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1. **BIOSYNTHESIS OF PASMALOGENS**



1. **SITE OF DEGREDATION OF 5 PHOSPHOLIPASE**



1. **Phospholipase-A**1**:** Remove the fatty acyl group on C1 of the glycerol moiety.
2. **Phospholipase-A**2**:** Catalyzes the hydrolysis of the ester bond of glycerophospholipids to form a free fatty acid and lysophospholipid, which is attacked by lysophospholipase by removing the remaining 1-acyl group.
3. **Phospholipase-B:** Hydrolyzes both acyl groups on C1 and C2.
4. **Phospholipase-C:** Cleaves the bond, between phosphate and glycerol of phospholipids.
5. **Phospholipase-D:** Cleaves the bond between the phosphate and the Nitrogen base.

 **3**a**. Biosynthesis of Glycolipids**

Cerebroside is the simples glycosphingolipids. In a cerebroside, glucose or galactose is linked to the terminal hydroxyl group of ceramide to form glucocerebroside or galactocerebroside.

Galactocerebroside is is a major lipid of myelin, wherease glucocerebroside is the major glycolipid of extraneural tissues and a precursor of most of the more complex glycolipids.

* Ceramide reacts with UDP-glucose or UDP-galactose to form glucocerebroside or galactocerebroside respectively.
* Ganglosides are the major complex glycolipids, contain a branched chain oligosaccharides of as many as seven sugar residues
* Ganglosidses are produced from ceramide by the stepwise addition of activated sugar, eg. UDP-glucose, UDP-galactose and sialic acid usually N-acetylneuraminic acid (NANA).

**3**b. **Degradation of Glycolipids**

* The glucocerebrosides and galactocerebrosides are hydrolyzed by lysosomal enzymes *beta-glucoserebrosidase* and *beta-galactocerebrosidase* respectively to ceramide and hexose residues. The ceramide so formed is further cleaved by another lysosomal enzyme *ceramidase* to sphingosine and free fatty acid.
* The different gangliosides are degraded by a set of lysosomal enzymes, *beta-glucosidase, beta-hexasominidase, beta-galactosidase, neuramidase*.