

Energy and Metabolism: What is the difference between substrate-level phosphorylation and oxidative phosphorylation?

Substrate-level phosphorylation is directly phosphorylating ADP with a phosphate and energy provided from a coupled reaction. SLP will only occur if there is a reaction that releases sufficient energy to allow the direct phosphorylation of ADP. Oxidative phosphorylation is when ATP is generated from the oxidation of NADH and FADH₂ and the subsequent transfer of electrons and pumping of protons. That process generates an electrochemical gradient, which is required to power the ATP synthase.

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