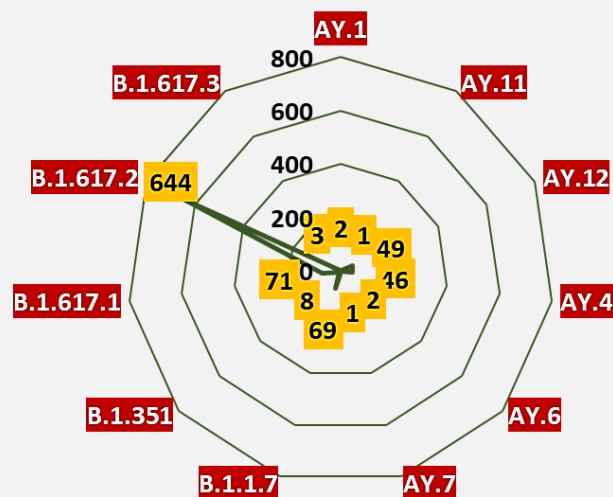
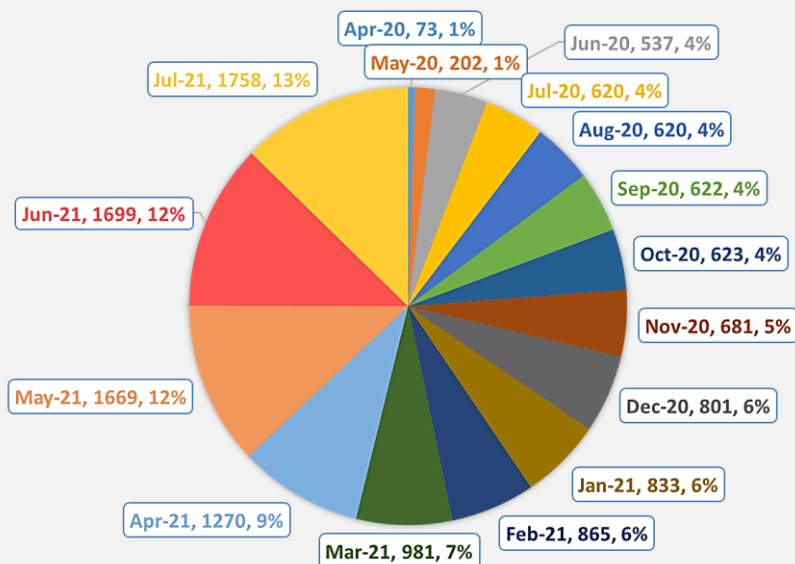


GBRC JOINED THE PRESTIGIOUS CLUB, INSACOG

GBRC is one of the pioneer institutes in the deposition of COVID -19 genome sequencing data. On the 9th of June Department of Biotechnology announced that GBRC entered the prestigious club, INSACOG. The India SARSCoV2 Genome Consortium (INSACOG), initiated by the Union Ministry of Health and Department of Biotechnology (DBT) with the Scientific & Industrial Research Council (CSIR) and the Medical Research Council of India (ICMR), is an association of 28 national laboratories to monitor genomic variants in SARSCoV2. With this entry, GBRC will gain more access to the regional COVID -19 samples and increase its surveillance capacity up to 1000 genome sequences per month.

GBRC TOWARDS VIGILANT SURVEILLANCE OF THE COVID-19

As of August, GBRC has submitted 1758 genome sequences of SARS-CoV -2. A total of 644 no. of sequences were confirmed as delta variant (B.1.617.2) and other VOCs were also confirmed. GBRC has been asked to increase surveillance of COVID -19 genome sequencing and Neuberg Supratech Lab has joined their hands in this mission along with our academic partners such as Gujarat University and Veer Narmada South Gujarat University. We aim to identify the novel emerging variants of concern (VOC) or variant of significance (VOS) viral strains.



