn. Reson. Med. 30:672-679 (1993).

19-June-2019 17:28

<div><div><div><div><div>Conc.</div><div>%SD</div><div>/GPC+PC</div><div>Metabolite</div></div><div>127.58620%5.611Ala</div><div>33.34945%1.467Cr</div><div>0.000999%0.000PCr</div><div>63.21071%2.780Gln</div><div>0.000999%0.000Glu</div><div>0.000999%0.000GPC</div><div>22.74025%1.000PCh</div><div>0.000999%0.000GSH</div><div>34.288453%1.508Ins</div><div>345.5917%15.198Lac</div><div>18.34682%0.807NAA</div><div>2.87595%0.126NAAG</div><div>1.197119%5.3E-02Scyllo</div><div>6.685106%0.294Tau</div><div>0.000999%0.000-CrCH2</div><div>22.74025%1.000GPC+PCh</div><div>21.22181%0.933NAA+NAAG</div><div>33.34945%1.467Cr+PCr</div><div>63.21071%2.780Glu+Gln</div></div><div><div>0.000999%0.000Lip13a</div><div>0.000999%0.000Lip13b</div><div>2.27E-05999%1.0E-06Lip20</div><div>0.000999%0.000Lip13a+Lip13b</div></div></div></div> <div><div>DIAGNOSTICS</div><div>1 infoTWOREG8</div><div>1 infoFINOUT9</div></div> <div><div>MISCELLANEOUS OUTPUT</div><div>FWHM = 0.084 ppmS/N = 3</div><div>Data shift = 0.015 ppm</div><div>Ph: -26 deg5.6 deg/ppm</div></div> <div><div>INPUT CHANGES</div><div>deltat= 5.000e-04</div><div>echot= 288.00</div><div>filbas= '/home/stu111733/.lcmodel/basis-sets/gam ma_press_te288_128mhz_662d.basis'</div><div>hzpppm= 1.2776e+02</div><div>icolen= 7</div><div>icolst= 5</div><div>irowen= 12</div><div>irowst= 9</div></div>	<div><div>islice= 1</div><div>lps= 8</div><div>ltable= 7</div><div>ndcols= 16</div><div>ndrows= 20</div><div>ndslic= 1</div><div>nunfil= 1024</div><div>ppmend= 1.0</div><div>ppmst= 4.0</div><div>savdir= '/home/data/Studies/GBM_Spektro/ results/s14/'</div><div>sptype= 'tumor'</div><div>srcraw= '/home/data/Studies/GBM_Spektro/data/ s14/01/spectro01/spectro01_8_1_raw_act.SDAT'</div></div>
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# P44 - edema voxel 8;5

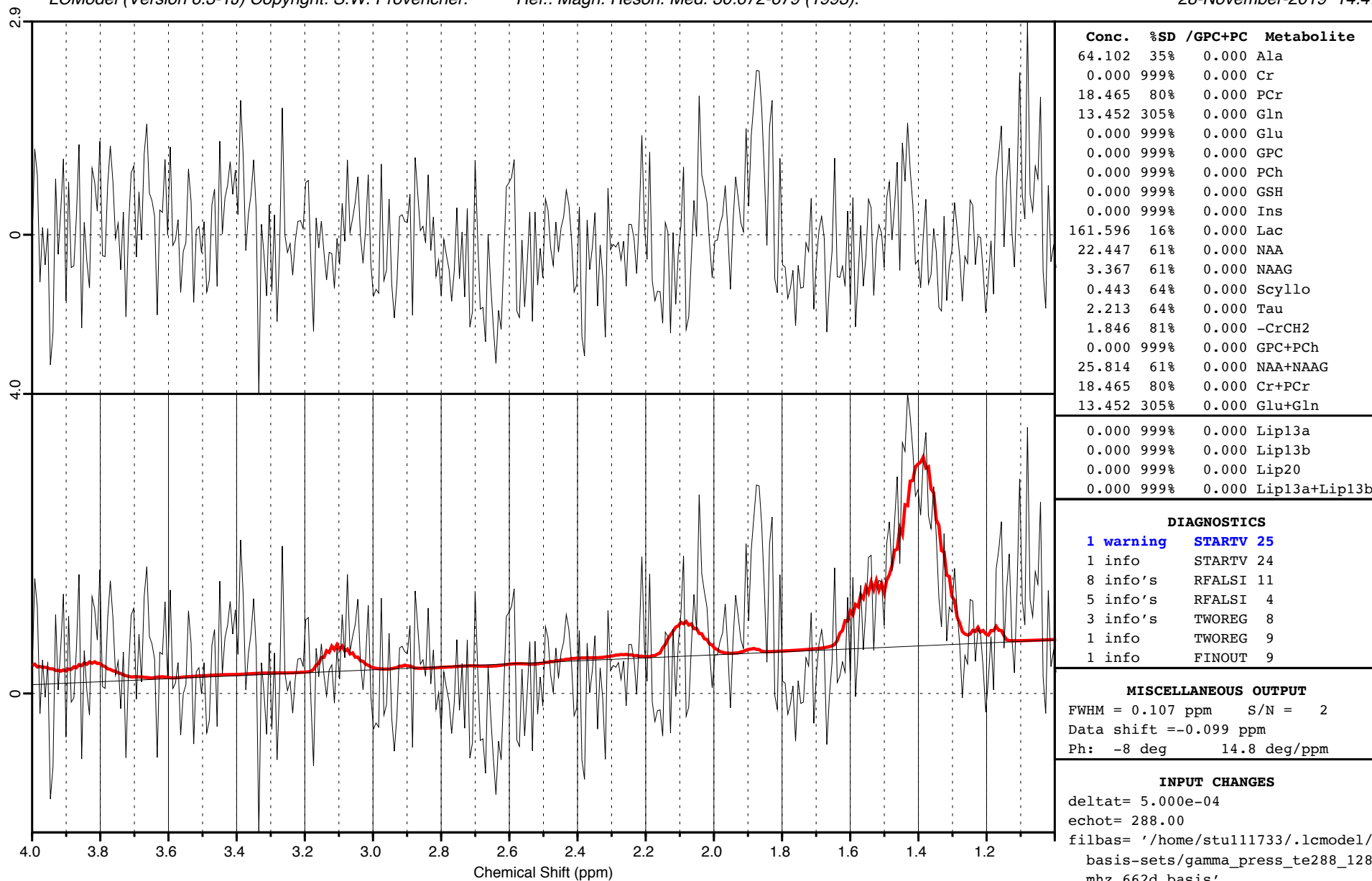
Row#8 Col#5 MR Hirn (2018.11.14 09:25:43) Subject 14 8.00e-01 mL, TE/TR/NS=288/1500/1 (s2DSI\_TE288 TR1500)

