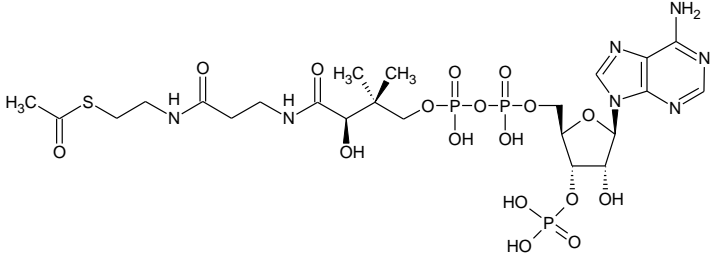
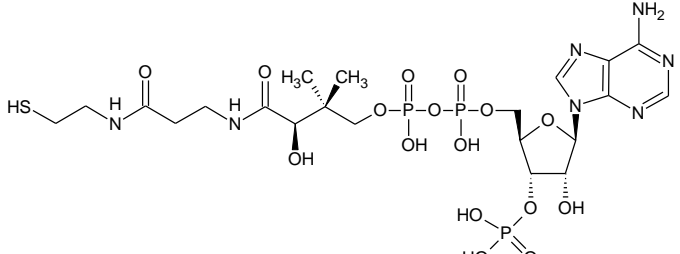
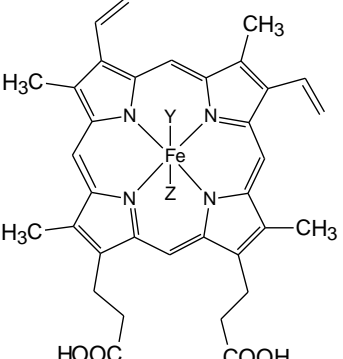
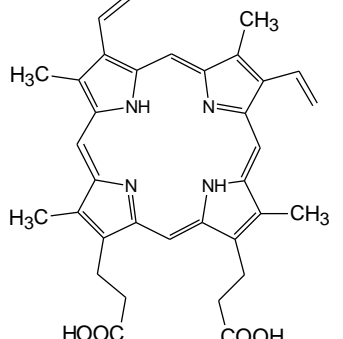
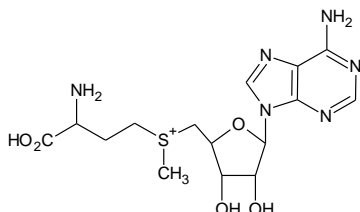
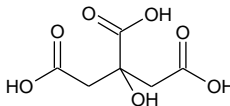
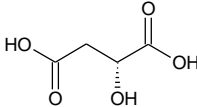
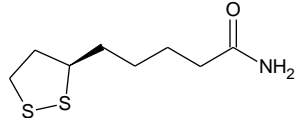
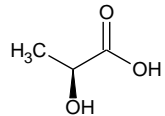
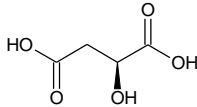
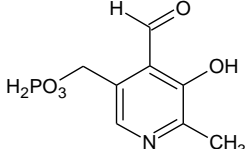


Common Cofactors in Biochemistry

Nicotinamide Adenine Dinucleotide (NADH)	
$\text{NAD}^+ + \text{H}^+ + 2\text{e}^-$ $\text{C}_{21}\text{H}_{26}\text{N}_7\text{O}_{14}\text{P}_2$ 622.42 g/mol	NADH $\text{C}_{21}\text{H}_{27}\text{N}_7\text{O}_{14}\text{P}_2$ 663.43 g/mol
Flavin Adenine Dinucleotide (FAD)	
$\text{FAD} + 2\text{H}^+ + 2\text{e}^-$ $\text{C}_{27}\text{H}_{33}\text{N}_9\text{O}_{15}\text{P}_2$ 785.55 g/mol	FADH_2 $\text{C}_{27}\text{H}_{35}\text{N}_9\text{O}_{15}\text{P}_2$ 787.57 g/mol

<p>Acetyl-CoA $C_{23}H_{38}N_7O_{17}P_3S$ 809.57 g/mol</p>	 <p>The structure shows an acetyl group (CH₃C(=O)-) attached to a cysteamine chain, which is linked to a pantoic acid derivative, then to a ribose sugar, and finally to an adenine base. The adenine base is connected to a ribose sugar, which is linked to a phosphate group, and finally to a pantoic acid derivative.</p>
<p>Coenzyme-A (CoA-SH) Acyl transfer reactions $C_{21}H_{36}N_7O_{16}P_3S$ 767.54 g/mol</p>	 <p>The structure is similar to Acetyl-CoA, but instead of an acetyl group, it has a cysteamine chain ending in a thiol group (-SH).</p>
<p>Heme B $C_{34}H_{32}O_4N_4Fe$ 616.49 g/mol</p>	 <p>The structure shows a central iron atom (Fe) coordinated to four nitrogen atoms in a porphyrin ring. The ring is substituted with methyl groups (CH₃), vinyl groups (CH=CH₂), and propionic acid side chains (HOOC-CH₂-CH₂-). The central iron atom is coordinated to two additional ligands, Y and Z.</p>
<p>Protoporphyrin IX $C_{34}H_{34}N_4O_4$ 562.66 g/mol</p>	 <p>The structure is similar to Heme B, but the central iron atom is replaced by a hydrogen atom (H) at the center of the porphyrin ring.</p>
<p>S-Adenosylmethionine (SAM) $C_{15}H_{22}N_6O_5S$ 398.44 g/mol</p>	 <p>The structure shows a methionine molecule (HO₂C-CH(NH₂)-CH₂-CH₂-S-CH₃) where the sulfur atom is covalently bonded to the 5' carbon of an adenosine moiety (adenine base and ribose sugar).</p>
<p>Citric acid $C_6H_8O_7$ 192.12 g/mol</p>	 <p>The structure shows a central carbon atom bonded to three carboxylic acid groups and one hydroxyl group.</p>

D-Malic acid $C_4H_6O_5$ 134.09 g/mol	
Lipoamide $C_8H_{15}NOS_2$ 205.34 g/mol	
L-Lactic acid $C_3H_6O_3$ 90.08 g/mol	
L-Malic acid $C_4H_6O_5$ 134.09 g/mol	
Pyridoxal Phosphat $C_8H_{10}NO_6P$ 247.14 g/mol	
δ -Aminolevulinic acid $C_5H_9NO_3$ 131.13 g/mol	