

High-density culture of mutant filamentous fungi

For mass fermentative production of useful substances!

Overview

Filamentous fungi have an advantage to produce a wide variety of useful substances in industry. However, it is well-known that hyphal aggregation during the liquid culture often prevents fungi to grow with high density, resulting in low productivity of useful substances.

This invention discloses a mutant strain of a filamentous fungi, in which α -1,3-glucan synthase (AGS) gene is deficient, for high productivity of substances.

The α -1,3-glucan in the cell wall in AGS deficient mutant ($AG\Delta$) is significantly reduced. The $AG\Delta$ cells are dispersed well in a liquid medium and cultured with higher density compared with that of wild type. Such phenotype of $AG\Delta$ results in an increasing productivity of useful substances per unit.

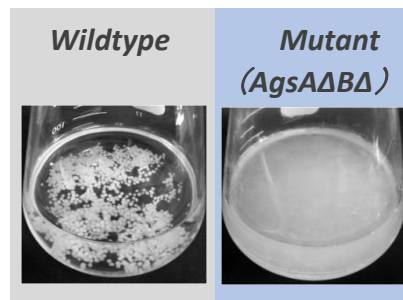
Product Application

- ❑ Production of functional Proteins/peptides like enzymes
- ❑ Production of small molecules with biological activities like amino acids, antibiotics, etc..
- ❑ Application of cultured/increased fungi biomass like meat alternative

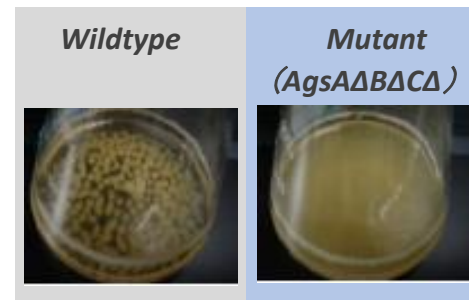
IP data

IP No. :JP6132847B2, US2918682B2, etc
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 Admin No. :T12-060

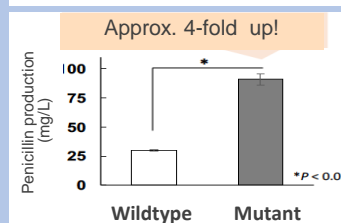
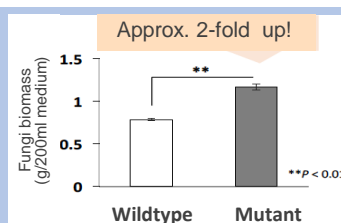
A. nidulans



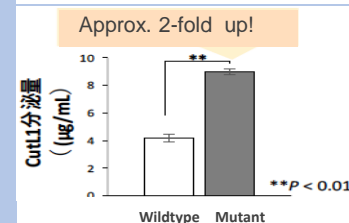
A. oryzae



Enhanced biomass/productivity after culture



A. nidulans



A. oryzae

Related works

- [1] Yoshimi et al (2013) PLOS ONE 8(1) e54893
- [2] Miyazawa et al (2016) Biosci Biotechnol Biochem 80(9),1853-1863.

Contact