Increase in Genome Sequencing by GBRC over a period of Pandemic

Variant of Concern in Gujarat (n=896)

5th FOUNDATION DAY CELEBRATION

GBRC celebrated its 5th foundation day on 11th August 2021. On this day, Prof. Chaitanya Joshi, Director, GBRC, shared his views on the journey of GBRC over these years. He also discussed the vision for GBRC and how GBRC has contributed to the COVID-19 crisis. Joint directors, Dr. Madhvi Joshi and Dr. Amrutlal Patel also shared their experiences working in GBRC. Dr. Madhvi Joshi pointed out that despite these many successes of GBRC, we should always look forward to make this institute even bigger. Dr. Amrutlal Patel also shared words of wisdom and said that how GBRC is helping so many young researchers by giving exposure and experience by providing such good facilities and it helps shaping their future growth.



CONTENTS

MEDIA COVERAGE

COVID Update

An interactive data portal has been launched which can be found on the following link: <https://datastudio.google.com/u/0/reporting/3e9aabd1-e965-47ea-a868-419be19db707/page/gYfXC>

On June 9th, the Ahmedabad Mirror, reported one of GBRC's most celebrated achievements as GBRC joined the most prestigious COVID-19 genome sequencing club "INSACOG".

INSACOG genome sequencing labs

Gujarat's GBRC gains entry to exclusive club

Lab among the 18 in national genome sequencing consortium; move comes after Guj faced hurdles in getting sequencing results during 2nd Covid wave

TWITTER

એકેય સેમ્પલ પૂછે કે અન્ય સ્થળે નહીં મોકલાય
હવે રાજ્યમાં જ કોરોનાના
વેરિયન્ટની ચકાસણી થશે
દર મહિને 1000 સેમ્પલ ચકાસાશે : ક્ષમતા વધશે
ગુજરાતમાં કોરોનાની બીજી લહેરમાં
GBRCનું સી માટે પણ
2 કંપનીઓ સાથે શેરિંગ

On July 22nd, Divya Bhaskar reported that GBRC has signed a memorandum of understanding with Hester Bioscience Ltd. and Omni BRx Technologies and will benefit in vaccine development.

"THE TIMES GROUP " article on 20th July, 2021 about COVID-19 genome sequencing at GBRC during May and June "

Recent GBRC data shows that between May and June, a total of 71% of patients were infected with the Delta variant, in Gujarat.

ON 20th OF THE JUNE, THE DECCAN HERALD REPORTED

"Deccan Herald " article on 20th June, 2021 about Surveillance of sewage water by COVID-19 genomes sequencing at GBRC"

Page/2 GBRC IN NEWS

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Page/7 UPCOMING EVENTS, NEW PROJECTS

On 20th of the June, The Deccan Herald reported on recent GBRC work on "E156G and Arg158, Phe-157/del mutation in NTD of spike protein in B.1.617.2 lineage of 2 SARS-CoV-2 leads to immune evasion through antibody escape". It discusses how the delta variant escapes binding by neutralizing antibody and increases infectivity, pathogenicity, and virulence."



Home Coronavirus Bengaluru Karnataka National Sports Business Opinion

Delta variant may elude antibodies in vaccinated or previously infected persons: Study

Certain key mutations in the Delta variant, especially in the spike protein that antibodies latch on to, may explain why

"The times of India" article on 24th June 2021 about COVID-19 Delta coverage during May and June

THE TIMES OF INDIA

City Ahmedabad Mumbai Delhi Bengaluru Hyderabad Kolkata Chennai Agra Agartala Ajmer Allahabad Amaravati

NEWS / CITY NEWS / AHMEDABAD NEWS / Gujarat: 'Regular genome sequencing to spot Delta+ strain'

Gujarat: 'Regular genome sequencing to spot Delta+ strain'

Parth Shastri / TNN / Updated: Jun 24, 2021, 06:13 IST

NEW FACILITY: LC-MS

GBRC added LC-MS to shared laboratory.

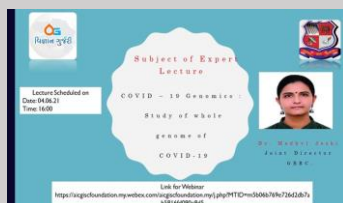


INVITED TALKS BY GBRC TEAM

Dr. Madhvi Joshi Joint Director (Scientist-D)

- Expert talk on "COVID-19 Genomics: Study of whole genome of COVID-19" on 4th June at 4:00 P.M.

Gujarat Technological University
Vigyan Gurari Gujarat Prant



- Expert talk to Qiagen team on 25th August at 4:30 P.M.

