ISSN: 2454-6968
RNI No. UPENG/2013/54102

Rs. 475
Volume 6
Issue 63
November 2018

BIOTECH EXPRESS

Illumina Acquires Pacific Biosciences for $1.2 Billion

Startup Report: Shreeji Biotech Approaching Multidimensionally from the starting

Need to Standardize Homeopathy Medicine & Practices

Role of Biotechnology in Tuberculosis control in India – A Revolution in diagnostics sector

EVENTS:
BIOSD 2018
BEHSD 2018
NGS in Clinical Genomics
BEST 2019
6th AIST International Imaging workshop

CSIR committed to make common man's life easy: Dr Shekhar C Mande, DG CSIR

USE OF TECHNOLOGY CAN MINIMIZE THE NEED FOR AGRICULTURE LOAN WAIVERS, MAKING THEM REDUNDANT EVENTUALLY

Management of Acne Vulgaris with Topical Medicine: Current Perspective

Advanced Omics Technologies & Approaches

17-18 January 2019 • Mumbai, India

Fast Forwarding Future with Omics Revolution

Microarrays
Flow Cytometry
Next Generation Sequencing
Mass Spectrometry
Multi-Omics Technology
NMR Spectroscopy
Single Cell Omics
Polymerase Chain Reaction
Hybridization
Chromatography
Electrophoresis
Computational Biology
Bioinformatics
Precision Medicine
Gene Therapy
Quality Assurance

Register NOW!

Organized by
SELECTBIO

For queries, contact

Submission: g.sharma@selectbio.in | 7696025050
Registration: f.zainab@selectbio.in | 7696125050
Exhibition: mjsingh@selectbio.in | 7696225050
Website: www.selectbioindia.com
WhatsApp: 9041725050

CONTENTS

BEM inside...

Volume 6 Issue 63 November 2018

Chief Editor
Dr. Seema P. Upadhye
(Former Principal, Biochemist)

Managing Editor:
Kamal Pratap Singh

VOLUME 6 ISSUE 63
November 2018

ALL RIGHT RESERVED. No part of this issue can be printed in whole or in part without the written permission of the publisher. Editors, printer and publisher do not take responsibility for any mistake though information are best to assess.

Subscription and Article Submission

Annual Subscription

Please see Subscription Rate card inside.

Send your all entries at:
Biotech Express, V-31/4, Ext-1, Shalimar Garden, Sahibabad, Ghaziabad, U.P- 201005.

Article submission
All queries related to article submission can be sent to biotechexpressindia@gmail.com. For more information kindly visit website: www.kashbiotech.com

Publisher : Kamal Pratap Singh

Printed at : Monex offset, B-12 SD complex, near MMG hospital, Ghaziabad- 201005.

Individual rates available to subscribers paying by personal cheque or NEFT. Order for Students, PhDs, postdoc subscription must be accompanied by a copy of student ID.

The Biotech Express magazine publishes between 10th to 15th of every month.

CURRENT TOP NEWS

CSIR committed to make common man's life easy: Dr Shekhar C Mande, DG CSIR

26

24 NEWS IN FOCUS

Coming Soon: New generation of plant-based 'green crackers' for less-polluting Diwali

New evidence released on the trends of Non-Communicable diseases and Suicide for every state of India

Illumina Acquires Pacific Biosciences for $1.2 Billion

Novartis aanounced to file 60 Regulatory Filings Over the period of Next Three Years

Six professors win Infosys Prize 2018 for science and research

The DBT/Wellcome Trust India Alliance Celebrates 10 Years of Enabling Biomedical Research in India

44 RESEARCH NEWS

Appendix identified as a potential starting point for Parkinson's disease

Cellphone technology developed to detect HIV

Evidence of restored vision in rats following cell transplant

First assessment of planetary boundaries for antibiotic and pesticide resistance

Just a single missing gene may lead to miscarriage

Scientists made functioning 3D human neural networks from stem cells

Harvard and the Brigham call for more than 30 retractions of cardiac stem cell research

Startup Report:

22

Shreeji Biotech : Approaching Multidimensionally from the starting

EVENTS:

35

BRSI - IICT BIOSD 2018, 22-25 November, Hyderabad, India
BEHSD 2018, 27-28 November , CSIR-IITR Lucknow, India
NGS in Clinical Genomics, 29-30 November, Bangalore, India
BEST 2019, January, Chennai
6th AIST International Imaging workshop, 20-27 January 2019, Japan.

