P.S.R. ENGINEERING COLLEGE
(An Autonomous Institution, Affiliated to Anna University, Chennai)
Sevalpatti (P.O), Sivakasi - 626140

Department of Biotechnology

NEWSLETTER

2017 Volume 1

Inside this Issue

Message from Principal

I am much pleased in releasing this issue of News Letter. Keeping in mind, enhancement of technical knowledge and better employability of the students, the institution shows keen interest in organizing various development programmes for staff and students. I wish, every student passing out from our College has rich blend of knowledge and skill and occupies better position in the society

Institute Vision

To contribute to society through excellence in technical education with societal values and thus a valuable resource for industry and the humanity.

Institute Mission

- To create an ambiance for quality learning experience by providing sustained care and facilities.
- To offer higher level training encompassing both theory and practices with human and social values.
- To provide knowledge based services and professional skills to adapt tomorrow's technology and embedded global changes.

Biotechnology Vision

- The vision of the Biotechnology Department is to produce graduates capable of effectively using the imparted scientific and technical knowledge to meet the dynamic demands of biotechnological industry with social values.

Biotechnology Mission

- Offering under graduate programme by providing effective and well-balanced curriculum and equip themselves to gear up to the challenges awaiting them.
- Providing the technical, research and intellectual resources that will enable the students to have a successful career in the field of Biotechnology.
- Providing need based training and professional skills to satisfy the needs of society and the industry

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO:1 Lead a professional career by acquiring the basic knowledge in the field of specialization and allied Engineering.

PEO:2 Assess the real life problems and deal with them confidently relevance to the society.

PEO:3 Engage in lifelong learning by pursuing higher studies and participating in professional organizations.

PEO:4 Exhibit interpersonal skills and able to work as a team for success.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO:1 Acquire competency in applications of engineering principles to biological systems.

PSO:2 Able to design and analyze varied biotechnological solutions for industrial applications.

PSO:3 Apply biochemical and microbial processing techniques for agriculture and medical applications.

PSO:4 Exhibit interpersonal knowledge to develop futuristic bioengineering solutions.

Biotech Infrastructure

The Biotechnology Department Laboratory is very modern and function effectively with modern imported equipment like Gas Chromatography, BIOENGINEERING Bioreactor, Thermocycler, CO_2 Incubator, ELISA Reader, 2D Gel Electrophoresis, Fluorescent Microscope, Laminar Air Flow Chamber, UV-Vis Spectrophotometer, Gel Documentation System, Deep Freezer, Refrigerated Centrifuge, Cryostat, Lyophilizer, Microfiltration, Ultrafiltration, Double Pipe Heat Exchanger, Fluidization and Packed Column, Plate and Frame Filter Press and Various Bioinformatics software.

BIOTECHNOLOGY DEPARTMENT ASSOCIATION ACTIVITIES

International conference on Biotechnology ICBTSF' 18".
Dr.R. Paramasivan, ICMR Dr.M. Muniaraj, ICMR Dr. S. Sureshkumar, Wachemo University Dr. S. Murugesan, bitspilani, were the Resource persons.

Seminar on "upcoming Trends in Biotechnology" by Dr.M.Indhumathy Assistant Professor, Biotechnology, P.S.R. Engineering college held on 31.08.2017

Workshop on laboratory instrumentation by Er. Adaikalam Systronics, Service engineer, Chennai held on 26.10.2017

Faculty Achievements	Ms. K. Shalini, Assistant Professor has completed NPTEL online Certification Course on Biomaterials.
	Ms. R. Rajeswari, Associate Professor has completed NPTEL online Certification Course on Cell Culture Techniques.
FACULTY PUBLICATION	Rajeswari.R, "Biopotential Effects of Seaweeds for Neurological Disorders Mini Review", World Journal of Pharmaceutical Research, Vol 6, Issue 12, pg no 427-436, 2017.
	Rajeswari.R, "Neuro Protective Activity of *Sargassum Wightii* Against Neurotoxicity Induced Cell Death an *In-Vitro* Human Neuro Blastoma Model", International Journal of Pharmaceutical Research, Vol 10, pg no 780-784, 2018.
	Indhumathy.M, "Design, Graph Theoretical Analysis, Density Functionality Theories, Insilico Modeling, Synthesis, Characterization and Biological Activities of Novel Thiazole Fused Quinazolinone Derivatives." Drug development research, Vol 79, Issue 6, pg no 260-274, Augest2018.
	Indhumathy.M, "Development of Superhydrophobic Microfibers for Bandage Coatings", Fibers and Polymers, Vol 19, Issue 6, pg no 1207-1218, 2018.

