

Lipid N-formylation Occurs During Fixation with Formalin

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Supplementary Table S1. Detected lipid transitions in mice brain.

Compound name	Precursorion	Production	Retention time
MAG(14:0)	320.2	285.2	1.6
MAG(15:1)*	332.2	297.2	1.5
MAG(16:0)	348.3	313.3	1.82
MAG(18:0)	376.3	341.3	2.18
MAG(20:0)	404.3	369.3	4.45
MAG(20:1)	402.3	367.3	3.5
MAG(20:4)	396.3	361.3	1.54
CE(10:0)*	558.5	369.2	14.63
CE(14:0)	614.5	369.2	18.3
CE(16:0)	642.6	369.2	19.26
CE(16:1)	640.6	369.2	18.33
CE(18:0)	670.6	369.2	19.97
CE(18:1)	668.6	369.2	19.23
CE(18:2)	666.6	369.2	18.35
CE(18:3)	664.6	369.2	17.24
CE(20:1)	696.6	369.2	19.96
CE(20:3)	692.6	369.2	18.46
CE(20:4)	690.6	369.2	17.65
CE(22:2)	722.6	369.2	19.94
CE(22:4)	718.6	369.2	18.57
CE(22:6)	714.6	369.2	16.78
Cholesterol	404	369.2	4.45
DAG(16:0)*	362.2	327.2	1.54
DAG(30:0)	558.5	523.5	6.47
DAG(32:0)	586.5	551.5	8.46
DAG(34:0)	614.5	579.5	10.43
DAG(34:1)	612.5	577.5	8.55
DAG(36:0)	642.6	607.6	12.48
DAG(36:1)	640.5	605.5	10.49
DAG(38:0)	670.6	635.6	14.51
DAG(38:1)	668.6	633.6	12.63

Supplementary Table S1. Detected lipid transitions in mice brain.

Compound name	Precursorion			Production			Retention time		
DAG(38:2)	666.6			631.6			10.69		
DAG(38:3)	664.5			629.5			8.63		
DAG(40:0)	698.6			663.6			16.3		
DAG(40:1)	696.6			661.6			14.6		
DAG(42:0)	726.6			691.6			18.21		
DAG(42:1)	724.6			689.6			16.88		
DAG(44:1)	752.7			717.7			18.2		
Cer(d16:1-18:0)	538.4			236.1			5.71		
Cer(d16:1-20:0)	566.4			236.1			7.57		
Cer(d18:1-12:0)*	482.4			264.1			3.42		
Cer(d18:1-18:0)	566.4			264.1			7.53		
Cer(d18:1-18:1)	564.4			264.1			5.96		
Cer(d18:1-20:0)	594.4			264.1			9.57		
Cer(d18:1-20:1)	592.4			264.1			7.75		
Cer(d18:1-22:0)	622.4			264.1			11.68		
Cer(d18:1-22:1)	620.4			264.1			9.57		
Cer(d18:1-22:2)	618.4			264.1			7.75		
Cer(d18:1-22:6)	610.4			264.1			3.82		
Cer(d18:1-24:0)	650.4			264.1			13.78		
Cer(d18:1-24:1)	648.4			264.1			11.74		
TAG(33:3)*	608.5			407.3			3.92		
TAG(42:0)	740.68	579.5		551.5	523.5	495.5	16.7		
TAG(44:1)	766.69		549.5			521.5	17		
TAG(44:0)	768.71		551.5			523.5	18.02		
TAG(46:2)	792.71		575.5			547.5	17.01		
TAG(46:1)	794.72		577.5			549.5	18.08		
TAG(46:0)	796.74		579.5			551.5	18.89		
TAG(48:3)	818.72		573.5			547.5	17.42		
TAG(48:2)	820.74	603.5		575.5		547.5	18.17		
TAG(48:1)	822.76	605.5		577.5		549.5	18.95		
TAG(48:0)	824.77	607.5		579.5		551.5	19.52		
TAG(50:3)	846.76	601.5		575.5		573.5	18.33		
TAG(50:2)	848.77	603.5		577.5		575.5	18.92		
TAG(50:1)	850.8	633.5		605.5		577.5	19.55		
TAG(50:0)	852.8	635.5		607.5		579.5	20.05		
TAG(52:4)	872.77	627.5		601.5		599.5	18.57	18.1	
TAG(52:3)	874.79	629.5		603.5	601.5	551.5	19.04	18.92	
TAG(52:2)	876.8	631.5		605.5		603.5	19.64		
TAG(52:1)	878.82	661.5		605.5	633.5	607.5	20.05		
TAG(52:0)	880.82	691.5		635.5		607.5	20.49		
TAG(54:5)	898.79	627.5	603.5	601.5	579.5	577.5	549.5	18.19	18.63
TAG(54:4)	900.82	629.5	627.5	603.5	599.5	577.5	551.5	19.13	
TAG(54:3)	902.82	631.5		605.5	603.5	579.5		19.52	
TAG(54:2)	904.82	633.5	607.5	603.5	577.5	549.5		20.1	

Lipid *N*-formylation Occurs During Fixation with Formalin

Supplementary Table S1. Detected lipid transitions in mice brain.

