Abstract
Cyclodextrin glucanotransferase (CGTase, EC 2.4.1.19) is an industrially important enzyme producing cyclic oligosaccharides (cyclodextrins) from starch. Cyclodextrins (CDs) have been widely used in pharmaceuticals, cosmetics, perfumes and food industries, as well as in agricultural chemistry because of their ability to form inclusion complexes with a wide variety of chemicals by encapsulating them into their cavities.

An efficient isolation and purification of cyclodextrin glucanotransferase from culture medium has still been of high importance. This enzyme contains „raw starch binding domain“ exhibiting affinity to different starch derivatives. In our work, magnetic porous corn starch for one-step, affinity isolation/purification of CGTase was developed. In the optimized procedure, highly purified enzyme (purification factor was 19 – 25 in different batches) with high recovery (ca 60-70%) was obtained. Magnetic properties of the adsorbent enable the application of magnetic separation process. Also, the whole procedure can be easily scaled-up. It can be expected that also other enzymes containing „raw starch binding domain“ could be isolated using this new magnetic affinity adsorbent.

Keywords: Cyclodextrin glucanotransferase, magnetic affinity adsorbent, purification

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