

Dr. S. Mugesh Ph.D. (Vel Tech , Chennai)

Biochemical Engineering Lab

Associate Professor/Department of biotechnology



ORCID ID: 0000-0002-5934-2633

SCOPUS ID: 55241400800

Email: drmugeshs@veltech.edu.in

Mobile: +91 6381958233

Research Areas

Metabolic engineering, Synthetic biology, Genome engineering, Bioprocess engineering

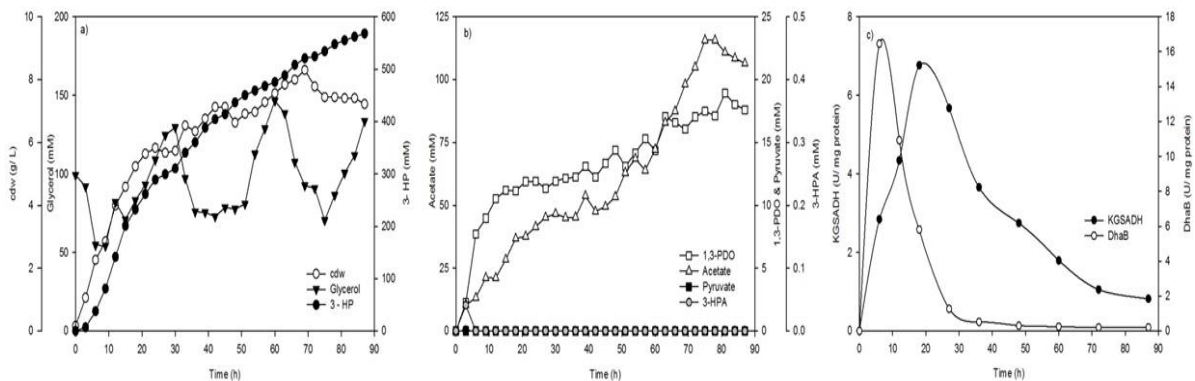
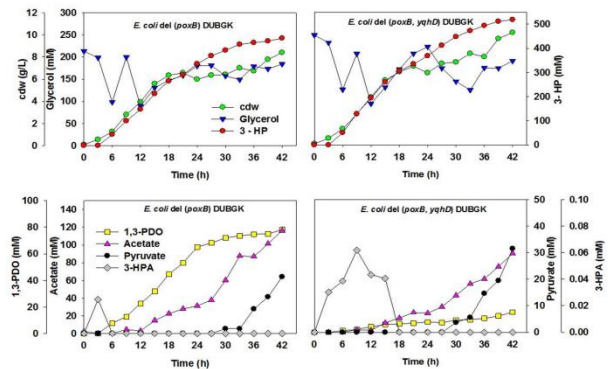
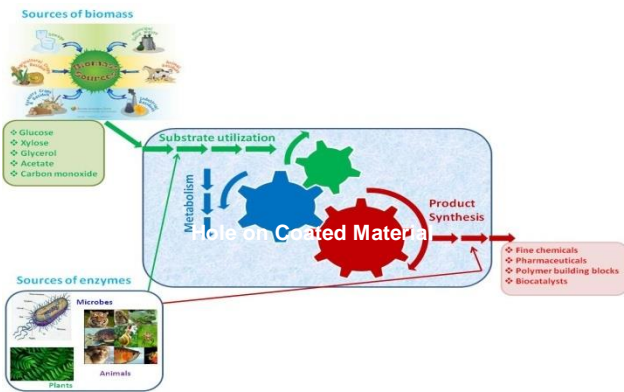
Projects & Publications Summary

Project		Publication Count		Citation Count			Impact Factor	
Completed	00	SCI	016	Citations	Google	SCOPUS	110.092	
Ongoing	03	SCOPUS	016		493	409		
Submitted	00	Books	000		h-index	12		11
		Books chapters	000		i10index	12		-

National/International Collaboration

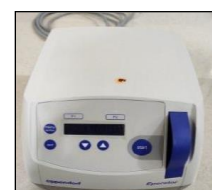
- Ulsan National Institute of Science and Technology, Ulsan, Republic of Korea.
- Pusan National University, Busan, Republic of Korea.
- Jiangsu Normal University, Jiangsu, China
- Indian Institute of Technology Madras, Chennai, India
- Indian Institute of Technology, New Delhi, India

