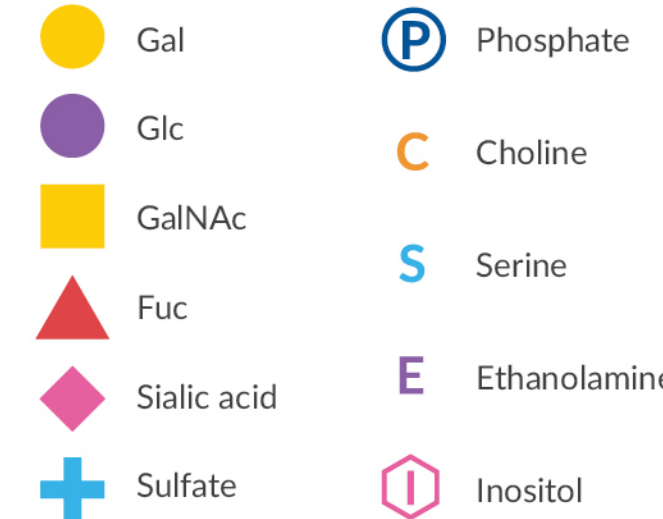
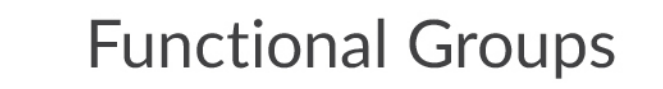




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The diagram illustrates the metabolic pathways of lipids, starting from Glycerol-3-phosphate (G3P) and branching into several major classes: Lysophospholipids, Phospholipids, and Triacylglycerols.

- Lysophospholipid Synthesis:** G3P is converted to Lysophosphatidic Acid (LPA) by GPAT using Acyl-CoA. LPA is then converted to Lysophosphatidylserine (LyPS) by Autotaxin. LyPS can be further converted to Lysophosphatidylethanolamine (LPE) or Lysophosphatidylcholine (LPC) by Lysophospholipid Acyltransferase (LPLAT).
- Phospholipid Synthesis:** LPA is converted to Phosphatidic Acid (PA) by LPAAT using Acyl-CoA. PA is then converted to Phosphatidylcholine (PC) by Choline Phosphatidyltransferase (CPT) or to Phosphatidylethanolamine (PE) by Ethanolamine Phosphatidyltransferase (EPT). PE can be further converted to PC by Phosphatidylethanolamine N-methyltransferase (PEMT).
- Triacylglycerol Synthesis:** PA is converted to Diacylglycerol (DAG) by DAGK. DAG is then converted to Triacylglycerol (TAG) by DGAT using Acyl-CoA. Alternatively, TAG can be synthesized from Glycerol-3-phosphate and Acyl-CoA by GPAT and Glycerol-3-phosphate acyltransferase (GPAT).
- Lysophospholipid Breakdown:** Lysophospholipids (LPE, LPC) are broken down into LPA and Acyl-CoA by Lysophospholipid Lipase (LPL).
- Phospholipid Breakdown:** Phospholipids (PC, PE) are broken down into PA and Acyl-CoA by Phospholipase A₂ (PLA₂). PA can be further broken down into DAG and Acyl-CoA by DAGK.
- Triacylglycerol Breakdown:** TAG is broken down into DAG and Acyl-CoA by Triacylglycerol Lipase (TGL).

The diagram uses color-coded boxes to group related lipids: orange for Lysophospholipids, yellow for Phospholipids, and green for Triacylglycerols. Arrows indicate the direction of synthesis and breakdown, while T-bars indicate inhibition.

G Protein Coupling

