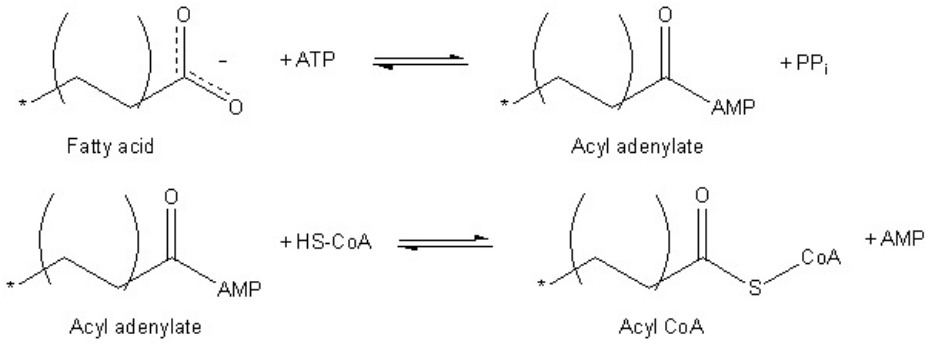
Activation of fatty acids



Fatty acid activation occurs in the **cytosol, on the outer mitochondrial membrane** immediately after their entry into the cell. Without the activation, it is impossible to consider the involvement of their molecules in metabolism. Activation then simultaneously maintains their **steady concentration gradient** (analogous to glucose phosphorylation - see glycolysis). The principle of fatty acid activation is the ester linkage of a fatty acid binding molecule to the **SH-group of coenzyme A** via **acyl-Coenzyme A synthetase** (fatty acid thiokinase):

$$\mathbf{MK + ATP + HS{-}CoA \rightarrow acyl{-}CoA + AMP + 2\ P_i}$$

The activation of the fatty acid actually passes off in two stages. First, **acyl adenylate** (acyl-AMP) is formed and in the second phase AMP is exchanged for **coenzyme A**.