Student Activities

Participated Learning

S.No	Name of the students	Events	Duration	Organization
1	Mr. M.L. Gowtham Mr. G. Subramanian Mr. G. Hariprasad	Workshop on Recent Trends and Future Perspectives of Animal Cell Culture Techniques	19-12-2017 to 20-12-2017	K.S.Rangasamy College of Technology, Tiruchengode

Student award

Bharatha Kumar.S (III BIOTECH) won the Best Paper Award for his presentation in FUTURA'17 held in Bannari Amman Institute of Technology.

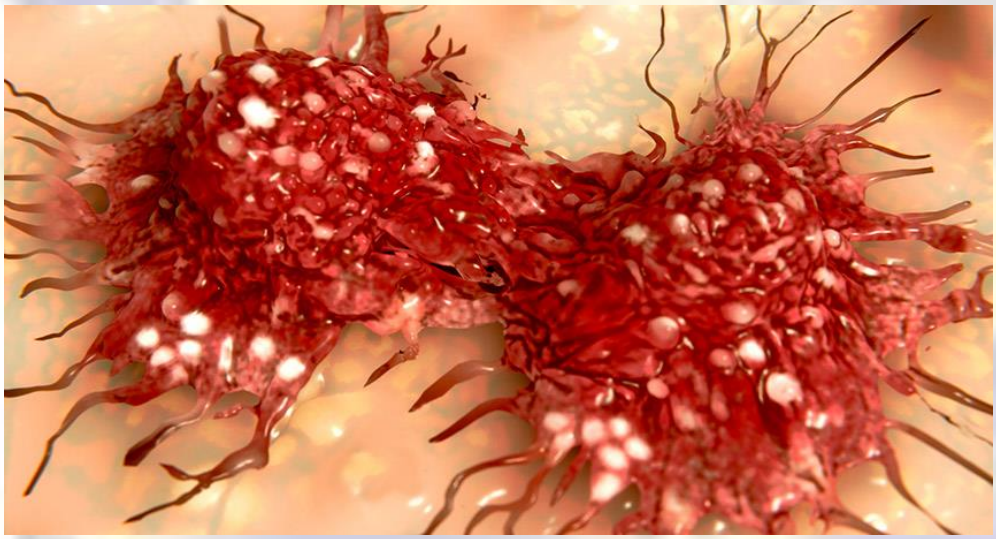
Ms. S. Suga Priya (III BIOTECH) won the second prize in INTELIZA 2K17 " An Innovative Project Presentation conducted by innovation cell of P.S.R. Engineering college

Experimental Learning

S.No	Name of the student	Traning	Duration	Organization/Company
1	Ms. R. Surya Ms. R. Surekha Ms. T. Saktheeswari	In-Plant Training	08-11-2017 to 14-11-2017	Meenakshi Mission Hospital and Research Centre, Madurai
2	Ms. C. Gowsalya Ms. S. Sugapriya	Internship	11/11/2017 to 16/11/2017	Vadamalayan Hospitals (P) Ltd, Madurai
3	Ms. K. SathyaPriya	Internship	16-11-2017 to 21-11-2017	Vadamalayan Hospitals (P) Ltd, Madurai
4	Mr. S.Ajith kumar, Mr. S.Arun prasath Mr. B.Faizal farith ahamed	Internship	1.12.2017 to 28.02.2018	Phycospectrum Environmental research Centre (PERC)
5	Ms. M.Kasthuri	Internship	01-12-2017 to 30-03-2018	Biozone research Technologies Pvt.Ltd, Chennai

Biotech News

Random mutations play large role in cancer, study finds



Analysis suggests that cell division produces more malignancy-linked errors than environment, inheritance

GROWING PAINS as cells divide and grow to replenish and repair organs, accidental mutations may crop up in cancer-associated genes. A new study suggests such random mistakes are the source of 66 percent of mutations in cancer cells (illustrated here) across the board.

Researchers have identified new enemies in the war on cancer: ones that are already inside cells and that no one can avoid.

Random mistakes made as stem cells divide are responsible for about two-thirds of the mutations in cancer cells, researchers from Johns Hopkins University report. Across all cancer types, environment and lifestyle factors, such as smoking and obesity, contribute 29 percent of cancer mutations, and 5 percent are inherited. That finding challenges the common wisdom that cancer is the product of heredity and the environment. "There's a third cause and this cause of mutations is a major cause," says cancer geneticist Bert Vogelstein.