Advisory Board

From the very first issue, Biotech Express team has been delivering what's best for Biosciences community. The audience of this magazine includes students, researchers, faculties and executivesof highly prestigious organizations of India. In year 2016, BEM has made new editorial Board combining experience of eminent Advisory Board Members who have been into Award winning Research and head prestigious Administrative positions.

Managing Editor
Kamal Pratap Singh

Assistant Editor
Piyush Kumar

Chief Editor
Seema Pavgi Upadhye, MSc, PhD

Advisory Board Members

Kaul Sunil

PhD, FGSI, FBRS, FIAN, FNASc
Chief Senior Research Scientist,
National Institute of Advanced Industrial Science & Technology (AIST), Japan

Mishra Kaushala Prasad

Ph.D., F.M.A.Sc., FNASc.
Former Head, Radiation Biology Dept., BARC, India
Former Vice-Chancellor, Nehru Gram Bharati University
Founder, Radiation Biology Society, Founder President, Society for Radiation Research , India(SRRI)
Mumbai, President, Asian Association for Radiation Research (AARR)2017-2021

Pandey Ashok

D.Phil., FRSB., FNASc., FBRS., FIOBB., FISEES., FAMI.
Distinguished Scientist, CSIR-IITR
Former Dy Director & Chief Scientist, Centre for Biotechnology & Biofuel Division, CSIR- National Institute for Interdisciplinary Science and Technology
Founder, Biotech Research Society of India.

Editorial Board

S Venkata Mohan
FNAE, FBRS, FT(AP)AS, FIEI, FABAP, FISEES
Principal Scientist
Bioengineering and Environmental Sciences (BEES), CSIR-Indian Institute of Chemical Technology (CSIR-IICT)
Hyderabad, India.

Editorial Board Members

Bhattacharya Barun K
Scientist in charge, Bio-technology R&D
East India Pharmaceuticals Works Ltd.

Dubey K K
Associate Professor, Biotechnology
Central University of Haryana.

Gautam Dinesh K
Assistant Professor, Department of Zoology
Hansraj College, Delhi University.

Gupta Rajni
Associate Professor, Botany
Kirori Mal college, Delhi University.

Malik Darshan
Associate Professor, Biochemstry
Shivaji College, Delhi University.

Pant Deepak
Senior Scientist, Separation and Conversion Technology
VITO – Flemish Institute for Technological Research, Belgium

Sonkar Anand
Assistant Professor, Department of Botany
Hansraj College, Delhi University

Editorial

Management of Acne Vulgaris with Topical Medicine: Current Perspective

By Shreya Das & Barun K Bhattacharyya
Biotechnology- R & D, East India Pharmaceutical Works Ltd
119, Biren Roy Road (West), Kolkata - 700061

Look back to your teen years when you were staring at the huge zit on your face in front of the mirror. Thoughts were spinning in your head. How did it get there? How do I get rid of it before anyone sees it? It was reported that approximately 80%-90% of teenage are affected with acne[1]. Although it is a curse of teenage, it may be present at any age. The problem is of 3%-6% of adult men and 5%-12%adult women[2]. The disease is more occurring in females than males. In 2013, it was reported that acne is the 8th most common disease worldwide affecting 660 million people[3]. Although acne vulgaris is not associated with mortality, it has physical and psychological impact on the patient.