Compound name	Precursorion		Production				Retention time
TAG(54:1)	906.82	635.5 607.5	579.5	551.5	523.5		20.48
TAG(54:0)	908.82	663.5	607.5		551.5		20.86
TAG(56:7)	922.79	603.5	599.5		577.5		18.16
TAG(56:5)	926.82	629.5	605.5	603.5	577.5		19.3
TAG(56:3)	930.82	659.5 635.5	633.5	631.5	607.5		20
TAG(56:2)	932.82	661.5 635.5	633.5	605.5	577.5	549.5	20.5
TAG(56:1)	934.82	633.5 605.5	577.5	551.5	549.5		20.85
TAG(56:0)	936.82	607.5	579.5		551.5		21.2
TAG(58:7)	950.82	627.5			605.5		18.1
TAG(58:6)	952.82	653.5			607.5		19.53
TAG(58:2)	960.82	661.5	633.5	605.5	577.5		20.88
TAG(58:1)	962.82	661.5	633.5	605.5	577.5		21.2
PtdCho(20:0)*	566.3		183.9				1.77
PtdCho(30:6)	694.5		183.9				4.55
PtdCho(32:6)	722.5		183.9				5.95
PtdCho(34:6)	750.5		183.9				7.83
PtdCho(36:2)	786.5		183.9				11.37
PtdCho(36:6)	778.5		183.9				7.81
PtdCho(36:8)	774.5		183.9				6.19
PtdCho(38:0)	818.5		183.9				14.496
PtdCho(38:1)	816.5		183.9				13.61
PtdCho(38:3)	812.5		183.9				11.36
PtdCho(38:5)	808.5		183.9				10
PtdCho(38:8)	802.5		183.9				8.03
PtdCho(38:9)	800.5		183.9				6.3
PtdCho(40:0)	846.5		183.9				15.29
PtdCho(40:3)	840.5		183.9				13.456
PtdCho(40:7)	832.5		183.9				10.02
PtdCho(40:8)	830.5		183.9				7.988
PtdCho(42:0)	874.5		183.9				17.24
PtdCho(42:1)	872.5		183.9				15.274
PtdCho(42:2)	870.5		183.9				13.22
PtdCho(42:3)	868.5		183.9				11.29
PtdCho(42:4)	866.5		183.9				10.34
PtdCho(42:5)	864.5		183.9				8.52
PtdCho(42:6)	862.5		183.9				7.59
PtdCho(42:7)	860.5		183.9				5.812
PtdCho(42:8)	858.5		183.9				4.54
PtdCho(42:9)	856.5		183.9				3.76
PtdCho(42:10)	854.5		183.9				3.26
PtdCho(44:1)	900.5		183.9				17.256
PtdCho(44:2)	898.5		183.9				15.23
PtdCho(44:4)	894.5		183.9				12.79
PtdCho(44:5)	892.5		183.9				10.66

Supplementary Table S1. Detected lipid transitions in mice brain.

