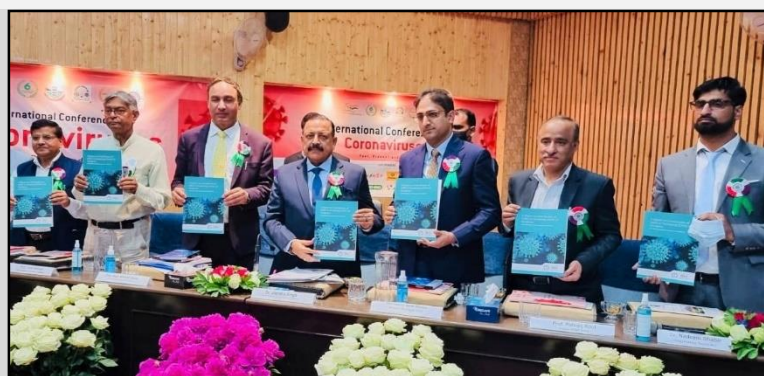


COVID-19 BOOK LAUNCH AND CONFERENCE PARTICIPATION

An international conference has been organized at Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir (SKUAST-K) on May 10-11, 2022 on the theme of “The International Conference on Coronaviruses: Past, Present, and Future”. On the occasion Dr. Jitendra Singh (Union Minister of State, Science & Technology) released the book "A Report on Contribution of GBRC in Combating COVID-19 Pandemic". The book is the compilation of all the COVID-19 related research work published by GBRC. Prof. C. G. Joshi, Director, GBRC and Dr. Madhvi Joshi, Joint Director, GBRC were invited for the lecture.



Dr. Jitendra Singh, Union Minister of State, Science & Technology, launching the book "A Report on Contribution of GBRC in Combating COVID-19 Pandemic"



Dr. Madhvi Joshi, Joint Director, GBRC at the conference

Best Oral Presentation

Dr. Apurvasinh Puvar, Scientist B, GBRC received award for the Best oral presentation at “The International Conference on Coronaviruses: Past, Present, and Future” held on May 10-11, 2022 at Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir (SKUAST-K).

Travel Award

- Dr. Apurvasinh Puvar, Scientist B, GBRC
- Dr. Rameshchandra Pandit, Scientist B, GBRC

The aforementioned scientists received travel award for “The International Conference on Coronaviruses: Past, Present, and Future” held on May 10-11, 2022 at Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir (SKUAST-K).



CONFERENCE PARTICIPATION- INDUSTRY ACADEMIA MEET: NEW ERA NEEDS AND SOCIAL IMPACT



Gujarat State Biotechnology Mission (GSBTM) has organized “Industry Academia Meet: New Era Needs and Social Impact” on 23rd June, 2022. This event was organized in order to create synergy between the industry and academia, imparting technical education to bridge the skill gap and upskilling youth. Scientific staff of GBRC has also participated in the event.

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PUBLICATIONS

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SKILL DEVELOPMENT PROGRAMS NEW FACILITIES AT GBRC

HEAVILY MUTATED B.1.1.529 VARIANT

ALERT GUJARAT GOVTS TEST FOR FIFERS FROM 9 COUNTRIES, EU



If tested positive, the test samples of passengers at international arrivals will be sent for compulsory genome sequencing; while no trace of the Omicron variant has yet been found in state, GBRC scientists are prepared for sequencing that is likely to be commissioned soon

TWEETS @ahmedabadmirror
 The countries mentioned in the order are the UK, Zimbabwe, South Africa, Brazil, Botswana, Bangladesh, China, Mauritius, New Zealand and whole of Europe

Continued on Page 4

FIRST CASE OF OMICRON BA.5 SUB-VARIANT CONFIRMED IN GUJARAT

The Covid patient, a Vadodra-based international traveller from South Africa, is the second BA.5 case in India; the first one was reported in Telangana

Continued on Page 4

CDV vax trial on other big cats before final jab to lions via darts

Vax Successfully Tested On Mice

WHEN VIRUS TAKES LION
 29 lions had died of CDV in 2018 in Gir National Park

Continued on Page 5

Omicron remains numero uno in Guj

8 Sub-Variants of Coronavirus Identified in Two Months: GBRC

Sub-variant	Count
BA.1	1
BA.2	1
BA.3	1
BA.4	1
BA.5	1
BA.6	1
BA.7	1
BA.8	1
BA.9	1
BA.10	1
BA.11	1
BA.12	1
BA.13	1
BA.14	1
BA.15	1
BA.16	1
BA.17	1
BA.18	1
BA.19	1
BA.20	1
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BA.92	1
BA.93	1
BA.94	1
BA.95	1
BA.96	1
BA.97	1
BA.98	1
BA.99	1
BA.100	1