Research snippets



Research facilities

- Thermocycler (Equipped with gradient PCR option)
- E-porator (Capable of delivering DNA into all bacteria)
- Bio-safety cabinet (Class I and Class II)
- Deep freezer -20°C (Vertical model)
- Autoclave
- Incubator (Both static and shaker options)
- Centrifuge (Table top and refrigerator)
- UV-visible spectrophotometer
- Gel documentation system
- Ice Flaker



Outline of Research Works

- Sustainable production of value added chemicals – 3-Hydroxypropionic acid, 2, 4-dihydroxybutyrate
- Microbial production of nutraceuticals – Vitamin B12
- Strain and process development of bioactive compound
- Microbial synthesis of Polyhydroxybutyrate, a biodegradable plastic
- Microbial synthesis of natural colourants

Details of Funded Projects

S.No	Project Title	Funding agency	Amount (Rs.)	Duration	Collaboration
1.	Development of improved process for production of 3-hydroxypropionic acid from crude glycerol and lignocellulosic biomass derived glucose.	DBT	84,800,020	2021-23 (Ongoing)	IITM
2.	Development of a highly sensitive technique for specific detection of pesticidal residues and heavy metals in crude herbal drugs and herbal products	DBT	25,22,000	2020-2022	-
3	Drone Assisted Mapping of Seaweeds at Chilika Lake and Development of Value Added Products from Biomass	DBT	68,00,000	2021-2024	Delhi University

Recent Best 5 SCI Publications				
<ul style="list-style-type: none"> Muthu Meenakshi M, Gowri Annasamy, Mugesh Sankaranarayanan (2021), Green synthesis of graphene gold nanocomposites for optical sensing of ferritin biomarker, <i>Materials Letters</i>, Volume 303, 15 November 2021, 130446 (Impact factor – 3.423) Trinh Thi Nguyen, Suman Lama, Satish Kumar Ainala, Mugesh Sankaranarayanan, Ashish Singh Chauhan, Jung Rae Kim, Sunghoon Park (2021), Development of <i>Pseudomonas asiatica</i> as a host for the production of 3-hydroxypropionic acid from glycerol, <i>Bioresource Technology</i>, Volume 329, Pages 124867. (Impact factor: 9.642) Suman Lama, Yeonhee Kim, Dat Tuan Nguyen, Chae Ho Im, Mugesh Sankaranarayanan, Sunghoon Park (2021), Production of 3-hydroxypropionic acid from acetate using metabolically-engineered and glucose-grown <i>Escherichia coli</i>, <i>Bioresource Technology</i>, Pages 124362. (Impact factor: 9.642) Shengfang Zhou, Suman Lama, Jihong Jiang, Mugesh Sankaranarayanan, Sunghoon Park (2020), Use of acetate for the production of 3-hydroxypropionic acid by metabolically-engineered <i>Pseudomonas denitrificans</i>, <i>Bioresource Technology</i>, Pages 123194. (Impact factor: 9.642) Shengfang Zhou, Suman Lama, Mugesh Sankaranarayanan and Sunghoon Park (2019), "Metabolic engineering of <i>Pseudomonas denitrificans</i> for the 1,3-propanediol production from glycerol", <i>Bioresource Technology</i>, Volume 292, Pages 121933. (Impact factor: 9.642) 				
Patents				
<ul style="list-style-type: none"> Novel recombinant <i>Escherichia coli</i> strain and method for producing 3- hydroxypropionic acid from acetate. (Korean Patent No: 10-2017-0117097) Development of recombinant <i>Escherichia coli</i> W strain tolerant to 3-hydroxypropionic acid. (Korean Patent No: 10-1777724) 				
PhD Thesis Guidance				
Scholar Name	Thesis Title	University	Status	Year
R. Sai Nandhini	Cofactor engineering for the enhanced production of 3-hydroxypropionic acid	VelTech Rangarajan Dr. Sagunthala R&D Institute of Science and technology	Ongoing	2019-present
R. Nirmala Nithya	Microbial production of polyhydroxybutyrate using novel microorganism	VelTech Rangarajan Dr. Sagunthala R&D Institute of Science and technology	Ongoing	2019-present
V. Sathya Narayanan	Microbial production of Vitamin B12	VelTech Rangarajan Dr. Sagunthala R&D Institute of Science and technology	Ongoing	2020-present
Anbu Chezian	Conversion seaweed biomass into usable carbohydrate for the microbial growth	VelTech Rangarajan Dr. Sagunthala R&D Institute of Science and technology	Ongoing	2022-present
Editorial/Review Activities				
<ul style="list-style-type: none"> Reviewer, Food and Bioproducts Processing, Elsevier (SCI) 				