

Lecture 17a

3/5/2020

Oxidative Phosphorylation

Net production of ATP via Glucose

Conversion of NADH from cytosol to equivalent in mitochondria

Glycerol-3-Phosphate shuttle - goes to FADH₂

Malate-Aspartate Shuttle - goes to NADH

Include one proton per ATP for the Pi-translocase

Regulation

Inhibition of OxPhos leads to accumulation of NADH

By energy charge via feedback inhibition/activation

feedback inhibition locally by product - acetyl CoA, succinyl-CoA, Glc6P, citrate

ATP biosynthesis inhibition by IF-1 (when O₂ low and matrix pH drops)

Chemical uncoupling ET (DNP & FCCP)

Biological uncoupling via UCP-1,

-----END OF MATERIAL FOR EXAM 2 -----