Compound name	Precursorion	Production	Retention time
PtdCho(44:6)	890.5	183.9	9.71
PtdCho(44:7)	888.5	183.9	7.63
PtdCho(44:8)	886.5	183.9	5.49
PtdCho(44:9)	884.5	183.9	4.716
PtdCho(44:10)	882.5	183.9	3.95
PtdCho(44:11)	880.5	183.9	2.95
PtdCho(44:12)	878.5	183.9	2.98
PtdCho(46:1)	928.5	183.9	18.46
PtdCho(46:2)	926.5	183.9	17.14
PtdCho(46:4)	922.5	183.9	14.84
PtdCho(46:5)	920.5	183.9	12.76
PtdCho(46:6)	918.5	183.9	11.88
PtdCho(46:7)	916.5	183.9	9.72
lysoPtdCho(13:0)*	454.1	183.9	1.39
lysoPtdCho(14:0)	468.1	183.9	1.46
lysoPtdCho(16:0)	496.1	183.9	1.66
lysoPtdCho(16:1)	494.1	183.9	1.48
lysoPtdCho(18:0)	524.1	183.9	1.96
lysoPtdCho(18:1)	522.1	183.9	1.65
lysoPtdCho(18:2)	520.1	183.9	1.502
lysoPtdCho(20:0)	552.1	183.9	2.32
lysoPtdCho(20:1)	550.1	183.9	1.94
lysoPtdCho(20:2)	548.1	183.9	1.69
lysoPtdCho(20:3)	546.1	183.9	1.51
lysoPtdCho(20:4)	544.1	183.9	1.43
lysoPtdCho(22:0)	580.1	183.9	2.9
lysoPtdCho(22:1)	578.1	183.9	2.32
lysoPtdCho(22:2)	576.1	183.9	1.91
lysoPtdCho(22:3)	574.1	183.9	1.72
lysoPtdCho(22:4)	572.1	183.9	1.54
lysoPtdCho(24:0)	608.1	183.9	3.7
lysoPtdCho(24:1)	606.1	183.9	2.867
Sph(d17:1)*	286.3	250.1	1.39
Sph(d18:1)	300.3	264.1	1.47
CerPCho(d18:1-12:0)*	647.3	183.9	3.272
CerPCho(d18:1-14:0)	675.3	183.9	4.1673
CerPCho(d18:1-16:0)	703.3	183.9	5.3913
CerPCho(d18:1-16:1)	701.3	183.9	4.1886
CerPCho(d18:1-18:0)	731.3	183.9	7.01
CerPCho(d18:1-18:1)	729.3	183.9	5.416
CerPCho(d18:1-18:2)	727.3	183.9	4.2766
CerPCho(d18:1-20:0)	759.3	183.9	9.089
CerPCho(d18:1-20:1)	757.3	183.9	7.076
CerPCho(d18:1-22:0)	787.3	183.9	11.253

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Compound name	Precursorion	Production	Retention time
CerPCho(d18:1-22:1)	785.3	183.9	9.1473
CerPCho(d18:1-22:3)	781.3	183.9	4.8493
CerPCho(d18:1-22:5)	777.3	183.9	3.14
CerPCho(d18:1-24:0)	815.3	183.9	12.28
CerPCho(d18:1-24:1)	813.3	183.9	11.286
PtdEtn(20:0)*	524.4	383.3	1.739
PtdEtn(32:0)	692.4	551.3	6.65
PtdEtn(32:1)	690.4	549.3	5.11
PtdEtn(34:0)	720.4	579.3	8.574
PtdEtn(34:1)	718.4	577.3	6.751
PtdEtn(34:2)	716.4	575.3	5.244
PtdEtn(34:3)	714.4	573.3	4.142
PtdEtn(34:4)	712.4	571.3	3.762
PtdEtn(36:0)	748.4	607.3	10.616
PtdEtn(36:1)	746.4	605.3	8.716
PtdEtn(36:2)	744.4	603.3	6.874
PtdEtn(36:3)	742.4	601.3	5.376
PtdEtn(36:4)	740.4	599.3	4.82
PtdEtn(36:5)	738.4	597.3	3.796
PtdEtn(38:1)	774.4	633.3	10.697
PtdEtn(38:2)	772.4	631.3	8.774
PtdEtn(38:3)	770.4	629.3	6.328
PtdEtn(38:4)	768.4	627.3	4.93
PtdEtn(38:5)	766.4	625.3	4.321
PtdEtn(38:6)	764.4	623.3	3.902
PtdEtn(40:1)	802.4	661.3	12.8
PtdEtn(40:2)	800.4	659.3	10.79
PtdEtn(40:3)	798.4	657.3	9.467
PtdEtn(40:4)	796.4	655.3	7.768
PtdEtn(40:5)	794.4	653.3	5.632
PtdEtn(40:7)	790.4	649.3	3.53
PtdEtn(42:1)	830.4	689.3	14.752
PtdEtn(42:3)	826.4	685.3	10.428
PtdEtn(42:4)	824.4	683.3	8.293
PtdEtn(42:5)	822.4	681.3	6.12
PtdEtn(42:6)	820.4	679.3	5.204
PtdEtn(42:7)	818.4	677.3	4.432
PtdEtn(42:8)	816.4	675.3	3.69
PtdEtn(42:9)	814.4	673.3	3.224
PtdEtn(44:4)	852.4	711.3	10.391
PtdEtn(44:8)	844.4	703.3	4.665
PtdEtn(44:10)	840.4	699.3	3.877
lysoPtdEtn(14:0)*	426.3	285.2	1.43
lysoPtdEtn(16:0)	454.3	313.2	1.59

Supplementary Table S1. Detected lipid transitions in mice brain.