Continued on Page 6

10 NEWS

Gujarat reports its first case of XE variant of coronavirus

So far, only 600 instances of variant have been recorded in global repository

Continued on Page 6

Not getting pregnant? Blame gut microbiome

Gujarat-Based Study Reveals Fewer Healthy Bacteria In Women With Infertility

GOOD GUT FOR GOOD NEWS

- Study analyzed gut microbes in women who could conceive and those who could not
- Majority women had more than three consecutive miscarriages or two or more failed IVF-embryo transfer cycles
- Like the overall body health, the reproductive health was also marked by better diversity of gut bacteria with higher concentration of 'good bacteria'
- Women who had difficulty conceiving had higher concentration of firmicutes and hungatella among others

Continued on Page 4

STAFF WELFARE CLUB

An association has been initiated which is quoted as Staff Welfare Club. The main object of the association is to establish, promote, subsidize, encourage, provide, maintain, organize, undertake, manage, equip, develop, recondition, operate, conduct and to run for in the music, dance, sports, social welfare, carry out scientific and technical, other than political activities.



Mr. Akhilesh Modi,
Awarded For Best
Monthly
Presentation
For May-2022



Ms. Purva Gohil,
Awarded For
Best Monthly
Presentation
For June-2022



Mr. Priyank
Chavda,
Awarded For
Best Question in
PRABODH
For May-2022



Mr. Dinesh
Kumar,
Awarded For
Best Question in
PRABODH
For June-2022

INVITED TALKS BY GBRC TEAM

- **Prof. C. G. Joshi, Director, GBRC** presented a talk on "One Health Approach for Management of COVID-19" at "The International Conference on Coronaviruses: Past, Present, and Future" held on May, 10-11, 2022 at Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir (SKUAST-K).
- **Dr. Madhvi Joshi, Joint Director, GBRC** also presented a talk on "Management of COVID-19" at "The International Conference on Coronaviruses: Past, Present, and Future" held on May, 10-11, 2022 at Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir (SKUAST-K) and interacted with the young Biotechnology students of The Islamia College of Science and Commerce, Srinagar.
- **Dr. Madhvi Joshi, Joint Director, GBRC** also presented a talk on "Wastewater Surveillance: Powerful tool for pandemic management" in webinar held on 31st May, 2022, organized by Tata Institute for Genetics and Society (TIGS).

SPECIAL TWEETS



Shekhar Mande

@shekhar_mande · Jun 17

Visit to an amazing place, Gujrat Biotechnology Research Centre @gbrcc_gujarat This has excellent facilities, highly motivated staff, and have been doing outstanding work during the #COVID pandemic.

@DBTIndia

ARRIVAL & DEPARTURE

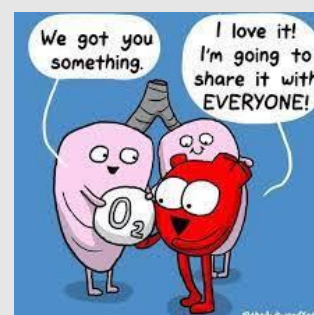
GBRC would like to extend a hearty welcome of new members to the family

- Dr. Arivudainambi Seenichamy
- Dr. Pranitha S. Pandit
- Dr. Nishant Patel
- Dr. Kishor Sureshbhai Patil
- Dr. Rushika Patel
- Dr. Kiran Bharat Lokhande
- Dr. Harshvadan Dineshbhai Patel
- Dr. Abhishek Bachubhai Parmar
- Dr. Arpan Rameshchandra Modi
- Ritika Lalit Mohan Pant
- Shivangi Rajendrasinh Gohil
- Amiben Vinubhai Lakhani
- Jaina Vinodchandra Patel
- Sonal Chandrakant Patil
- Priyal Jayeshbhai Visavadiya
- Devanshi Ashokbhai Patel
- Shreya Johnson
- Kaksha Himmatbhai Savaliya
- Shruti Chirag Morjaria
- Anitaba Prabhatsinh Chauhan
- Bhumika Bhagwandas Patel
- Deepika Gupta
- Tejasvini Rajeev Mehta
- Unnati Vinodbhai Panchal
- Nilamba R. Basiya
- Urmi Vyas

