



Council of Scientific and Industrial Research

PRESS RELEASE

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CSIR-IHBT LICENSES UNIQUE, THERMO-STABLE SOD ENZYME TO CREATE GLOBAL NICHE

Palampur, 11 May 2014. CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur, signed an MoU with its industrial partner, Phyto Biotech, Kolkata, to formalize Transfer of Technology for 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 *Potentilla astrosangunia* 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 *E.coli*. The enzyme thus produced, retained the same unique feature as that of the native plant. Applying the knowledge of bioinformatics, the enzyme has been further engineered by mutation of a single amino acid to increase its consistency and thermo-stability.

The characteristic features of this SOD lies in its stability and functionality ranging from sub-zero to high temperature of $>40^{\circ}\text{C}$ with varying specific activity. Owing to its high antioxidant properties and multiple uses, SOD enjoys high demand and price in the global market.

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Copies of agreement being exchanged between Mr. Arun Mohta of M/s Phyto Biotech and Dr. P.S. Ahuja, Director, CSIR-IHBT at CSIR-IHBT, Palampur.