Topic- Wastewater based Epidemiology (WBE) for SARS-COV-2
A Powerful tool for forecasting, preparedness, and management of pandemic.

Dr. Amrutlal Patel, Joint-Director (Scientist-D)

He was invited for the panel discussion on Universal Access to Vaccine and Medicine virtually on 23rd June, 2021 at 11:00 A.M.



The discussion was organized by Atal Incubation Center, Gujarat Technological University, Supported by AIM, NITI Aayog, Govt. of India.

ARRIVAL & DEPARTURE

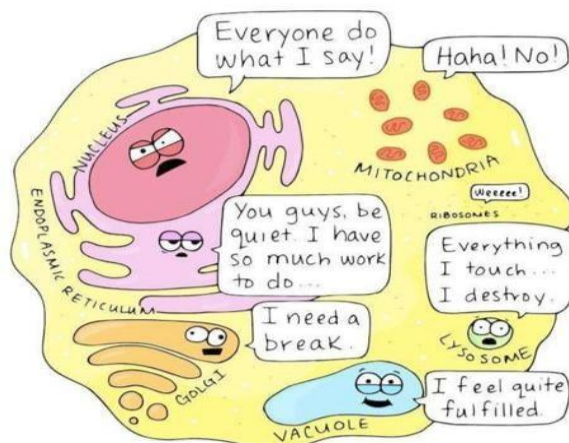
GBRC would like to extend a hearty welcome of new members to the family

- Abhi Shah
- Aditya Joshi
- Dr. Arpita Patel
- Depalee kumar Thombre
- Dr. Foram Vaidya
- Komal Sapara
- Kunjan Parikh
- Mansi Jani
- Mohit Chauhan
- Dr. Neha Patel
- Dr. Paritosh Parmar
- Piuli Gupta
- Dr. Pratik Patel
- Rupesh Thorat
- Sandipkumar Bambhaniya
- Dr. Sandhya Nanjani
- Dr. Shivkumar Yadav
- Varun Bavda
- Yesha Upadhyaya
- Garima Abbi
- Nihar Purohit

GBRC wishes best for the future of the bright minds who had left

- Komal Patel
- Akanksha Verma
- Deshna Shah
- Dr. Krupa Kansara
- Zuber Saiyed
- Dhruvil Chavda
- Prithviraj Jadeja
- Dr. Indra Singh
- Dr. Deepali Chauhan
- Gaurav Jethva

ON LIGHTER NOTE



If organelles could talk.

Beatrice the Biologist

MEMORANDUM OF UNDERSTANDING (MoU)

MoU between GBRC and Sterling Accuris Diagnostics



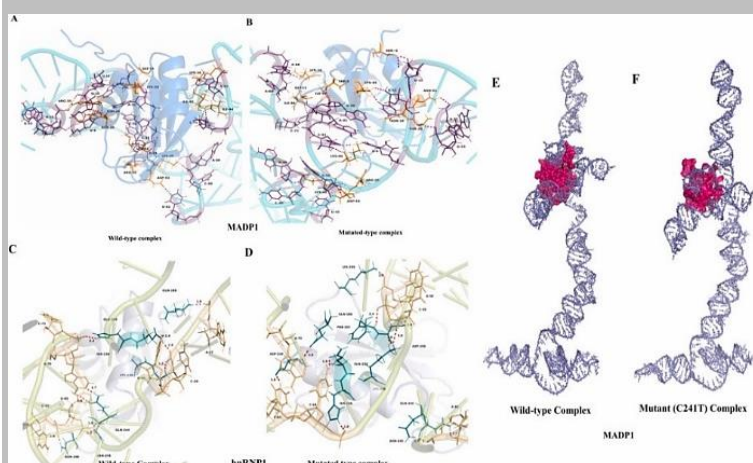
GBRC signed a MoU with Sterling Accuris Diagnostics on 9th June to undertake collaborative Research on COVID, Biotechnology, Biomedical Technology, and related interdisciplinary areas. Sterling Accuris Wellness Private Limited, Ahmedabad has its National Reference Laboratory services in Ahmedabad. It was established under the Companies Act, 2013 with the prime objective of providing cost-effective, error-free clinical laboratory services of International Standards. The purpose of this MoU is to work towards collaborative research in the fields of biotechnology, biomedical technology and related interdisciplinary areas