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

- Dr. Pooja Patel
- Dr. Jay Rangani
- Dr. Paritosh Parmar
- Dr. Pratik Patel
- Aditya Joshi
- Mohit Chauhan
- Sangeeta Kumari
- Shreya Parag Kalan
- Ms. Armi Chaudhari
- Ms. Disha Vora

ON LIGHTER NOTE



MEMORANDUM OF UNDERSTANDING (MoUs)

MoU between GBRC and Banas Dairy, Dudhsagar Dairy, National Dairy Development Board, Kamdhenu University, Dept. of Animal Husbandry at Govt. of Gujarat



GBRC has signed MoUs on 8th April, 2022, with collaborators which are Banas Dairy, Dudhsagar Dairy, National Dairy Development Board, Kamdhenu University, Dept. of Animal Husbandry at Govt. of Gujarat, for collaborative research in “Establishing genomic selection network for dairy cattle and buffalo breeds in Gujarat”. Heads of all the institutes were present for the occasion. This MoUs done with the objective of collaborative research on genomic selection of high yielding cattels as Mehsani buffalo and Kankarej cow.

VISIT BY DIGNITARIES

Visit on 1st April 2022



Prof. Vinod K. Diwan, Senior Professor,
Centre for Global Health, Karolinska Institutet (KI),
Sweden &

Dr. Komal Shah, Assistant Professor,
Indian Institute of Public Health- Gandhinagar

Visit on 17th June 2022



Dr. Shekhar Mande,
Former Director General, CSIR India

Visit on 14th June 2022



Dr. Dhaval Patel, IAS
Municipal Commissioner,
Gandhinagar



Shree C. M. Trivedi
Dy. Municipal Commissioner,
Gandhinagar

Visit on 25th April 2022



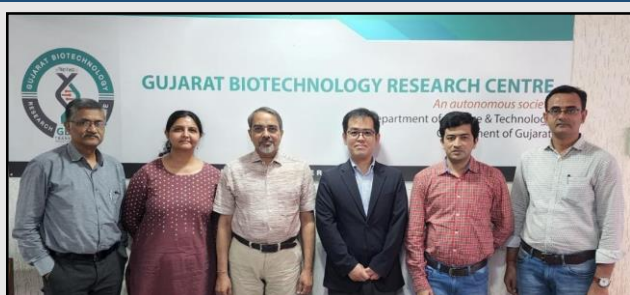
Dr. Tarun Sharma, Associate Professor
Dr. Chriayu Desai, Associate Professor,
Dr. Sudheer D.V.N. Pamidimarri, Associate Professor
Gujarat Biotechnology University, Gandhinagar

Visit on 03rd June 2022



Dr. Shirshendu Mukherjee
Mission Director, Biotechnology Industry Research
Assistance Council (BIRAC)

Visit on 02nd June 2022



Yoshiyuki Tanaka
Director, R & D, ARKRAY Healthcare Private Ltd., Mumbai

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 processes in staff.

INVITED GUESTS



Expert (13/04/2022)

Dr. Karla Mercado-Shekhar,
Assistant Professor,
Biological Engineering, Indian
Institute of Technology (IIT)
Gandhinagar

Topic: "Enabling techniques for tissue characterization using ultrasound."

The topic was on the application of quantitative ultrasound imaging in translational medicine and noninvasive diagnosis for cancer tissue detection, blood clot localization in body and also to differentiate injured tissue from the normal tissue type.

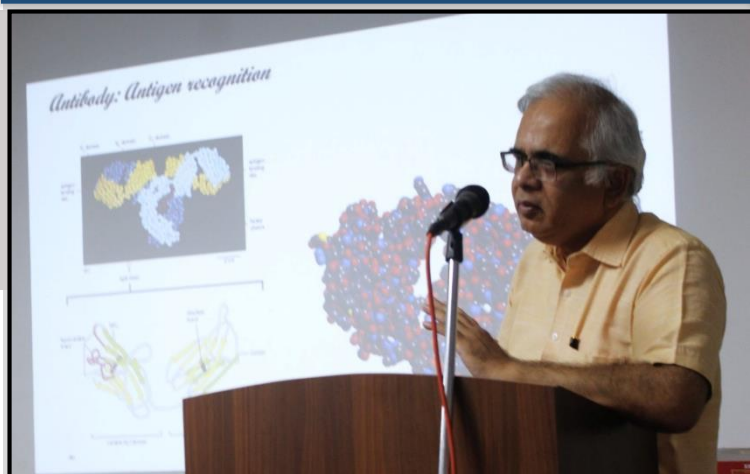


Expert (21/05/2022)

Shree Maulik Bhatt,
Managing Trustee,
Cosmo Research Foundation,
Ahmedabad

Topic: "Shree Ram - Cosmological timeline".

