Structure of NADH: Quinone Oxidoreductase from *Acidianus ambivalens*: Electron Entry Point of Aerobic Respiratory Chain

Margarida Archer, José Brito, Tiago M. Bandeiras, Miguel Teixeira, *Instituto de Tecnologia Química e Biológica, Universidade Nova de Lisboa, Apartado 127, 2781-901, Oeiras, Portugal.* E-mail: archer@itqb.unl.pt

NADH:quinone oxidoreductases (NDHs), constitute one of the electron entry points into membrane bound respiratory chains, oxidising NADH and reducing quinones. Type-II NDHs are functionally unable to translocate protons and are typically constituted by a single ~50 kDa subunit lacking iron-sulfur clusters and containing one flavin as redox centre [1]. NDH was isolated from the membrane fraction of *Acidianus ambivalens*, a thermoacidophilic archaeon capable of growing at 80º C and pH 2.0, as an enzyme of 47 kDa, containing a covalently bond flavin with a reduction potential of ~70 mV [2,3].

The membrane-bound NDH was crystallized using ammonium phosphate as precipitant at pH ~ 5. Crystals belong to the hexagonal space group ($P6_522$), with cell parameters a=b=178.76 Å and c=162.57 Å. We describe the first X-ray structure of a novel type-II NDH at 2.6 Å resolution, solved by MIRAS, which will contribute to a better understanding of the catalytic and electronic transfer mechanism.

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