For many organs, more of the mutations that lead to cancer come from random mistakes in DNA made when cells divide (center) than from the environment (right) or inherited factors (left). Cancers depicted in : B, brain; Bl, bladder; Br, breast; C, cervical; CR, colorectal; E, esophagus; HN, head and neck; K, kidney; Li, liver; Lk, leukemia; Lu, lung; M, melanoma; NHL, non-Hodgkin lymphoma; O, ovarian; P, pancreas; S, stomach; Th, thyroid; U, uterus.

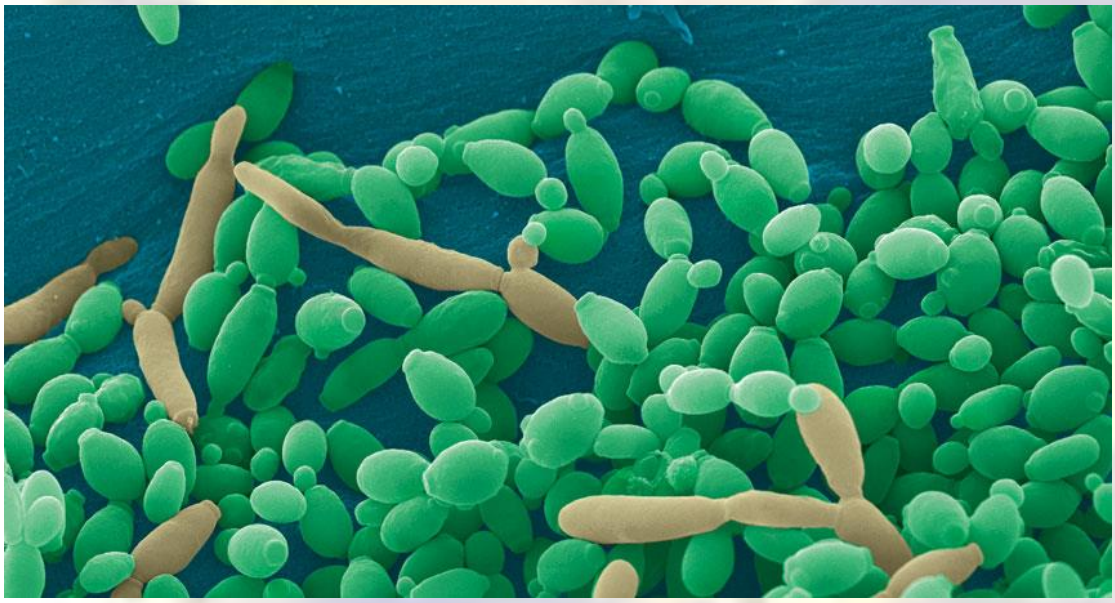
40 more ‘intelligence’ genes found

Evidence grows for the idea that some of your smarts are in your DNA

SMART GENES: A large genetic study turns up more genes that may help build intelligence into the brain. Smarty-pants have 40 new reasons to thank their parents for their powerful brains. By sifting through the genetics of nearly 80,000 people, researchers have uncovered 40 genes that may make certain people smarter. That brings the total number of suspected “intelligence genes” to 52. But studying these genes, many of which play roles in brain cell development, may ultimately help scientists understand how intelligence is built into brains.

Scientists disagreed on whether intelligence could actually be measured and if so, whether genes had anything at all to do with the trait, as opposed to education and other life experiences. But now “we are so many light-years beyond that, as you can see from studies like this,” says Haier. “This is very exciting and very positive news. This technique pointed out particular versions of 22 genes, half of which were not previously known to have a role in intellectual ability. A different technique identified 30 more intelligence genes, only one of which had been previously found. Many of the 40 genes newly linked to intelligence are thought to help with brain cell development.

Gut fungi might be linked to obesity and inflammatory bowel disorders



Candida tropicalis **usually grows as a harmless roundish budding yeast (green), but in the presence of two bacteria it stretches into long filaments (brown) that may provoke inflammation in intestines. Fungi may affect gut health in unexpected ways, new research suggests.**

Scientists have already described links between health issues, including obesity, and gut bacteria — often called the microbiome. But far less is known about the role of the gut's fungal mix, or *mycobiome*. *Firmicutes* bacteria associated with obesity increased, while Bacteroidetes bacteria decreased in abundance.

Mice fed high-fat chow had less Saccharomyces cerevisiae yeast and more *Candida albicans* in their guts than did mice that ate standard chow. *S. cerevisiae* is a yeast used in making wine, beer and bread and has been associated with good health. *C. albicans* is an organism that causes many yeast infections. Hager and Ghannoum propose that giving Crohn's disease patients antifungal drugs and then adding beneficial fungi, such as *S. cerevisiae*, could create a healthier microbe balance in the gut.

Editorial Board