In recent years, due to better understanding of pathogenesis of acne, new therapeutic techniques and various permutation & combination of drugs have been designed, formulated and marketed. The key players in the anti-acne product segment in the global as well as Indian market are Allergan plc., Galderma S.A, Johnason and Johnson Private Limited, GlaxoSmithKline, Ranbaxy Laboratories Limited, Bayer AG. The global topical use acne treatment market is expected to exceed more than US$3billion by 2022 at a CAGR of 3% in the given forecast period.[4]

Reason of pathogenesis

There are four main interacting factors in the pathogenesis of acne vulgaris.

1. Increased sebum production by sebaceous glands, where androgens play an important role during puberty.
2. Colonization of anaerobe *Cutibacterium acne* (formerly known as *Propionebacterium acne*)
3. Hyperkeratinization of the follicle which forms microcomedo that eventually enlarges into comedo.
4. Inflammation

Signs and symptoms

The signs and symptoms depend on the severity of the condition: (Figure 1-6)

- Whiteheads(closed comedones)
- Blackheads(open comedones)
- Papules(small red, tender bumps)
- Pustules/pimples(papules with pus at their tip)
- Nodules(laerge, solid, painful lumps beneath the surface of the skin)
- Cystic lesions(painful, pus filled lumps beneath the surface of the skin)

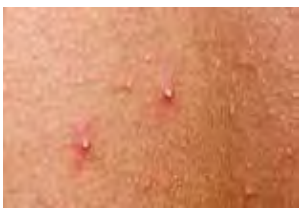


Figure 1: Whiteheads

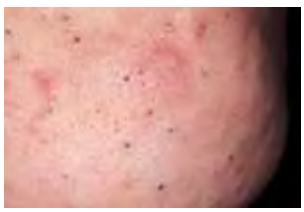


Figure 2: Blackheads

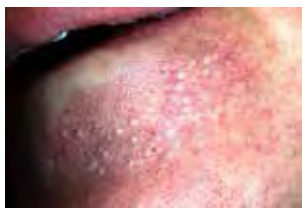


Figure 3: Papules

Figure 4: Pustules

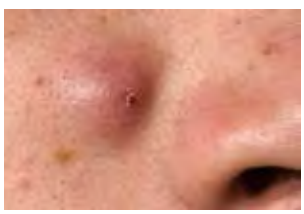


Figure 5: Nodules

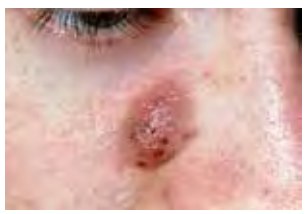


Figure 6: Cystic lesion

Types of acne

On the basis of its severity, site and diagnosis acne can be categorized. It includes:

- Mild acne: characterized by the presence of comedones with occasionally inflammatory lesions. It is mainly limited to the face.
- Moderate acne: characterized by the presence of many papules & pustules as well as mainly nodules. These involve face as well as the trunk of the body.
- Severe acne: Characterized as presence of persistent or recurrent inflammatory nodules. These nodules (the painful bumps lying under the skin) may also lead to scarring. The nodules are present on face and trunk. Cysts may also occur. This type is also termed as nodulocystic acne.

Treatment

The treatment of acne vulgaris is to reduce discomfort due to lesion, to improve appearance and to prevent scars modern medical modalities recommends a combination of topical retinoid and antimicrobial therapies as first line therapy for most of the patient with acne. The topical treatment is useful for mild to moderate acne. In case of moderate to severe inflammatory acne oral antibiotics like tetracycline are used. Women with moderate acne who do not respond to oral antibiotics may be prescribed anti-androgen hormones or oral contraceptive pills. Different physical treatment (lesion removal, phototherapy) may be used for acne treatment. Depending on clinical presentation and individual patient requirement careful selection of treatment is necessary for successful management of acne. Here we have reviewed the topical treatment options available with us in the present market.

A. Topical retinoids

Retinoids, derivatives of vitamin A has been used to treat acne for three decades. Topical retinoids are used as monotherapy for non-inflammatory acne. Retinoid function to resolve the primary acne lesion, as well as inhibit the formation of new comedones by normalizing or even increasing desquamation process. It unclogs pores allowing other medicated cream and gel to work better. So retinoid treatment should be applied for nearly every patient with acne and extended for acne clearance in maintenance phase to inhibit further microcomedone formation. The major adverse effect with topical retinoid is primary irritant dermatitis. It depends on skin type, sensitivity, and formulation.