MoU between GBRC and Vekaria Healthcare

GBRC and Vekaria Healthcare LLP joined the MoU on 12th July 2021 by GBRC Director (Prof. Chaitanya G Joshi) and Founder and Designated Partner (Mr. Yogendra Vekaria). Vekaria Healthcare is a limited liability business association established in Jamnagar, with interests in medical pharmaceuticals, biotechnology, and clinical research. As a result of this MoU, GBRC will develop a candidate vaccine i.e., Recombinant Human Adenovirus Vaccine Candidate expressing immunogen of the new and old variants of SARS-CoV-2 of interest, such as B.1.351 (Brazil); B. 1.617, B. 1.617.2 (Delta), K417N (Delta plus) and other upcoming new strains.

RECENT PUBLICATIONS

In-Silico analysis reveals lower transcription efficiency of C241T variant of SARS-CoV-2 with host replication factors MADP1 and hnRNP-1



Authors: Armi Chaudhari; Minal Chaudhari; Sapna Mahera; Zuber Saiyed; Neelam M. Nathani; Shantanu Shukla; Dhaval Patel; Chirag Patel; Madhvi Joshi; Chaitanya G. Joshi

Journal: Informatics in Medicine

Impact factor: 3.37

The paper signifies the role of the untranslated regions (UTRs) of the SARS-CoV-2 genome in the disease progression and etiology. In the present study, the effect of the C241T mutation has been studied with respect to the changes in RNA structure and its interaction with the host replication factors MADP1 Zinc finger CCHC-type and RNA-binding motif 1(hnRNP1).

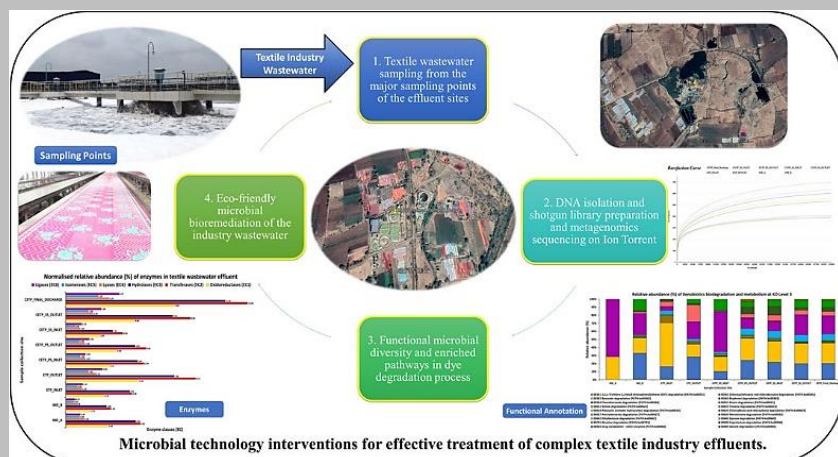
Textile Industry Wastewaters From Jetpur, Gujarat, India, Are Dominated by Shewanellaceae, Bacteroidaceae, and Pseudomonadaceae Harboring Genes Encoding Catalytic Enzymes for Textile Dye Degradation

Authors: Dinesh Kumar, Zarna Patel, Priti Pandita, Ramesh Pandit, Amrutlal Patel, Madhvi Joshi and Chaitanya Joshi

Journal: Frontiers in Environmental Science

Impact factor: 3.046

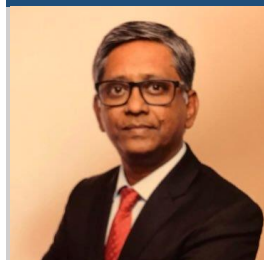
The paper highlighted the problem of generation of huge amount of intensive coloured effluent in textile industries which leads to threat to the environment. In this research, microbial communities which can help in remediating pollutants naturally were found. Their genes and enzymes in the textile wastewater systems were also identified.



PRABODH

GBRC is conducting "PRABODH" (Promoting Research Awareness in Biotechnology for Development of Human Resource) to accelerate the research work and to develop research-oriented thought process in staff.

