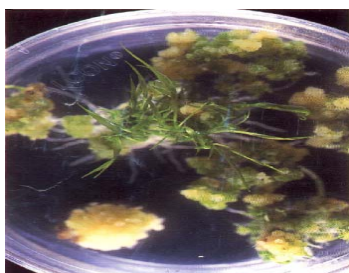


Avesthagen Rice-BCP™

A novel Blue Copper Protein gene from Rice (**Avesthagen Rice-BCP™**) combating salinity stress and possessing agronomic properties



Usefulness:

The usefulness of **Avesthagen Rice-BCP™** lies in the fact that the gene encoding the blue copper protein homologue isolated from the RASI variety of rice may play an important role in plant cell detoxification by scavenging the reactive oxygen species thereby preventing damage to cellular structure and providing a mechanism of salt/drought tolerance.

Avesthagen Rice-BCP™ can generate increased salt tolerance in agronomically important rice varieties using conventional gene transfer technology.

Avesthagen Rice-BCP™ may play an important role in metal ion homeostasis and phytoremediation and also in accelerated wound repair/tissue regeneration.

Validation:

Salt tolerance: To goal is to generate agronomically important rice varieties with

Avesthagen Rice-BCP™ relates to the isolation of a Blue Copper Protein from the RASI variety of rice seedlings under salinity stress conditions. The protein was found to be up-regulated two to three fold under salt stressed conditions. Differential expression was observed between the RASI control and salt stressed sample and that there was increased induction of the mRNA in the salt stressed RASI sample.

increased salt tolerance by overexpressing BCP using conventional gene transfer technology. The BCP gene has been successfully cloned downstream to a CvMv promoter and the transformations / selection of positive transformants is underway.

Cosmeceutical:

Previously copper peptides harboring GHK-Cu complex have been shown to be of importance in anti-ageing (skin renewal, wound healing and hair growth). In-vitro expression of blue copper protein gene in yeast/bacterial system is being exploited to purify the protein and study the molecular nature of copper binding domains. This will provide a lead as to the feasibility of the development of Cu- peptides, which would then be tested for its efficacy in the development/improvement of new/existing cosmetic and pharmaceutical products.

(Indian Patent Application No. 215/MAS/2002)