

Publication

1SKY: Crystal Structure Of The Nucleotide Free Alpha3beta3 Sub-Complex Of F1-AtPase From The Thermophilic Bacillus Ps3

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Author(s) Shirakihara, Y.; Leslie, A. G. W.; Abrahams, J. P.; Walker, J. E.; Ueda, T.; Sekimoto, Y.; Kambara, M.; Saika, K.; Kagawa, Y.; Yoshida, M.

Author(s) at UniBasel Abrahams, Jan Pieter ;

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F1-ATPase, an oligomeric assembly with subunit stoichiometry alpha 3 beta 3 gamma delta epsilon, is the catalytic component of the ATP synthase complex, which plays a central role in energy transduction in bacteria, chloroplasts and mitochondria. The crystal structure of bovine mitochondrial F1-ATPase displays a marked asymmetry in the conformation and nucleotide content of the catalytic beta subunits. The alpha 3 beta 3 subcomplex of F1-ATPase has been assembled from subunits of the moderately thermophilic Bacillus PS3 made in Escherichia coli, and the subcomplex is active but does not show the catalytic cooperativity of intact F1-ATPase. The structure of this subcomplex should provide new information on the conformational variability of F1-ATPase and may provide insights into the unusual catalytic mechanism employed by this enzyme.

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