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Phosphocholine (PC) is an intermediate in the synthesis of phosphatidylcholine in tissues. It is a molecule found for example in lecithin.

It is also used by nematodes and human placentas to suppress an immune response by their hosts.^[1] It is one of the natural constituents of hens' eggs (and many other eggs), in the form of Egg-PC, which is often used in biomimetic membrane studies.^[2] It is also one of the binding targets of C-Reactive Protein (CRP). Thus when a cell is damaged, CRP binds to phosphocholine beginning the recognition and phagocytotic immunologic response.

It can be purchased in purified form from many sources. The PC group is usually divided into natural (like EggPC) and synthetic products.

Natural phospholipid derivates: egg PC, egg PG, soy PC, hydrogenated soy PC, sphingomyelin as natural phospholipids.

Synthetic phospholipid derivates: phosphocholine (DDPC, DLPC, DMPC, DPPC, DSPC, DOPC, POPC, DEPC), phosphoglycerol (DMPG, DPPG, DSPG, POPG), phosphatidic acid (DMPA, DPPA, DSPA), phosphoethanolamine (DMPE, DPPE, DSPE DOPE), phosphoserine (DOPS), PEG phospholipid (mPEG-phospholipid, polyglycerin-phospholipid, functionalized-phospholipid, terminal activated-phosholipid)

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Abbreviations used and Chemical Information

