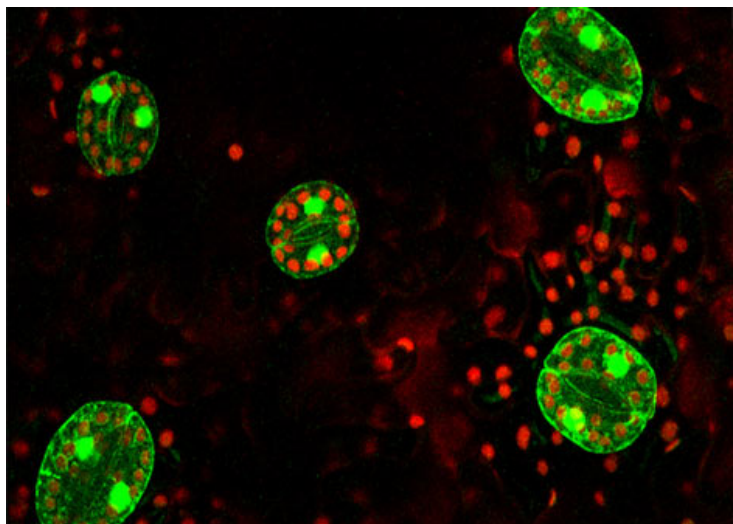


## CSIR licenses plant based thermo-stable enzyme

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The Council for Scientific and Industrial Research (CSIR), Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur, have signed a MoU with its industrial partner, Phyto Biotech, Kolkata, to formalize transfer of technology for the production of unique autoclavable Super Oxide Dismutase (SOD) enzyme, used in cosmetic, food and pharmaceutical industries for end applications like developing anti-ageing creams, extending shelf life of fruits and vegetables, and during cryo-surgery and preservation of organelles respectively. The licensing has brought together the CSIR and the industry to enable commercial production of desired standard SOD so as to create a global niche for the country.

The enzyme was discovered by CSIR-IHBT during a survey at an altitude of over 10, 000 ft in the Western Himalayan region from *Potentillaastrosangunia*, a plant growing under snow cover. Persistent hard work over the years has resulted in the isolation of the SOD gene. Thereafter, a protocol was developed for cloning of the gene in Ecoli. The enzyme thus produced, retained the same unique feature as that of the plant. Applying the knowledge of bioinformatics, the enzyme has been further engineered by introducing a single amino acid mutation to increase its consistency and thermo-stability.

The characteristic features of SOD lies in its stability and functionality, ranging from sub-zero to temperatures of more than 40 C with varying specific activity. Owing to its high antioxidant properties and multiple uses, SOD enjoys high demand and price in the global market.