ERp44 has been suggested to fulfil various functions in mammalian ER: retention in the ER of the oxidases Ero1α and Ero1β, modulator of the activity of Ero1α and involvement in maintaining intracellular calcium homeostasis by modulating activity of the inositol trisphosphate receptors (IP_3R1) channel. Based on its putative domain organization and the presence of a "CXXS" motif in its thioredoxin-like domain, ERp44 also may possess oxidoreductases activity.
To obtain more insights into the mechanisms of these diverse functions of ERp44, we will crystallize and determine the three-dimensional structures of the full-length human ERp44 (hERp44) using x-ray crystallography.
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