Penicillium sp. — PRODUCER OF EXTRACELLULAR α-L-RHAMNOSIDASE

Gudzenko E. V., Varbanets L. D., Kurchenko I. M., Naconechnaya L. T.

"Biotechnologia Acta" v. 7, no 4, 2014
doi: 10.15407/biotech7.04.043
P. 43-48, Bibliography 22, Ukrainian.
Universal Decimal classification: 577.15.:577.152.3

Penicillium sp. — PRODUCER OF EXTRACELLULAR α-L-RHAMNOSIDASE

Gudzenko E. V., Varbanets L. D., Kurchenko I. M., Naconechnaya L. T.
The purpose of this work was to investigate α-L-rhamnosidase that hydrolytically cleaves the terminal unreduced α-1,2-, α-1,4- and α-1,6-linked rhamnose residues in both synthetic and natural glycosides, oligo-, and polysaccharides, various glycoconjugates: flavonoid derivatives such as rutin, neohesperidin, hesperidin, naringin, quercitin, saponins, terpene glycosides. These properties of the enzyme could be used for the needs of food industry, pharmaceutical and chemical industry: to improve the quality of beverages (reduction of bitterness, flavor enhancing wines), for production of food additives, medicine preparations and rhamnose.

As a result of screening conducted among 9 strains of micromycetes, ability to synthesize α-Lrhamnosidase was revealed only in *Penicillium* sp. 2918. Complex enzyme preparation was obtained from culture supernatant of this micromycete by fractionation with ammonium sulfate (90% saturation) and its physico-chemical properties such as pH- and thermo optimum, pH- and thermal stability and substrate specificity were studied as well. It is shown that enzyme has pH optimum is about 6.0 and thermo optimum is about 60 °C.

C. Preparation of *Penicillium* sp. 2918 with α-L-rhamnosidase reveals α-D-glucosidase, α-D-galactosidase and α-D-glucosaminidase activity.

**Key words:** *Penicillium* sp. 2918, α-L-rhamnosidase, micromycetes, physical and chemical properties, substrate specificity.

© Palladin Institute of Biochemistry of the National Academy of Sciences of Ukraine, 2008

{spoiler title=REFERENCES}


Recombinant α-L-rhamnosidase from Aspergillus terreus in selective trimming of rutin.
http://dx.doi.org/10.1016/j.procbio.2012.02.014


