EU-India S&T Cooperation Days
4-6 November 2009 New Delhi
www.euindiacoop.org

Thursday 5 November

EU-India PARTNERING EVENT

Theme: *Life sciences, biotechnology and biochemistry for sustainable non-food products and processes*

IMTECH

Debendra K. Sahoo
INSTITUTE OF MICROBIAL TECHNOLOGY CHANDIGARH

This event is co-funded by the Seventh Framework Programme, European Commission

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SEVENTH FRAMEWORK PROGRAMME

RESEARCH CENTRE

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- Institute of Microbial Technology, Chandigarh is a national laboratory, under the aegis of CSIR, India and engaged in research in both basic and applied areas of Biotechnology.
- BERPDC, a National Facility of India in Biochemical Engineering, is equipped with excellent fermentation and downstream processing facilities and is supported by various analytical equipments and Institute's instrumentation, computational and other facilities.
- We expertise in biochemical and cell culture engineering, analysis and characterization of metabolites, bioprocess optimization and scale up, product isolation and process scale purification, synthesis of nano/ micro particles.
- Developed processes for production of protein therapeutics, plasmid DNAs, industrial enzymes and biofuels.
- Transferred and successfully commercialized know-how/ technologies.
- Working on production of protein therapeutics and antibodies and development of biodegradable polymer based delivery systems for protein therapeutics, antibodies and vaccines.

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SEVENTH FRAMEWORK PROGRAMME

Yield of Recombinant Therapeutic Protein

Spreptokinase

Scale of Fermentation	Specific Yield (mg SK/ g CDW)	Volumetric Yield (mg SK/L)
Shake Flask	74.0	80.0
Fed-batch (5L Scale)	77.7	1120

Staphylokinase

Scale of Fermentation	Specific Yield (mg SK/ g CDW)	Volumetric Yield (mg SK/L)
Shake Flask	78.0	90.0
Fed-batch (5L Scale)	75.4	3500

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SEVENTH FRAMEWORK PROGRAMME

PROJECT IDEA

Production and delivery of biopharmaceuticals: Application of tools of 'omic' sciences for bioprocess analysis and process development.

- Majority of recombinant protein therapeutics are produced in either mammalian cell system (e.g., CHO) or in *Escherichia coli*, where productivity and stability of the trasfected gene of interest are important criteria.
- The cell culture process involves very complex interaction between the cell and its environment and needs detailed investigation for process development.
- Besides cell culture process, product separation and subsequent purification and processing are critical steps in determining the final productivity and product quality.
- The basic aim of our research efforts is to apply biological sciences and engineering principles to processing of biomolecules.
- We propose to apply the tools of 'omic' sciences to bioprocess analysis and process development.
- We propose to develop biodegradable polymer based delivery systems for protein therapeutics, antibodies and vaccines.

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PARTNER SOUGHT

Partners with expertise in

- Integrated ‘omic’ research and system biology application in process development.
- Metabolic engineering.
- Mammalian cell culture.
- In vitro and in vivo delivery of protein therapeutics and vaccines.
- Biofuels.
- Fermentation based products.

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