Mr. Bhatt's talk was on calculation of the actual time period of the Bhagwan Shree Ram existence. With the help of vedic astronomical calculations he found some discrepancies in the modern science. He also mentioned some misinterpretation of Ramayna written by Maharishi Valmiki.



Expert (18/06/2022)

Dr. Shekhar Mande,
Former Director General,
Council of Scientific and Industrial Research (CSIR), India

Topic : "How atomic view has enhanced our understanding of Biology".

He discussed about how the research progression in biophysics impacted the research in general biology. It has enhanced our understanding of biological world. It helped us to understand the structural features of biomolecules, cell membrane, DNA packing and their three dimensional arrangements. Biophysics has helped to understand the structural basis of various biological mechanisms as protein translation, drug interaction with the target protein as well as the mechanism of invasion of SARS-CoV2 virus in the host through interaction with the angiotensin-converting enzyme. This will further help in development of neutralizing antibodies. Cryoelectron microscopy technique is also revolutionizing the biological research. He also discussed about the bioentrepreneurship and encouraged the students to develop biology based innovations.



Dr. Ishan Raval
Scientist B, GBRC

Article: An intracellular nanobody targeting T4SS effector inhibits *Ehrlichia* infection.

Journal: PNAS

Impact factor: 12.78



Dr. Reshma Talkal
RA, GBRC

Article: Regulation of rumen development in neonatal ruminants through microbial metagenomes and host transcriptomes

Journal: Genome Biology

Impact factor: 13.54

PRABODH

PRESENTATIONS FROM GBRC MEMBERS



Roshani Mishra
JRF, GBRC

Article: Bacteria-triggered tumor-specific thrombosis to enable potent photothermal immunotherapy of cancer.
Journal: Science Advances
Impact factor: 14.14



Nitin Shukla
JRF, GBRC

Article: Pre-activated antiviral innate immunity in the upper airways controls early SARS-CoV-2 infection in children.
Journal: Nature Biotechnology
Impact factor: 54.91



Rupesh Thorat
JRF, GBRC

Article: A nanovaccine for antigen self-presentation and immunosuppression reversal as a personalized cancer immunotherapy strategy.
Journal: Nature Nanotechnology
Impact factor: 39.21

RECENT PUBLICATIONS

FIRST REPORT ON GENOME WIDE ASSOCIATION STUDY IN WESTERN INDIAN POPULATION REVEALS HOST GENETIC FACTORS FOR COVID-19 SEVERITY AND OUTCOME

Authors: Ramesh Pandit, Indra Singh, Afzal Ansari, Janvi Raval, Zarna Patel, Raghav Dixit, Pranay Shah, Kamlesh Upadhyay, Naresh Chuhan, Kairavi Desai, Meenakshi Shah, Bhavesh Modi, Madhvi Joshi, Chaitanya Joshi

Journal: Genomics

Impact factor: 5.736

The study covered the effect of host genetic factors on the disease severity and susceptibility of COVID-19 disease. Clinically diagnosed patients have been divided into three groups as deceased-recovered, asymptomatic-recovered, and deceased-asymptomatic group comparison. The markers nearby the genes associated with lung and heart diseases such as Tumor necrosis factor superfamily (TNFSF4&18), showed noteworthy association with the disease severity and outcome for the COVID-19. It can be used for the risk prediction in COVID-19.

