

Peptide-Lipid Interactions: Insights and Perspectives

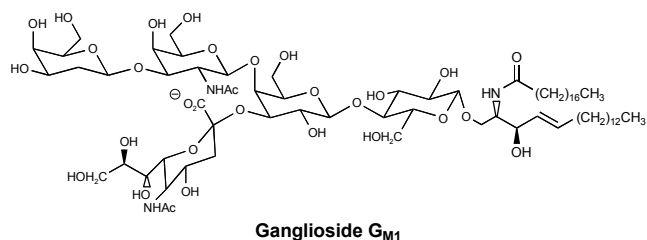
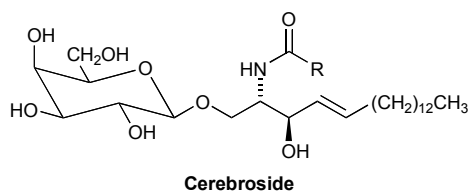
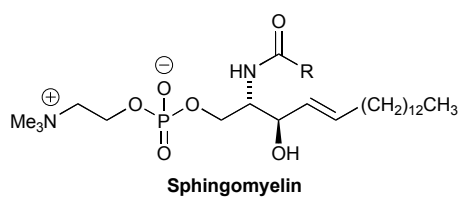
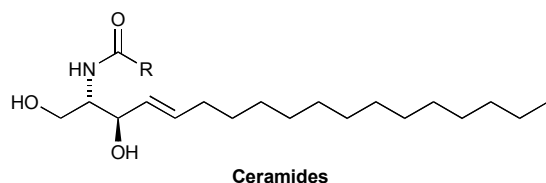
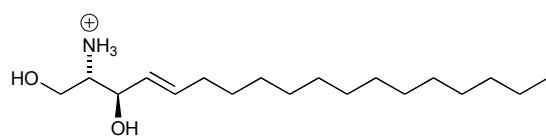
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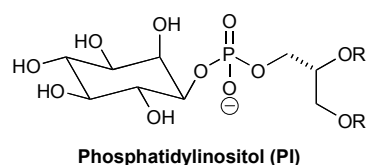
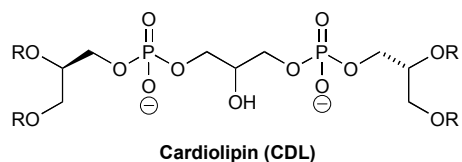
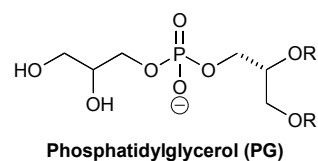
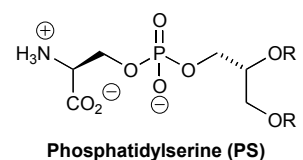
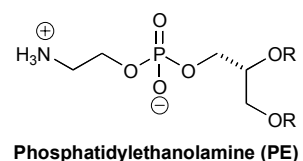
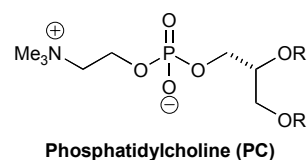
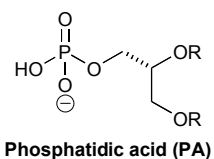
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Supplementary Information

Spingolipids



Glycerophospholipids



In all of the above lipids, *R* is usually acyl, although examples with *R* = alkyl are known (ether lipids). The nomenclature of lipid acyl groups is presented below.

Acyl group nomenclature

Three methods of naming acyl chains are presented here. The first is according to the length of the carbon chain and the number of olefinic bonds it contains. Thus C3:0 corresponds to propionyl, C4:0 to butanoyl, C4:1 to butenoyl and so on.†

Table 1 Nomenclature of acyl chains found in lipids.^a

Abbreviation	IUPAC	Trivial
C12:0	dodecanoyl	lauroyl
C14:0	tetradecanoyl	myristoyl
C16:0	hexadecanoyl	palmitoyl
C16:1	<i>cis</i> -9-hexadecanoyl	palmitoleoyl
C18:0	octadecanoyl	stearoyl
C18:1	<i>cis</i> -9-octadecenoyl	oleoyl
C18:2	<i>cis,cis</i> -9,12-octadecadienoyl	linoleoyl
C18:3	all <i>cis</i> -9,12,15-octadecatrienoyl	α -linolenoyl
C18:3	all <i>cis</i> -6,9,12-octadecatrienoyl	γ -linolenoyl
C20:0	eicosanoyl	arachidoyl
C20:1	<i>cis</i> -9-eicosanoyl	gadoleoyl
C20:4	all <i>cis</i> -5,8,11,14-eicosatetraenoyl	arachidonoyl
C22:0	docosanoyl	behenoyl
C24:0	tetracosanoyl	lignoceroyl
C24:1	<i>cis</i> -15-tetracosenoyl	nervonoyl
C26:0	hexacosanoyl	cerotoyl
C28:0	octacosanoyl	montanoyl

^a Adapted from reference 1.

Lipid composition of membranes

Eukaryotic membranes

Table 2 Typical lipid composition (% by weight) of some eukaryotic membranes^a

Lipid	Erythrocyte Plasma Membrane	Bovine Heart Mitochondrion	Rough Endoplasmic Reticulum
PC	19	39	55
PE	18	27	16
PS	8	0.5	3
PG	0	0	0
PI	1	7	8
Sphingomyelin	17.5	0	5
CDL	0	21	0
Cholesterol	25	3	6
Glycolipids	10	0	0
Other	1.5	2.5	7

^a Figures were obtained from reference 2.

Prokaryotic membranes

Table 3 Typical lipid composition (% by weight) of some prokaryotic membranes.

Lipid	<i>E. coli</i> cell membrane ²	<i>Streptomyces hygroscopicus</i> protoplast ³	<i>Salmonella sp.</i> ⁴
PC	0	0	0
PE	65	51	72
PS	0	0	0
PG	18	0	11
PI	0	0	0
Sphingomyelin	0	0	0
CDL	0	37	17
Cholesterol	0	0	0
Glycolipids	0	8	0
Other	17	4	0

References

† To develop this nomenclature further, the position of the double bond may be indicated. Thus C18:1 Δ^9 indicates an acyl chain of 18 carbons with a *cis* C=C double bond between the 9th and 10th carbon atoms of the chain (corresponding to an oleoyl group).

- 1 *Liposomes, a practical approach*, ed. R. R. C. New, IRL Press, Oxford, 1990, p. 7
- 2 *The Hydrophobic Effect*, C. Tanford, Wiley, New York, 1973.
- 3 C. Hoischen, K. Gura, C. Luge and J. Gumpert, *J. Bacteriol.*, 1997, **179**, 3430.
- 4 J. L. Wylie, G. M. Hatch and G. McClarty, *J. Bacteriol.*, 1997, **179**, 7233.

