

Title	Lipidome analysis in brain and peripheral plasma following milk fat globule membrane supplementation in rodents
Authors	Davies, R.;van Diepen, J. A.;Brink, L. R.;Bijlsma, S.;Neufeld, K. M.;Cryan, John F.;O'Mahony, Siobhain M.;Bobeldijk, I.;Gross, G.
Publication date	2022-09-06
Original Citation	Davies, R., van Diepen, J.A., Brink, L.R., Bijlsma, S., Neufeld, K.M., Cryan, J.F., O'Mahony, S.M., Bobeldijk, I. and Gross, G. (2022) 'Lipidome analysis in brain and peripheral plasma following milk fat globule membrane supplementation in rodents', Molecular Nutrition & Food Research, 2200177, doi: 10.1002/mnfr.202200177
Type of publication	Article (peer-reviewed)
Link to publisher's version	<a href="https://doi.org/10.1002/mnfr.202200177">https://doi.org/10.1002/mnfr.202200177</a> - <a href="https://doi.org/10.1002/mnfr.202200177">10.1002/mnfr.202200177</a>
Rights	© 2022 WILEY-VCH Verlag GmbH & Co. KGaA. This is the peer reviewed version of the following article: Lipidome analysis in brain and peripheral plasma following milk fat globule membrane supplementation in rodents. Mol. Nutr. Food Res. 2022, 2200177, which has been published in final form at <a href="https://doi.org/10.1002/mnfr.202200177">https://doi.org/10.1002/mnfr.202200177</a> . This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Use of Self-Archived Versions. This article may not be enhanced, enriched or otherwise transformed into a derivative work, without express permission from Wiley or by statutory rights under applicable legislation. Copyright notices must not be removed, obscured or modified. The article must be linked to Wiley's version of record on Wiley Online Library and any embedding, framing or otherwise making available the article or pages thereof by third parties from platforms, services and websites other than Wiley Online Library must be prohibited.
Download date	2024-03-02 07:56:07
Item downloaded from	<a href="https://hdl.handle.net/10468/13706">https://hdl.handle.net/10468/13706</a>



# UCC

**University College Cork, Ireland**  
Coláiste na hOllscoile Corcaigh

## SUPPLEMENTARY DATA

Supplementary Table 1: Diet composition of the two animal studies (g/kg), based on AIN-93G specifications.

Ingredient	Mouse control	Mouse MFGM+	Rat control	Rat MFGM+
Casein	200.0	176.84	200.0	187.0
L-Cystine	3.0	3.0	3.0	3.0
Corn/maize starch	397.5	397.5	392.4	392.5
Maltodextrin	132.0	132.0	132.0	132.0
Sucrose	100.0	100.0	100.0	100.0
Lactose monohydrate	-	-	7.5	7.5
Soyabean oil	70.0	70.0	64.7	61.5
Cellulose	50.0	50.0	50.0	50.0
Mineral mix	35.0	35.0	27.6 <sup>a</sup>	27.8 <sup>a</sup>
Vitamin mix	10.0	10.0	15.0 <sup>b</sup>	15.0 <sup>b</sup>
Choline bitartrate	2.5	2.5	2.5	2.5
TBHQ/antioxidant	0.03	0.03	0.01	0.01
DHA/ARA oil	-	-	5.3	5.3
Whey protein concentrate MFGM-10	-	23.16	-	15.90

ARA=arachidonic acid; DHA=docosahexaenoic acid; MFGM=milk fat globule membrane; TBHQ=tertiary butylhydroquinone

<sup>a</sup> Mineral mix (without Ca and P) + Calcium carbonate + Calcium phosphate dibasic

<sup>b</sup> Vitamin mix AIN-93-VX, Thiamin HCl, Vitamin K1

**Supplementary Table 2: Phospholipids across three classes, sphingomyelin, phosphatidylcholine and lysophosphatidylcholine, detected and quantified in the current targeted lipidomics experiment.**