Compound name	Precursorion	Production	Retention time
lysoPtdEtn(16:1)	452.3	311.2	1.43
lysoPtdEtn(18:0)	482.3	341.2	1.88
lysoPtdEtn(18:1)	480.3	339.2	1.6
lysoPtdEtn(18:2)	478.3	337.2	1.46
lysoPtdEtn(20:0)	510.3	369.2	2.14
lysoPtdEtn(20:1)	508.3	367.2	1.84
lysoPtdEtn(20:2)	506.3	365.2	1.628
lysoPtdEtn(20:3)	504.3	363.2	1.49
lysoPtdEtn(20:4)	502.3	361.2	1.416
lysoPtdEtn(20:5)	500.3	359.2	1.319
lysoPtdEtn(22:0)	538.3	397.2	2.2
lysoPtdEtn(22:1)	536.3	395.2	2.1
lysoPtdEtn(22:2)	534.3	393.2	1.88
lysoPtdEtn(22:3)	532.3	391.2	1.65
lysoPtdEtn(22:4)	530.3	389.2	1.537
lysoPtdEtn(22:5)	528.3	387.2	1.39
lysoPtdEtn(24:1)	564.3	423.2	2.22
dhCer(d18:0-12:0)*	484.4	266.1	3.706
dhCer(d18:0-18:0)	568.4	266.1	7.524
dhCer(d18:0-20:1)	594.4	266.1	7.76
dhCer(d18:0-22:0)	624.4	266.1	9.216
dhCer(d18:0-22:1)	622.4	266.1	8.042
dhCer(d18:0-24:0)	652.4	266.1	11.27
dhCer(d18:0-24:1)	650.4	266.1	9.28
PtdOH(20:0)*	509.5	383.3	1.824
PtdOH(40:4)	781.5	655.3	9.074
PtdOH(40:5)	779.5	653.3	8.392
PtdOH(40:6)	777.5	651.3	7.529
PtdOH(40:7)	775.5	649.3	5.716
PtdOH(42:4)	809.5	683.3	11.602
PtdOH(42:7)	803.5	677.3	7.735
PtdOH(44:4)	837.5	711.3	14.694
lysoPtdOH(14:0)	411.3	285.2	1.58
lysoPtdOH(16:0)	439.3	313.2	1.914
lysoPtdOH(16:1)	437.3	311.2	1.584
lysoPtdOH(17:0)*	453.3	327.2	2.09
lysoPtdOH(18:0)	467.3	341.2	2.262
lysoPtdOH(18:1)	465.3	339.2	1.947
lysoPtdOH(18:2)	463.3	337.2	1.6
lysoPtdOH(20:0)	495.3	369.2	2.555
lysoPtdOH(20:1)	493.3	367.2	2.294
lysoPtdOH(20:2)	491.3	365.2	1.99
lysoPtdOH(20:3)	489.3	363.2	1.602
lysoPtdOH(22:0)	523.3	397.2	3.29

