Biogenesis of iron-sulfur proteins in eukaryotes: Mechanisms, diseases and role in DNA maintenance

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You're welcome!

Iron-sulfur (Fe/S) clusters are simple and evolutionary ancient inorganic cofactors of proteins with functions in catalysis, electron transfer and regulation. Fe/S cluster synthesis and assembly into apoproteins in a living cell is accomplished by three complex proteinaceous machineries. Mitochondrial Fe/S proteins require the *iron-sulfur cluster (ISC) assembly machinery*. Cytosolic and nuclear Fe/S protein assembly also depends on the function of this machinery, yet additionally requires the mitochondrial *ISC export apparatus* and the *cytosolic iron-sulfur protein assembly (CIA) machinery*. The mechanism of Fe/S protein biogenesis and the relevance for various diseases will be discussed in this lecture.