Lipid name	HMDB ID	Alternative name	Lipid class
SM(d18:1/24:1(15Z))	HMDB12107	C24:1 SM	SM
SM(d18:1/24:0)	HMDB11697	C24:0 SM	SM
SM(d18:1/23:1(9Z))	HMDB0240614	C23:1 SM	SM
SM(d18:1/23:0)	HMDB12105	C23:0 SM	SM
SM(d18:1/22:1(13Z))	HMDB12104	C22:1 SM	SM
SM(d18:1/22:0)	HMDB12103	C22:0 SM	SM
SM(d18:1/20:1(11Z))	HMDB0240610	C20:1 SM	SM
SM(d18:1/20:0)	HMDB12102	C20:0 SM	SM
SM(d18:1/18:1(9Z))	HMDB12101	C18:1 SM	SM
SM(d18:1/18:0)	HMDB01348	C18:0 SM	SM
SM(d18:1/16:0)	HMDB10169	C16:0 SM	SM
SM(d18:1/14:0)	HMDB12097	C14:0 SM	SM
SM(d18:0/16:1(9Z))	HMDB13464	C16:1 SM	SM
SM(d17:1/24:1(15Z))	HMDB11696	C24:2 SM	SM
PC(18:1(11Z)/22:6(4Z,7Z,10Z,13Z,16Z,19Z))	HMDB08090	C40:7 PC	PC
PC(18:0/22:6(4Z,7Z,10Z,13Z,16Z,19Z))	HMDB08057	C40:6 PC	PC
PC(18:0/22:5(4Z,7Z,10Z,13Z,16Z))	HMDB08055	C40:5 PC	PC
PC(18:0/22:4(7Z,10Z,13Z,16Z))	HMDB08054	C40:4 PC	PC
PC(16:1(9Z)/22:2(13Z,16Z))	HMDB08020	C38:3 PC	PC
PC(16:0/22:6(4Z,7Z,10Z,13Z,16Z,19Z))	HMDB07991	C38:6 PC	PC
PC(16:0/22:5(4Z,7Z,10Z,13Z,16Z))	HMDB07989	C38:5 PC	PC
PC(16:0/22:4(7Z,10Z,13Z,16Z))	HMDB07988	C38:4 PC	PC
PC(14:1(9Z)/24:1(15Z))	HMDB07927	C38:2 PC	PC
PC(14:1(9Z)/22:2(13Z,16Z))	HMDB07921	C36:3 PC	PC
PC(14:0/24:1(15Z))	HMDB07894	C38:1 PC	PC
PC(14:0/22:4(7Z,10Z,13Z,16Z))	HMDB07889	C36:4 PC	PC
PC(14:0/22:2(13Z,16Z))	HMDB07888	C36:2 PC	PC
PC(14:0/22:1(13Z))	HMDB07887	C36:1 PC	PC
PC(14:0/22:0)	HMDB07886	C36:0 PC	PC
PC(14:0/20:4(5Z,8Z,11Z,14Z))	HMDB07883	C34:4 PC	PC
PC(14:0/20:3(5Z,8Z,11Z))	HMDB07881	C34:3 PC- <i>sn1</i>	PC
PC(14:0/20:3(5Z,8Z,11Z))	HMDB07881	C34:3 PC- <i>sn2</i>	PC
PC(14:0/20:2(11Z,14Z))	HMDB07880	C34:2 PC	PC
PC(14:0/20:1(11Z))	HMDB07879	C34:1 PC	PC
PC(14:0/20:0)	HMDB07878	C34:0 PC	PC
PC(14:0/18:2(9Z,12Z))	HMDB07874	C32:2 PC	PC
PC(14:0/18:1(11Z))	HMDB07872	C32:1 PC	PC
PC(14:0/18:0)	HMDB07871	C32:0 PC	PC

<b>Lipid name</b>	<b>HMDB ID</b>	<b>Alternative name</b>	<b>Lipid class</b>
PC(14:0/16:1(9Z))	HMDB07870	C30:1 PC	PC
LysoPC(22:6(4Z,7Z,10Z,13Z,16Z,19Z))	HMDB10404	C22:6 LPC- <i>sn1</i>	LysoPC
LysoPC(22:6(4Z,7Z,10Z,13Z,16Z,19Z))	HMDB10404	C22:6 LPC- <i>sn2</i>	LysoPC
LysoPC(22:5(4Z,7Z,10Z,13Z,16Z))	HMDB10402	C22:5 LPC- <i>sn1</i>	LysoPC
LysoPC(20:4(5Z,8Z,11Z,14Z))	HMDB10395	C20:4 LPC- <i>sn1</i>	LysoPC
LysoPC(20:4(5Z,8Z,11Z,14Z))	HMDB10395	C20:4 LPC- <i>sn2</i>	LysoPC
LysoPC(20:3(5Z,8Z,11Z))	HMDB10393	C20:3 LPC- <i>sn1</i>	LysoPC
LysoPC(20:2(11Z,14Z))	HMDB10392	C20:2 LPC- <i>sn1</i>	LysoPC
LysoPC(20:1(11Z))	HMDB10391	C20:1 LPC- <i>sn1</i>	LysoPC
LysoPC(20:0)	HMDB10390	C20:0 LPC- <i>sn1</i>	LysoPC
LysoPC(18:2(9Z,12Z))	HMDB10386	C18:2 LPC- <i>sn1</i>	LysoPC
LysoPC(18:2(9Z,12Z))	HMDB10386	C18:2 LPC- <i>sn2</i>	LysoPC
LysoPC(18:1(11Z))	HMDB10385	C18:1 LPC- <i>sn1</i>	LysoPC
LysoPC(18:1(11Z))	HMDB10385	C18:1 LPC- <i>sn2</i>	LysoPC
LysoPC(16:1(9Z))	HMDB10383	C16:1 LPC- <i>sn1</i>	LysoPC
LysoPC(16:0)	HMDB10382	C16:0 LPC- <i>sn1</i>	LysoPC
LysoPC(16:0)	HMDB10382	C16:0 LPC- <i>sn2</i>	LysoPC
LysoPC(14:0)	HMDB10379	C14:0 LPC- <i>sn1</i>	LysoPC
LysoPC(0:0/18:0)	HMDB11128	C18:0 LPC- <i>sn1</i>	LysoPC
LysoPC(0:0/18:0)	HMDB11128	C18:0 LPC- <i>sn2</i>	LysoPC

HMDB=Human Metabolome Database; ID=identification; LysoPC=lysophosphatidylcholine; PC=phosphatidylcholines; SM=sphingomyelin