INVITED GUEST



Expert (19/06/2021)

Dr. Shivprakash Rathnam

Managing Director,
Synchron Research Services,
Ahmedabad, Gujarat

Qualification	M. Pharm, Ph.D. Pharmaceutical
Areas of Interest/ Specialization	Clinical Research, Clinical Trials,
Topic	"My indigenous experience-success and failures of developing potential molecules from the herbal products"

Dr. Shivprakash Rathnam mainly focused on utilities of herbal drugs. The plants have been the source for various important molecules such as aspirin- salicylic acid. In India, herbal drugs have always been an important part of our home remedies, yet India contributes to only 2% of the global market which is very less than China (30%). China has also used its traditional medicines for the treatment of COVID-19, while India should also be doing the same thing. However, not all herbal drugs are safe. Thus, proper scientific evaluations need to be done before approval of usage. He also discussed their studies on curcumin and Terminalia chebula and their formulations. Furthermore, he discussed the studies conducted by them on neurological disorders such as Alzheimer's disease and the use of herbal drugs in them.



Expert (17/07/2021)

Dr. Mukul Jain

President,
Zydus Research Centre,
Ahmedabad, Gujarat

Qualification	M. Pharm, Ph.D. DBM
Areas of Interest/ Specialization	New Drug Discovery & Development
Topic	"Discovering New Therapies in Biopharmaceutical Landscape"

Dr. Mukul Jain briefly introduced the key and precarious parameters of vaccine development. He talked about his journey on Saroglitazar, how the plan on the paper took shape as the first indigenously developed NCE by any Indian pharmaceutical company and gave brisk on invention and mode of action of LB-PP02-4 ZYDPLA1 and a novel long-acting DPP-4 inhibitor. He enthusiastically introduced his recent work on the world-first COVID -19 DNA vaccine, ZyCoV-D, and how they ensured the parameters for the vaccine. It was followed by brief patent registration procedures. He concluded his session with his insight into the need for vaccine development as the healthcare sector is constantly coping up with ever-changing dimensions and challenges.

P.S.- The GBRC team sincerely congratulates Dr. Jain and his team for getting approval for ZyCoV-D

PRESENTATION FROM GBRC MEMBERS



Dr. Arpit Shukla
Scientist-B

Article: Parallel molecular mechanisms for enzyme temperature adaptation
Journal: Science
Impact factor: 47.728



Dr. Dhvani Jhala
Scientist-B

Article: Self-organizing 3D human trunk neuromuscular organoids
Journal: Cell Stem cell
Impact factor: 24.63



Tasnim Travadi
Junior Research Fellow

Article: Reprogramming to recover youthful epigenetic information and restore vision
Journal: Nature
Impact factor: 49.962



Armi Chaudhary
Junior Research Fellow

Article: A Programmable dual-RNA-guided DNA endonuclease in adaptive bacterial immunity
Journal: Science
Impact factor: 41.84

PRABODH

Expert
(21/08/2021)



Dr. Jhillu Singh Yadav
FNA, FTWAS,
Provost, Director and Trustee
(Former Director and Bhatnagar Fellow, CSIR-IICT)
Indrashil University, Ahmedabad, Gujarat

Areas of Interest/ Specialization	Pheromones, Integrated Pest Management
Topic	"Development of Pheromone Application Technology for Sustainable Agriculture in India"

Jhillu Singh Yadav mainly focused on the importance of eco-friendly pest control strategies like the implementation of pheromone technology, which mainly reduces the burden of chemical pesticides on the farming community and environment. He crisply described his work on semiochemicals at CSIR-IICT. India with a diversified agroecosystem, crop protection against various insect pests has become a challenging process today than ever before as many of the major insect pests have already acquired resistance to chemical pesticides. In spite of a number of outstanding examples, proving the potential of pheromones as components of Integrated Pest Management (IPM), use of sex pheromones has still not been in practice to a significant extent in India.

PRESENTATION FROM GBRC MEMBERS



Dr. Bhumika Prajapati
Scientist-B

Article: Microbial short-chain fatty acids modulate CD8+ T cell responses and improve adoptive immunotherapy for cancer
Journal: Nature Communications
Impact factor: 14.919

SKILL DEVELOPMENT PROGRAMS

CRISPR/Cas9 TRAINING to AAU (Anand Agriculture University), Anand



GBRC conducted one-day hands-on training on '**CRISPR/Cas9 Genome editing in Prokaryotes**'.