Data of: Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.

Ref.: Magn. Reson. Med. 30:672-679 (1993).

28-November-2019 14:47



Conc.	%SD	/GPC+PC	Metabolite
64.102	35%	0.000	Ala
0.000	99%	0.000	Cr
18.465	80%	0.000	PCr
13.452	305%	0.000	Gln
0.000	99%	0.000	Glu
0.000	99%	0.000	GPC
0.000	99%	0.000	PCh
0.000	99%	0.000	GSH
0.000	99%	0.000	Ins
161.596	16%	0.000	Lac
22.447	61%	0.000	NAA
3.367	61%	0.000	NAAG
0.443	64%	0.000	Scyllo
2.213	64%	0.000	Tau
1.846	81%	0.000	-CrCH2
0.000	99%	0.000	GPC+PCh
25.814	61%	0.000	NAA+NAAG
18.465	80%	0.000	Cr+PCr
13.452	305%	0.000	Glu+Gln
0.000	99%	0.000	Lip13a
0.000	99%	0.000	Lip13b
0.000	99%	0.000	Lip20
0.000	99%	0.000	Lip13a+Lip13b

DIAGNOSTICS		
1 warning	STARTV	25
1 info	STARTV	24
8 info's	RFALSI	11
5 info's	RFALSI	4
3 info's	TWOREG	8
1 info	TWOREG	9
1 info	FINOUT	9

MISCELLANEOUS OUTPUT		
FWHM	= 0.107 ppm	S/N = 2
Data shift	= -0.099 ppm	
Ph:	-8 deg	14.8 deg/ppm

INPUT CHANGES		
deltat	= 5.000e-04	
echot	= 288.00	
filbas	= '/home/stu11733/.lcmodel/ basis-sets/gamma_press_te288_128 mhz_662d.basis'	
hzpppm	= 1.2776e+02	

Row#8 Col#5 MR Hirn (2018.11.14 09:25:43) Subject 14 8.00e-01 mL, TE/TR/NS=288/1500/1 (s2DSI\_TE288 TR1500)

Data of: *Sektion Biomedizinische Bildgebung, Christian-Albrechts-Universitaet zu Kiel*

LCModel (Version 6.3-1J) Copyright: S.W. Provencher.      Ref.: Magn. Reson. Med. 30:672-679 (1993).

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<div><div><div><div><div>Conc.</div><div>%SD</div><div>/GPC+PC</div><div>Metabolite</div></div><div><div>64.102</div><div>35%</div><div>0.000</div><div>Ala</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Cr</div></div><div><div>18.465</div><div>80%</div><div>0.000</div><div>PCr</div></div><div><div>13.452</div><div>305%</div><div>0.000</div><div>Gln</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Glu</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>GPC</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>PCh</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>GSH</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>Ins</div></div><div><div>161.596</div><div>16%</div><div>0.000</div><div>Lac</div></div><div><div>22.447</div><div>61%</div><div>0.000</div><div>NAA</div></div><div><div>3.367</div><div>61%</div><div>0.000</div><div>NAAG</div></div><div><div>0.443</div><div>64%</div><div>0.000</div><div>Scyllo</div></div><div><div>2.213</div><div>64%</div><div>0.000</div><div>Tau</div></div><div><div>1.846</div><div>81%</div><div>0.000</div><div>-CrCH2</div></div><div><div>0.000</div><div>999%</div><div>0.000</div><div>GPC+PCh</div></div><div><div>25.814</div><div>61%</div><div>0.000</div><div>NAA+NAAG</div></div><div><div>18.465</div><div>80%</div><div>0.000</div><div>Cr+PCr</div></div><div><div>13.452</div><div>305%</div><div>0.000</div><div>Glu+Gln</div></div></div></div></div> <div><div>hzpppm= 1.2776e+02</div><div>icolen= 7</div><div>icolst= 5</div><div>irowen= 8</div><div>irowst= 8</div><div>islice= 1</div><div>lps= 8</div><div>ltable= 7</div><div>ndcols= 16</div><div>ndrows= 20</div><div>ndslic= 1</div><div>nunfil= 1024</div><div>ppmend= 1.0</div><div>ppmst= 4.0</div><div>savdir= '/home/stu111733/.lcmodel/saved/MR_Hirn/s14/2018.11.14_09:25:43/'</div><div>sptype= 'tumor'</div><div>srcraw= '/home/data/Studies/GBM_Spektrum/data/s14/spectro01/spectro01_8_1_raw_act.SD</div><div>AT'</div></div>
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