The most commonly used topical retinoids are adapalene and tretinoin(Table-1). The local irritation of retinoid can be minimized by the use of these third generation topical retinoids. Tretinoin is recently available in new delivery system to decrease the irritative effects. In these delivery system, tretinoin is trapped within porous copolymer microspheres. These type of formulations release tretinoin slowly within the follicle and onto the skin surface to reduce irritation[5]. Adapalene is the best tolerated topical retinoid[6]. It is lipophilic and chemically stable to light and oxygen. So it can penetrate higher concentration in pilosebaceous unit. It modulates

cellular keratinization and inflammatory process. It adjusts the speed of skin cell turn over to create a healthier

environment of skin. The main limitation of topical retinoid is primary irritant dermatitis.

B. Benzoyl peroxide

Benzoyl peroxide is another effective topical agent for mild to moderate acne vulgaris since a long time. It is available in different formulations (Table-1)(washes, lotions, gels, & cream) and concentration (2.5% - 10%) [7]. Its stability depends on vehicle. Gels are more stable & active and water based gel is more preferred as it is less irritant over creams and lotions.
The drug has an anti-inflammatory, keratolytic and comedolytic activities. Benzoyl peroxide is a broad spectrum bactericidal agent because of its oxidizing activity. It also has peeling and drying properties. The main adverse effect of this drug is concentration dependent cutaneous irritation.

C. Azelaic acid
Azelaic acid 20% is a mild effective agent used to treat mild to moderate acne and beneficial for patients with sensitive skin. It is used as an adjunct agent and recommended in the treatment of post inflammatory dyspigmentation[8].

D. Dapsone
It is an antibacterial in the sulfone family of antibiotics. Dapsone gel 5% is used as monotherapy and in combination with other topical agents in mild to moderate acne vulgaris

E. Topical antibiotics

Topical antibiotics are mainly used to inhibit the growth of *Cutibacterium acne* and reduce inflammation. Commonly prescribed topical antibiotic for acne vulgaris are erythromycin 4% and clindamycin 1%. As few bacteria are resistant to erythromycin, topical clindamycin is preferred over topical erythromycin(Table-1). These topical antibiotics are both effective against mild to moderate acne. An addition of topical 2% zinc sulfate and nicotinamide has no difference than placebo for treatment of acne[9]. A most important side effect of topical antibiotic is to induce bacterial resistance and cross resistance. So, it should not be used as monotherapy.

E. Combination therapy

Antibiotic resistance is a significant threat to acne treatment. To shorten antibiotic treatment combination of topical antimicrobial and topical retinoid is more preferred. Topical retinoids are used as montherapy for non-inflammatory acne and as combination therapy with antibiotic to treat inflammatory acne.
Topical antibiotic are also available as fixed combination agents with benzoyl peroxide. Its efficacy and tolerability are increased when combined with erythromycin and clindamycin.
Benzoyl peroxide with tretinoin is found to be superior to monotherapy. But, both the molecules can not be used simultaneously as benzoyl peroxide may oxidize tretinoin.

Acne vulgaris

Acne, also known as acne vulgaris is a chronic inflammatory skin disease of pilosebaceous unit (consists of a hair follicle and sebaceous gland) especially on the face, shoulders, back, neck, chest, and upper arms.

