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PHYSIOLOGICAL FUNCTION OF THE CDF PROTEINS IN EUKARYOTIC ORGANISMS

Summary

Heavy metals are naturally occurring metals, semi-metals and metalloids, including the microelements essential for the proper function of living cells, as well as the non-essential elements having no established biological functions. Organisms have evolved multiple mechanisms to maintain heavy metal homeostasis within their cells. The family of CDF (Cation Diffusion Facilitator) proteins has been shown to play a crucial role in these processes. Members of CDF contribute to the delivery of micronutrients, such as Fe or Zn, into the cells and cellular organelles, such as Golgi compartment and endosomes, as well as to the efflux of a variety of heavy metals into the vacuole or extracellular space. Recently, the biological role of CDF proteins in eukaryotic cells has been greatly clarified by extensive research on the yeast *Saccharomyces cerevisiae*, mammals and plants. This work presents the current knowledge about the cellular localization and function of eukaryotic CDF transporters.

Key words: CDF proteins, homeostasis of heavy metals