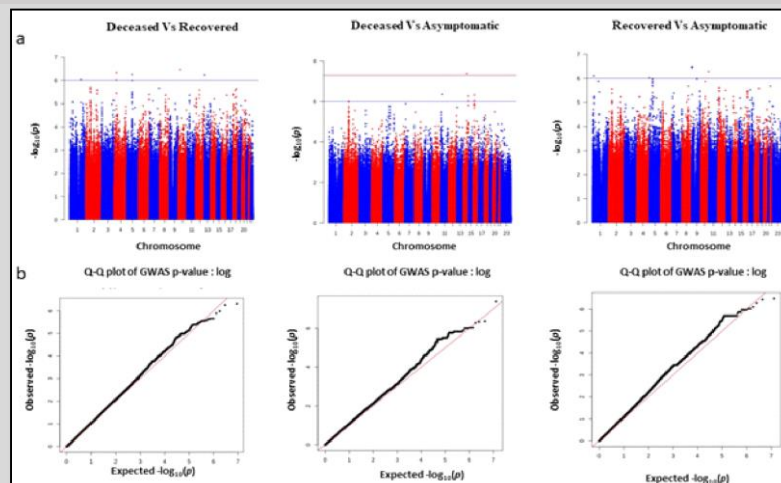
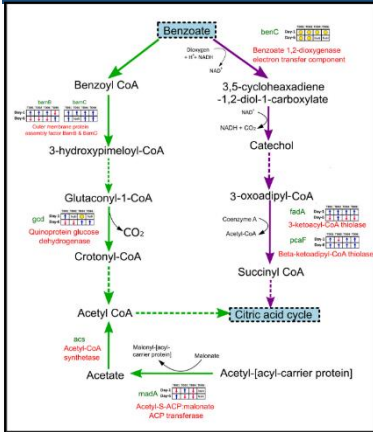


Figure depicting Manhattan and Q-Q plots of the association statistics from the meta-analysis of three-group comparison using PLINK.

RECENT PUBLICATIONS

TRANSCRIPTOME PROFILING REVEALS UPREGULATION OF BENZOATE DEGRADATION AND RELATED GENES IN PSEUDOMONAS AERUGINOSA D6 DURING TEXTILE DYE DEGRADATION



Authors: Nanjani, Sandhya, Zarna Patel, Shruti Sharma, Priti Raj Pandit, Ramesh Pandit, Madhvi N. Joshi, Amrutlal K. Patel, and Chaitanya Joshi

Journal: Environmental Research (2022): 113288

Impact factor: 6.498

Increasing textile dye pollution needs new technology for their bioremediation. In the study, transcriptomic approach has been used to understand remediation of textile dyes by *Pseudomonas aeruginosa* D6. Several genes have been identified which were related to core metabolic processes. The involvement of the benzoate pathway was found to be implied the appearance of aromatic intermediates during decolorization, which in turn infers dye degradation.

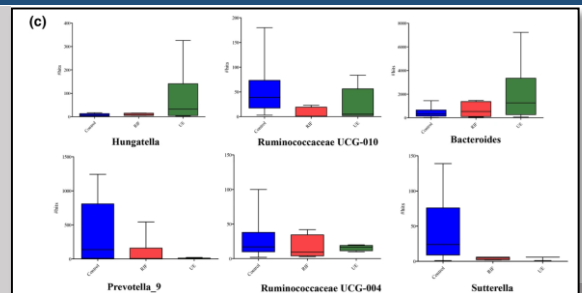
DISTINCT GUT AND VAGINAL MICROBIOTA PROFILE IN WOMEN WITH RECURRENT IMPLANTATION FAILURE AND UNEXPLAINED INFERTILITY

Authors: Patel Nayna, Nidhi Patel, Sejal Pal, Neelam Nathani, Ramesh Pandit, Molina Patel, Niket Patel, Chaitanya Joshi, and Bhavin Parekh

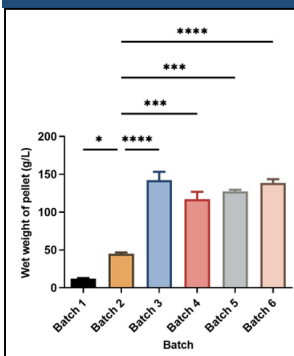
Journal: BMC Women's Health 22, no. 1 (2022): 1-15

Impact factor: 2.809

In the paper association of female reproductive tract dysbiosis with gut dysbiosis has been explored. The gut-vaginal microbiota axis in infertile women has been investigated. Through metagenomics diversity, structure, and composition of faecal and vaginal bacteria of the controls with that of the infertile cohort have been evaluated. Difference in α -diversity and β -diversity of the gut bacteria has been found among the infertile groups. In the infertile cohort mucus-producing genera declined where as *Hungatella*, associated with trimethylamine N-oxide (TMAO) production, were enriched in the infertile cohort. The genus *Lactobacillus* was abundant in vaginal microbiota. The study suggested that gut dysbiosis and vaginal eubiosis occurred in the infertile women, whereas the opposite trend occurred in the controls.



