

CILOCI, A. A; V. P. BULIMAGA; S. F. CLAPCO; S. V. LABLIUC and E. G. DVORINA. Purification of Alpha-Amylase Produced by *Aspergillus niger* CNMN FD 06 under Submerged Cultivation in the Presence of TiO₂ Nanoparticles and the Coordination Compound of Sr(II) with Polydentate Ligand. In: Surface Engineering and Applied Electrochemistry, 2025, vol. 61, pp. 164-170. ISSN 1068-3755; ISSN 1934-8002. Disponibil: <https://doi.org/10.3103/S106837552570005X>

The stimulatory effect of TiO₂ nanoparticles and the coordination compound of Sr(II) with a polydentate ligand on the amylase activity was established under submerged cultivation of the micromycete strain *Aspergillus niger* CNMN FD 06. After purification by gel-filtration on the column of PAD-10 and the ion exchange chromatography on the Hi-TrapTM Q column, an increase in the specific activity of α-amylase in the case of the variants with the addition of TiO₂ nanoparticles and coordination compound of Sr(II) up to 15 523 and 14 656 U/mg, respectively, compared to the control version 12 037 U/mg was established. The yield of α-amylases after purification was also higher, with an increase of 31 and 20%, respectively, compared to that of control variant. The SDS-PAGE analysis of the isolated proteins revealed the presence of two bands in the active fractions with an apparent molecular mass equal to 65 and 40 kDa, with a more abundant band with a molecular mass of 65 kDa in the case of the preparation obtained with the addition of the Sr(II) coordination compound.