Abbreviation ^[a]	CAS ^[a]	Name ^[a]
DDPC	3436-44-0	1,2-Didecanoyl-sn-Glycero-3-phosphocholine
DEPA-NA	80724-31-8	1,2-Dierucoyl-sn-Glycero-3-Phosphate(Sodium Salt)
DEPC	56649-39-9	1,2-Erucoyl-sn-Glycero-3-phosphocholine
DEPE	988-07-2	1,2-Dierucoyl-sn-Glycero-3-phosphoethanolamine
DEPG-NA		1,2-Dierucoyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)]
DLOPC	998-06-1	1,2-Linoleoyl-sn-Glycero-3-phosphocholine
DLPA-NA		1,2-Dilauroyl-sn-Glycero-3-Phosphate(Sodium Salt)
DLPC	18194-25-7	1,2-Dilauroyl-sn-Glycero-3-phosphocholine
DLPE		1,2-Dilauroyl-sn-Glycero-3-phosphoethanolamine
DLPG-NA		1,2-Dilauroyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)] (Sodium Salt)
DLPG-NH4		1,2-Dilauroyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)]
DLPS-NA		1,2-Dilauroyl-sn-Glycero-3-phosphoserine(Sodium Salt)
DMPA-NA	80724-3	1,2-Diimyristoyl-sn-Glycero-3-Phosphate(Sodium Salt)
DMPC	18194-24-6	1,2-Dimyristoyl-sn-Glycero-3-phosphocholine
DMPE	988-07-2	1,2-Dimyristoyl-sn-Glycero-3-phosphoethanolamine
DMPG-NA	67232-80-8	1,2-Myristoyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)]
DMPG-NH4	108321-03-5	1,2-Myristoyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)]
DMPG-NH4/NA		1,2-Myristoyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)]
DMPS-NA		1,2-Dimyristoyl-sn-Glycero-3-phosphoserine(Sodium Salt)
DOPA-NA		1,2-Dioleoyl-sn-Glycero-3-Phosphate(Sodium Salt)
DOPC	4235-95-4	1,2-Dioleoyl-sn-Glycero-3-phosphocholine
DOPE	4004-5-1-	1,2-Dioleoyl-sn-Glycero-3-phosphoethanolamine
DOPG-NA	62700-69-0	1,2-Dioleoyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)]
DOPS-NA	70614-14-1	1,2-Dioleoyl-sn-Glycero-3-phosphoserine(Sodium Salt)
DPPA-NA	71065-87-7	1,2-Dipalmitoyl-sn-Glycero-3-Phosphate(Sodium Salt)
DPPC	63-89-8	1,2-Dipalmitoyl-sn-Glycero-3-phosphocholine
DPPE	923-61-5	1,2-Dipalmitoyl-sn-Glycero-3-phosphoethanolamine
DPPG-NA	67232-81-9	1,2-Dipalmitoyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)]
DPPG-NH4	73548-70-6	1,2-Dipalmitoyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)]
DPPS-NA		1,2-Dipalmitoyl-sn-Glycero-3-phosphoserine(Sodium Salt)
DSPA-NA	108321-18-2	1,2-Distearoyl-sn-Glycero-3-Phosphate(Sodium Salt)
DSPC	816-94-4	1,2-Distearoyl-sn-Glycero-3-phosphocholine
DSPE	1069-79-0	1,2-Diostearpyl-sn-Glycero-3-phosphoethanolamine
DSPG-NA	67232-82-0	1,2-Distearoyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)]
DSPG-NH4	108347-80-4	1,2-Distearoyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)]
DSPS-NA		1,2-Distearoyl-sn-Glycero-3-phosphoserine(Sodium Salt)
Egg Sphingomyelin empty Liposome		
EPC		Egg-PC
HEPC		Hydrogenated Egg PC
HSPC		High purity Hydrogenated Soy PC
HSPC		Hydrogenated Soy PC
LYSOPC MYRISTIC	18194-24-6	1-Myristoyl-sn-Glycero-3-phosphocholine
LYSOPC PALMITIC	17364-16-8	1-Palmitoyl-sn-Glycero-3-phosphocholine
LYSOPC STEARIC	19420-57-6	1-Stearoyl-sn-Glycero-3-phosphocholine
Milk Sphingomyelin MPPC		1-Myristoyl,2-palmitoyl-sn-Glycero-3-phosphocholine
MSPC		1-Myristoyl,2-stearoyl-sn-Glycero-3-phosphocholine
PMPC		1-Palmitoyl,2-myristoyl-sn-Glycero-3-phosphocholine
POPC	26853-31-6	1-Palmitoyl,2-oleoyl-sn-Glycero-3-phosphocholine
POPE		1-Palmitoyl,2-oleoyl-sn-Glycero-3-phosphoethanolamine
POPG-NA	81490-05-3	1,2-Dioleoyl-sn-Glycero-3[Phospho-rac-(1-glycerol...)](Sodium Salt)
PSPC		1-Palmitoyl,2-stearoyl-sn-Glycero-3-phosphocholine
SMPC		1-Stearoyl,2-myristoyl-sn-Glycero-3-phosphocholine
SOPC		1-Stearoyl,2-oleoyl-sn-Glycero-3-phosphocholine
SPPC		1-Stearoyl,2-palmitoyl-sn-Glycero-3-phosphocholine

References

- ↑ BBC NEWS | Health | Placenta 'fools body's defences' (http://news.bbc.co.uk/2/hi/health/7081298.stm)
- ↑ Rose L and Jenkins ATA (2006). "The effect of the ionophore valinomycin on biomimetic solid supported lipid DPSTE/EPC membranes". *Bioelectrochem.* **71** (1): 114–120. Entrez PubMed 16875886 (http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=16875886)

See also

- Alkylphosphocholines
- Choline

External links

- Phosphocholine 3D Structure Viewer (http://www.ch.ic.ac.uk/chemime/tests/chemapp/index.html)

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Categories: Quaternary ammonium compounds | Organophosphates

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Phosphocholine	
<div></div> <div></div>	
<div>Identifiers</div>	
CAS number	[107-73-3]
PubChem	1014 (http://pubchem.ncbi.nlm.nih.gov/summary/summary.cgi?cid=1014)
MeSH	Phosphocholine (http://www.nlm.nih.gov/cgi/mesh/2007/MB.cgi?mode=&term=Phosphocholine) [show]
SMILES	
Properties	
Molecular formula	C ₅ H ₁₅ NO ₄ P ⁺
Molar mass	184.151
<div>Except where noted otherwise, data are given for materials in their standard state (at 25 °C, 100 kPa) Infobox references</div>	