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Compound name	Precursorion	Production	Retention time
lysoPtdOH(22:1)	521.3	395.2	2.57
lysoPtdOH(22:2)	519.3	393.2	2.351
lysoPtdOH(22:4)	515.3	389.2	1.62
lysoPtdOH(24:0)	551.3	425.2	4.418
lysoPtdOH(24:1)	549.3	423.2	3.319
PtdIns(16:0)*	601.6	327.3	11.224
PtdIns(30:0)	797.6	523.3	18.86
PtdIns(32:0)	825.6	551.3	19.47
PtdIns(32:1)	823.6	549.3	18.93
PtdIns(32:2)	821.6	547.3	18.285
PtdIns(34:0)	853.6	579.3	20
PtdIns(34:1)	851.6	577.3	19.48
PtdIns(36:1)	879.6	605.3	19.96
lysoPtdIns(13:0)*	545.2	271.1	1.34
lysoPtdIns(16:0)	587.2	313.1	1.572
lysoPtdIns(16:1)	585.2	311.1	1.427
lysoPtdIns(18:0)	615.2	341.1	1.932
lysoPtdIns(18:1)	613.2	339.1	1.59
lysoPtdIns(20:3)	637.2	363.1	1.413
C1P(d16:1-14:0)	590.5	236.1	10.94
C1P(d18:1-12:0)*	590.5	264.1	10.838
C1P(d18:1-14:0)	618.5	264.1	11.6893
C1P(d18:1-16:0)	646.5	264.1	13.7
C1P(d18:1-18:0)	674.5	264.1	13.73
C1P(d18:1-20:0)	702.5	264.1	14.916
C1P(d18:1-20:1)	700.5	264.1	13.24
C1P(d18:1-20:2)	698.5	264.1	12.7
C1P(d18:1-22:1)	728.5	264.1	14.66
C1P(d18:1-22:2)	726.5	264.1	14.084
C1P(d18:1-22:3)	724.5	264.1	12.712
PtdSer(20:0)*	596.6	383.3	1.672
PtdSer(32:0)	764.6	551.3	7.684
PtdSer(32:1)	762.6	549.3	9
PtdSer(32:2)	760.6	547.3	7.86
PtdSer(32:3)	758.6	545.3	6.072
PtdSer(36:0)	820.6	607.3	9.798
PtdSer(36:2)	816.6	603.3	7.964
PtdSer(36:3)	814.6	601.3	6.2906
PtdSer(36:4)	812.6	599.3	5.572
PtdSer(38:0)	848.6	635.3	11.68
PtdSer(38:1)	846.6	633.3	9.87
PtdSer(38:2)	844.6	631.3	9.04
PtdSer(38:3)	842.6	629.3	8.396
PtdSer(38:4)	840.6	627.3	6.622

Supplementary Table S1. Detected lipid transitions in mice brain.

Compound name	Precursorion	Production	Retention time
PtdSer(38:5)	838.6	625.3	5.666
PtdSer(38:6)	836.6	623.3	4.932
PtdSer(38:7)	834.6	621.3	3.8
PtdSer(40:2)	872.6	659.3	10.48
PtdSer(40:3)	870.6	657.3	8.848
PtdSer(40:4)	868.6	655.3	8.118
PtdSer(40:5)	866.6	653.3	6.61
PtdSer(40:6)	864.6	651.3	6.54
PtdSer(40:7)	862.6	649.3	5.081
PtdSer(40:8)	860.6	647.3	4.03
PtdSer(40:9)	858.6	645.3	3.276
PtdSer(42:3)	898.6	685.3	10.5013
PtdSer(42:4)	896.6	683.3	9.33
PtdSer(42:6)	892.6	679.3	7.136
PtdSer(42:7)	890.6	677.3	6.63
PtdSer(42:8)	888.6	675.3	5.128
PtdSer(42:9)	886.6	673.3	4.118
PtdSer(42:10)	884.6	671.3	3.659
PtdSer(44:6)	920.6	707.3	8.6473
PtdSer(44:8)	916.6	703.3	6.1091
PtdSer(44:10)	912.6	699.3	3.6513
lysoPtdSer(16:0)	526.3	313.2	1.62
lysoPtdSer(16:1)	524.3	311.2	1.501
lysoPtdSer(17:1)*	538.3	325.2	1.6
lysoPtdSer(18:0)	554.3	341.2	2.023
lysoPtdSer(18:1)	552.3	339.2	1.6166
lysoPtdSer(20:0)	582.3	369.2	2.4213
lysoPtdSer(20:2)	578.3	365.2	1.6293
lysoPtdSer(20:3)	576.3	363.2	1.5553
lysoPtdSer(22:1)	608.3	395.2	2.4426
lysoPtdSer(22:3)	604.3	391.2	1.616
lysoPtdSer(22:4)	602.3	389.2	1.582
lysoPtdSer(22:5)	600.3	387.2	1.432
PtdGro(20:0)*	569.4	383.3	1.934
PtdGro(34:1)	763.4	577.3	9.78
PtdGro(36:1)	791.4	605.3	11.8068
PtdGro(36:2)	789.4	603.3	9.938
PtdGro(38:1)	819.4	633.3	13.692
lysoPtdGro(14:0)*	471.1	285.2	1.642
lysoPtdGro(16:0)	499.1	313.2	1.7646
lysoPtdGro(16:1)	497.1	311.2	1.4046
lysoPtdGro(18:0)	527.1	341.2	2.2853
lysoPtdGro(18:1)	525.1	339.2	1.772
lysoPtdGro(20:4)	547.1	361.2	1.486
lysoPtdGro(22:6)	571.1	385.2	1.432

* : Internal standard

a. Anionic lipids analyzed after TMSD derivatization