

differences observed in regions participating in crystal contacts. The *TaAIDHwt* homotetramer consists of two homodimers that display a very tight connection through the formation of an extended beta-sheet between monomers of the dimer. The structure refinement of *TaAIDHwt* is in progress.

Keywords: glyceraldehyde dehydrogenase, cell-free enzyme cascade, bioproduction

MS5-P40 Structural and biochemical characterization of dipeptidyl peptidase III from *Porphyromonas gingivalis*

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Porphyromonas gingivalis is gram-negative, human pathogenic bacterium. It is found in the oral cavity and it is known to cause periodontal disease by invading human gingival fibroblasts. It also contains an enzyme which belongs to the DPP III family. Dipeptidyl peptidase III (DPP III), also known as enkephalinase B, is an enkephalin-degrading enzyme that cleaves dipeptides sequentially from the N-termini of substrates. All DPPs III described thus far contain the unique zinc binding motif HEXXGH characteristic for metallopeptidase family M49. An important role of DPP III in the mammalian pain modulatory system is supported by several recent findings: low levels of DPP III activity were detected in the cerebrospinal fluid of individuals suffering from acute pain; DPP III exhibits high in vitro affinity towards the important neuropeptides endomorphin-1 and endomorphin-2. The exact function of DPP III from *Porphyromonas gingivalis* is still unknown. It could possibly be involved in pathogenicity. With the human DPP III shares 20,3 % sequence identity. According to homology model, it was possible to obtain two domains: one is DPP III domain also observable in humans and additional alpha-alpha superhelix domain which is not recognized as transmembrane domain. We aim at determining the potential substrates and also to solve the structure of the enzyme in order to get insight into the potential function of the protein. Here we represent the ITC- and SAXS- data as well as crystallization experiments as first important steps towards this goal.

Keywords: DPP III, SAXS, ITC, Crystallization