Table:1 Drugs of acne vulgaris availabla in the Indian market

Product name	Manufacturing company	Composition
Formulation with retinoids		
a) Adapalene		
Adaferin gel	Galderma India Pvt Ltd.	0.1% w/w adapalene
Adapen gel	Intas Pharmaceuticals Ltd.	0.1% w/w adapalene
Deriva Ms gel	Glenmark Pharmaceuticals Ltd.	0.1% w/w adapalene
Alangel skin gel	Systopic Laboratories Pvt. Ltd.	0.1% w/w adapalene
b) Tretinoin		
Avita cream	Mylan Pharma	0.025% tretinoin
Formulation with Benzoyl peroxide		
Brevoxyl cream	Glaxo SmithKline Pharmaceutical	Benzoyl peroxide (4%w/w)
Linact gel	Intra life	Benzoyl peroxide (5%w/w)
Formulation with Azelaic acid		
Azelex	Allergan	Azelaic acid(20%w/w)
Aziderm	Micro Labs Ltd.	Azelaic acid(20%w/w)
Aziderm	Micro Labs Ltd.	Azelaic acid(10%w/w)
Formulaion with Dapsone		
Aczone gel	Allergan plc	Dapsone (7.5%w/w)
Acnesone gel	Systopic laboratories Pvt. Ltd.	Dapsone (5%w/w)
Formulation with antibiotic		
a) Erythromycin		
Erycane gel	Emcure Pharmaceuticals Ltd.	Erythromycin (4%w/w)
Acnesol gel	Systopic Laboratories Pvt. Ltd.	Erythromycin (4%w/w)
b) Clindamycin		
Clindac A	Galderma India Pvt Ltd.	Clindamycin (1%w/w)
Erytop	USV Ltd	Clindamycin (1%w/w)
D Acne	Glenmark Pharmaceutical Ltd.	Clindamycin (1% w/w)
Clinagel	Glaxo SmithKline Pharmaceutical	Clindamycin (1%w/w)
Formulation of fixed combination		
Acneris AD gel	Psycoremedies	Adapalene 0.1%w/w Clindamycin 1%
Acnovate gel	Apex laboratories Pvt. Ltd.	Adapalene 0.1%w/w Clindamycin 1%
Acnetor AD gel	Torrent	Adapalene 0.1%w/w Clindamycin 1%
Clindakam A gel	Alkem	Adapalene 0.1%w/w Clindamycin 1%
Deriva CMS	Glenmark pharmaceuticals ltd.	Adapalene 0.1%w/w Clindamycin 1%
Adalene Nanogel Gel	Zydus Cadila	Adapalene 0.1%w/w Clindamycin 1%
Faceclin AT Gel	Abott	Adapalene 0.1%w/w Clindamycin 1%

Acnestar Gel	Mankind Pharma Ltd	Clindamycin 1%w/w Nicotinamide 4%w/w
Faceclin Gel	Abott	Clindamycin 1%w/w Nicotinamide 4%w/w
Clindoxyl Gel	Glaxo SmithKline Pharmaceutical	Benzoyl peroxide 5%w/w Clindamycin 1%w/w

The topical use of anti-acne formulations is more popular than hormonal treatment and laser therapy. But patients having acne drugs should be aware of possible side effects and interaction s with other drugs and herbal medicines. The Global Topical Use Acne Treatment Market is segmented on the basis of type of acne, type of treatment and geographical region. There has been significant development over last few years in formulating new anti-acne topical products after clinical studies.

References

1. Dawson AL, Dellavalle RP. Acne vulguris.BMJ, 346(2016).
2. Kong YL, Tey HL. Treatment of Acne vulgaris during pregnancy and lactation. Drugs(Review), 73(8):779-87(2013).
3. Hay RJ, Johns NE, Williams HC, Bolliger IW, Dellavalle RP et al. The Global Burden of Skin Diseasein 2010: An Analysis of the Prevalence and Impact of Skin Conditions. The J Invest Dermatol, 134(6), 1527-34(2013).
4. http://www.marketresearchengine.com
5. Wolfe JE. An update of recent clinical trials examining adapalene and acne. J Eur Acad Venerol, 15:23-9(2001).
6. Percy SH. Safety and efficacy of adapalene gel 0.1% in acne vulgari: Results of post-marketing surveillance study. Indian J Dermatol Venerol Leprol. 69:277-80(2003)
7. Radhi SK. Acne vulgaris treatment: the current scenario. Indian J Dermatol. 51(1):7-13(2011).
8. Zaenglein AL, Pathy AL, Schlosser BJ, et al. guidelines of care for the management of acne vulgaris. J Am Acad Dermatol. 74(5): 945-973(2016).
9. Cochrane RJ, Tucker SB, Flannigan SA. Topical zinc therapy of acne vulgaris. Int J Dermatol.24:188-90(1985).