The training was conducted by GBRC fellows- Dr. Sachin Vyas and Armi Chaudhari. The training session included a tutorial on how to design guide RNA protocols. They also presented GBRC work on CRISPR and focused on troubleshooting.

IN-HOUSE INDUCTION TRAINING



GBRC conducted in-house training for the new joiners in the time period of 12-16th July 2021. The training included basic instrumentation, techniques, and Good Laboratory Practices (GLP) in molecular biology, genomics, cell culture, and proteomics and all the facilities in the GBRC. After the completion of training, the examination of GLP was conducted, which needs to be cleared by the fellows before working in the laboratory.

TRAINING ORGANIZED BY GBRC



GBRC conducted hands-on training program on “Molecular Techniques to monitor and investigate antimicrobial resistance (AMR)” for 10 days- 1st Sept to 10th Sept. Dr. Madhvi Joshi, Joint-Director GBRC, was co-investigator for the training. The training was conducted in collaboration with RVC (The Royal Veterinary College), AAU (Anand Agricultural University) and GSBTM (Gujarat State Biotechnology Mission). In this training GBRC have covered important topics like NGS introduction, Illumina sequencing chemistry, hands-on AmpliSeq library preparation, Illumina run set-up and also understanding of output data.

UPCOMING IN-HOUSE TRAINING

Upcoming Training	Schedule	Collaborative body
Molecular Docking and Molecular Dynamics	13 th Sept-17 th Sept	Indian Institute of Advanced Research
Basic Bioinformatics	20 th Sept-24 th Sept	Sterling Accuris Diagnostics
Animal Cell Culture and Flow Cytometry	Oct 1 st week	Ahmedabad University
IVF training	Oct 2 nd week	Kamdhenu University
Advanced Bioinformatics	18 th Oct-22 nd Oct	Gujarat University
Basic Molecular Biology	25 th Oct – 29 th Oct	Gujarat University
Metagenomics	8 th Nov - 12 th Nov	Veer Narmad South Gujarat University
Analytical extraction/ GC-MS/ SFE	15 th Nov to 19 th Nov	Gujarat Vidyapith
Real Time PCR and Digital PCR	22 th Nov - 26 th Nov	Sterling Accuris Diagnostics
Basic Bioinformatics	29 th Nov-3 rd Dec	GeneXplore Diagnostics and Research Centre
R, MATLAB	6 th Dec-10 th Dec	Inflibnet Centre*
Next Generation Sequencing (Ion Torrent/ MiSeq)	13 th Dec-17 th Dec	Anand Agricultural University
Capillary Sequencing and Fragment Analysis	20 th Dec-24 th Dec	Saurashtra University
HPLC and LC-MS	27 th Dec– 31 st Dec	Bhakta Kavi Narsinh Mehta University (BKNMU)

NEW RESEARCH PROJECTS

1. Project title: Genome wide association study to decipher the host genetic factors associated with resistance toward Cisplatin therapy in oral cancers.

Funding body: Gujarat State Biotechnology Mission

2. Project title: Establishing protocol for *in-silico*, *in-vitro*, and *in-vivo* validation of active botanicals for assessing anti-COVID efficacy

Funding body: Gujarat State Biotechnology Mission

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GUJARAT BIOTECHNOLOGY RESEARCH CENTRE

DEPARTMENT OF SCIENCE AND TECHNOLOGY
GOVERNMENT OF GUJARAT



ANNOUNCES

Shared LAB 
Online System

NGS Illumina MiSeq

NGS Ion S5 Semiconductor Sequencer

NGS Ion Proton

NGS Ion Personal Genome Machine

BD Flow Cytometer & Cell sorter

Capillary ABI 3500 Sequencer

Digital PCR

Real time PCR machine

PCR + Gel Doc

Nanodrop, Qubit

Lyophilizer

HPLC

GC-MS (Clarus 680 /Clarus SQ8C with column C18)

LC-MS

**HPC Server & Param Shavak Server for Bioinformatics
(with CLC Genomics and MATLAB)**



GBRC SHARED LAB ONLINE BOOKING SYSTEM: <https://gbr.org.in>



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