

Poster Presentations

[MS5-P48] **Crystallization of arylacetonitrilase from *arthoderma benhamie***
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Arylaliphatic nitrilases can under mild conditions and often in a stereo-selective manner transform α -hydroxy nitriles and α -aminonitriles - industrially important precursors in organic synthesis. Nitrilases are proteins with unique structural properties, being able to exist in a number of different homooligomeric species - dimers, short homo-oligomeric spirals and extended helices [1,2]. Since 1980s bacteria were used as a source of these enzymes. But it was shown that filamentous fungi (e.g. *Aspergillus niger*, *Neurospora crassa*, *Arthoderma benhamie*) also contain large number of nitrilase genes and can be as good source of nitrilases as bacteria [3].

Recently recombinant preparation and characterization of novel fungal nitrilase from *Arthoderma benhamie* was reported [4]. This nitrilase also tends to form covalent homo-oligomers and previous efforts of its crystallization were unsuccessful. Purification of this enzyme under reducing conditions improved on its oligomeric homogeneity. Here we show successful crystallization trials with the reduced form of nitrilase from *Arthoderma benhamie* that already yielded first crystals. This could be a prove of concept in crystallization of nitrilases from other filamentous fungi that tend to form different homo-oligomeric species that impairs their crystallization.

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[3] Petříčková, A., Veselá, A.B., Kaplan, O., Kubáč, D., Uhnáková, B., Malandra, A., Felsberg, J., Rinágelová, A., Weyrauch, P., Křen, V., Bezouška, K., Martínková, L. (2012) Appl Microbiol Biotechnol. **93**, 1553-1561

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Keywords: arylacetonitrilase; *Arthoderma benhamie*; filamentous fungi