# Completing the Tungsten containing Aldehyde Oxidoreductase Family From Pyrococcus furiosus; the purification of WOR5

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*Pyrococcus furiosus* is a strictly anaerobic, fermentative organism that grows optimally at 100 °C. The growth of *P. furiosus* is strictly dependent on the presence of tungsten. Four tungsten enzymes have previously been purified from this organism, all members of the putative five-membered aldehyde oxidoreductase (AOR) family. In the present study we describe the first purification and characterization of the fifth member of the AOR-family: WOR5.

WOR5 was purified as a homo-dimeric protein (subunit: 65 kDa). It has a broad substrate specificity with a high affinity for several substituted and non substituted aliphatic and aromatic aldehydes with variable chain lengths. EPR measurements and element analysis indicate that the protein contains one [4Fe-4S] cluster and one tungsto-bis-pterin cofactor per subunit.