ENHANCED PRODUCTION PROCESS OF RECOMBINANT MATURE SERRATIOPEPTIDASE IN *Escherichia coli* USING FED BATCH CULTURE BY SELF-PROTEOLYTIC ACTIVITY OF FUSION PROTEIN.



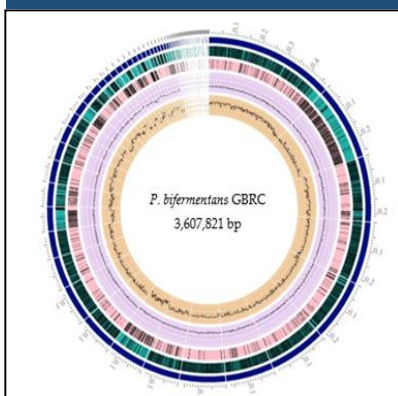
Authors: Pooja Doshi, Sadik Dantoliya, Akhilesh Modi, Arpit Shukla, Dhaval Patel, Chaitanya Joshi, Madhvi Joshi

Journal: Fermentation

Impact factor: 3.0

Serratiopeptidase is an anti-inflammatory, mucolytic, fibrinolytic, analgesic enzyme. In the paper a cost effective, bioreactor level production process has been described for the production of recombinant serratiopeptidase protein which is based on fed-batch fermentation. After process optimization high yield of 2.5 ± 0.764 g L⁻¹ of protein was obtained, having 8382 ± 291 U mg⁻¹ of specific caseinolytic activity.

IN-DEPTH ANALYSIS OF AN OBLIGATE ANAEROBE *Paraclostridium bifermentans* ISOLATED FROM UTERUS OF *Bubalus bubalis*



Authors: Purva Gohil, Kajal Patel, Srushti Patel, Ramesh Pandit, Vishal Suthar, Srinivas Duggirala, Madhvi Joshi, Deepak Patil, and Chaitanya Joshi

Journal: Animals

Impact factor: 2.752

Uterine infection is one of the major concerns in bovine animals which resulted into reducing fertility, production loss, and early culling of the animals. In the current study novel bacterium in the uterine environment of *Bubalus bubalis* causing infections has been identified. A strictly anaerobic bacterial strain designated as *Paraclostridium bifermentans* GBRC was isolated and characterized.

SKILL DEVELOPMENT PROGRAMS

FLOW CYTOMETRY: PRINCIPLES, EXPERIMENTAL DESIGNING & DATA ANALYSIS

Collaborating Institute : Flowcytometry Solutions Pvt. Ltd

Coordinators: Dr. Hemant Agarwal (Flowcytometry Solutions Pvt. Ltd), Ms. Payal Modi (GBRC)

Training 1: 5th – 8th April, 2022

Training 2: 24th – 27th May, 2022



Participants at the training: Flow cytometry: Principles, Experimental Designing & Data Analysis

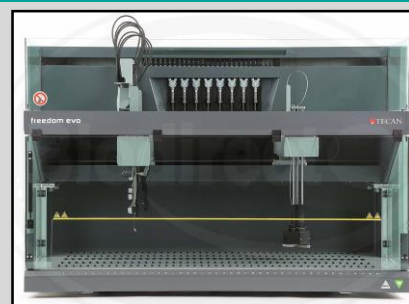
NEW FACILITIES AT GBRC



MALDI-TOF



High-end Inverted Microscope



Tecan Freedom EVO Liquid Handler



2-D Gel Electrophoresis System

Contact Information

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For Shared Lab Facility : <https://gbrc.org.in/>



Editor in Chief:

Prof. Chaitanya G. Joshi
Director - GBRC

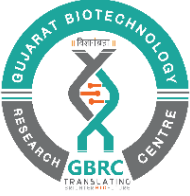
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Joint-Director – GBRC

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Tasnim Travadi (Senior Research Fellow- GBRC)



GUJARAT BIOTECHNOLOGY RESEARCH CENTRE
DEPARTMENT OF SCIENCE AND TECHNOLOGY
GOVERNMENT OF GUJARAT



ANNOUNCES

Shared LAB



NGS Illumina NovaSeq 6000

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)

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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