Guest Article

Role of Biotechnology in Tuberculosis control in India – A Revolution in diagnostics sector

The disease TB kills more than 1,400 Indians every day. Some group of Intellectuals says TB is a disease of poor, which is partly true somewhere. WHO estimates that one third of the world's population is infected with the bacilli that can potentially causes TB, but the transition from infection to disease is the result of the battle occurred between the body and the infectious bacilli. An infected person with weak immunity can easily develop the disease. TB can occur in any part of the body but the most common and dangerous is the Pulmonary TB. Dangerous because the transmission can normally happened by coughing or sneezing.

The disease causing bacilli *Mycobacterium tuberculosis* is a slow growing organism with generation time of 15-20 hours and containing an outer covering of mycolic acid. Both the feature supports the pathogenicity of this micro organism. A long treatment is required to kill all the bacilli present in the body. DOTS (Directly Observed treatment, short course) was implemented in India, which provide the combination therapy to the confirmed TB patients over duration of 6-8 months with the first line anti TB drugs (Rifampicin, Isoniazid, Pyrazinamide and Ethambutol).

Revised National TB Control Programme (RNTCP) has been fully established in India till 2006 and quality assured diagnosis and treatment has been implemented. The emergence of drug resistance in TB was

About Author

Pratik Kumar
Microbiologist ,
TB Culture & DST
Laboratory, JLNMCH,
Bhagalpur, Bihar

the biggest threat to the RNTCP. The incidence and rapid expansion of drug resistance in TB is the result of some relapse acquired resistance cases and most of the cases which arises due to incorrect or incomplete treatment.

Diagnostics of TB was mainly done by smear microscopy using Ziehl Neelsen staining, which is a less sensitive technique required 5000-10000 bacilli per ml for detection. Other technique like culture takes months for result. These techniques make the diagnosis late and less accurate which negatively influences the RNTCP. Using the molecular techniques a new branch of diagnostics has been emerged called “Molecular Diagnostics”.

Molecular diagnostics mainly detects the genetic material. The organisms specific DNA / RNA sequence will be detected which reflects the presence of that particular organism. The two drawbacks of conventional TB diagnostics (delay in diagnosis by culture and less sensitive technique like ZN microscopy) have been fulfilled and a revolutionary change has been driven with the introduction of DNA based diagnostics for TB. It is highly accurate and highly sensitive technique and also a rapid to do test. By using this biotechnological approach for diagnostics of TB, we can diagnose the cases earlier and treatment can be initiated accordingly.

The Programmatic Management of Drug Resistant Tuberculosis (PMDT) has been completely implemented in India till 2012. In this, all the failures, relapse or loss, to follow up cases were further evaluated for detection of drug resistance. The actual relevance of using molecular techniques comes here for detection of MDR (Multi drug resistant) TB which shortens time to detection from 84 days to 2 hours. Cartridge Based Nucleic Acid Amplification test (CBNAAT) is an automated Real time PCR based equipment manufactured by Cepheid, is a highly sensitive technique which proves to detect less than 130 bacilli per ml and also gives the drug susceptibility result with rifampicin. The most important thing is that the machine can give result within 2 hours. So, by using this technique we are able to overcome both the diagnostics drawbacks and rapid detection of cases and prompt initiation of treatment becomes possible. Other molecular techniques are also in the market for TB diagnostics like Truenat, Isothermal amplification tests etc for rapid and accurate detection of disease.

