Microbial production of ergothioneine

Ergothioneine, which is also called the longevity vitamin, is mostly obtained from mushrooms as primary dietary source. It is a rare sulfur-containing amino acid with antioxidant properties that also shows great potential for ameliorating neuro-degenerative and cardiovascular diseases.

BACKGROUND

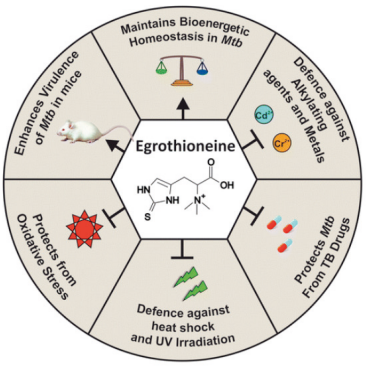
Ergothioneine occurs in relatively few organisms, notably Actinobacteria, Cyanobacteria, and certain fungi. Since humans can't produce it, it has to be exclusively acquired through the diet. Ongoing *in vivo* studies proved promising positive effects of the compound on human wellbeing. Since natural ergothioneine levels are extremely low, and it has to be elaborately isolated, alternative production methods are highly desired. For example, *S. cerevisiae* has been engineered for high-level production of ergothioneine.

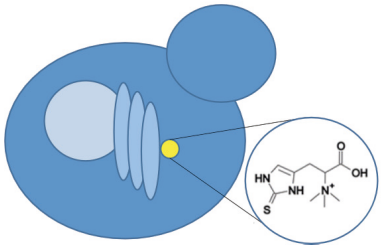
TECHNOLOGY

acib's concept is to use the 'biotech' yeast Pichia pastoris (syn. *Komagataella phaffii*), which is especially known for its growth to extremely high cell densities. This more than often proved it superior to *S. cerevisiae* in many industrial processes. Based on novel strain engineering techniques, and benefiting from previous studies, production levels of ergothioneine in genetically manipulated *P. pastoris* strains are expected to clearly exceed productivities of 2.4 g/L in 160 h currently obtained using *S. cerevisiae*.

OFFER

Under protection of a CDA/NDA we provide you with professional strategies for sustainable production of ergothioneine. IP developed in such a project would fully belong to our investor/industrial partner.





EXPERTS

Dr. Anita Emmerstorfer-Augustin

AVAILABLE FOR

- Investments
- Joint Research Projects
- Contract Research

DEVELOPMENT STATUS

Technology Readiness Level 2
(Technology concept formulated)

IPR

Can be generated for our industrial partners / investors

KEYWORDS

- Rare amino acids
- Food supplement
- Antioxidant
- Health effects
- Pharma Industry
- Nutraceutical
- Longevity

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