Figure showing CBNAAT Machine (Xpert MTB/Rif)

Utilization of CBNAAT under RNTCP has been fully expanded in 2016 with one CBNAAT machine is given in every district depending on the population, the number of machine also varies. This reflects a huge increase in case detection especially for smear negative chest X ray suggestives. Key population like Patient living with HIV (PLHIV), Extra pulmonary cases, Pediatrics cases where TB diagnosis with conventional technique were difficult to get because of the low bacilli load in the samples. CBNAAT also promotes TB detection in these key populations. As per the recent initiative by government of India, all the confirmed HIV cases should be evaluated for TB diagnosis by CBNAAT. The principle of CBNAAT is basically a real time PCR based. It is a fully automated machine where the sample is liquefied by adding buffer solution given with the kit and liquefied samples added in the cartridge and loaded in the machine. Further processing, isolation of DNA, PCR and real time detection done inside the machine. The turnaround time for this technique is 2 hours.

Another molecular technique implemented under RNTCP is Line Probe Assay for first and second line anti-TB drugs. It is mainly PCR and reverse hybridization based technique and can detect the presence of MTBC (Mycobacterium Tuberculosis Complex) and its resistance with rifampicin and Isoniazid (for first line kit) and flouroquinolones and second line injectable anti TB drugs (for second line kit). In this technique, the DNA is extracted manually and PCR is performed. Amplicons are hybridized with probes attached to strips and finally hybridized specific probes were detected by appearance of bands. The turnaround time for this technique is 72 hours.

So, by biotechnological approach, we have such techniques available that are making the difficult thing easier. Now we have reports in our hands on time and treatment can be initiated in the earlier stage of the disease. According to some intellectuals TB is a disease of poor. In my views, poor reflects poor immunity, poor facilities and poor utilization of science. India has now working to END TB till 2025 with some great facilities and great utilization of science. The control programme is doing commendable efforts in this area. The only contribution we need from our society is the awareness about this disease and to follow a healthy life style which makes the immune system so strong that the body itself can fight. Healthy India can only make TB free India.

Biotech Express

Submit Articles

WRITE FOR BEM

General Topics

Field of Biological Sciences - Its spread, boundaries and correlation with other sciences. Specializations and updates of Individual subjects. Sc-fi thinking, Biographies of famous Scientists, History and advancement of BioScience.
Trending topics - Science and its unseen benefits to society Science, Plagiarism, Pitfalls in research papers. Open access or not.
Book Reviews (column) Any book relevant to field – its existence, reporting and review.

Topics For students

Choosing science as career, Top rules for choosing institution, How to adapt to college academics, Character Education – Science ethics, Beating the examination stress. Driving habits, experience with colleagues, Challenges and power to overcome, Life lessons, Grading system, Mobile Phones and students, Probable secrets of success in science career, GRE TOEFL preparation, How successful students manage their time, How to get academic help in college, Many benefits of campus life, Online degrees and classes.

Topics For Researchers

Education Policies, Accomplishments and projections of Ministries, Departments and Organizations, Rules and regulations Amendments/Updates, Research status in India with global comparison, Scope of excellence in Research and Education

Topics For Industries

Big News- Product Launch, Merger & Acquisition, Annual Budget info etc. Advertorials- Articles for company/ professionals

Submit News Article @

Online: http://kashbiotech.com/biotech-express-magazine/submit-article/
Email: biotechexpressindia@gmail.com

Guest Article

USE OF TECHNOLOGY CAN MINIMIZE THE NEED FOR AGRICULTURE LOAN WAIVERS, MAKING THEM REDUNDANT EVENTUALLY

By Mr. Sonu Agrawal, MD, Weather Risk Management Services Pvt. Ltd

Large scale farmer agitations across the country have made it imperative to look into the mounting agriculture debt in the country. Farmer suicides in India account for 11.2% of all suicides today. About 40% of the farmers are dependent on farming for their livelihoods. The reasons for their distress can be attributed to many reasons. A major one being the high dependence of Indian farmers on monsoon. Lack of it or an excess has been instrumental causing damages in most of India's agriculture terrain since decades. This followed by diseases, pests etc. have also been why crops get destroyed.

Have loan waivers worked? Or is it really a long-term solution to agriculture debt crisis in India? The scale and extent of distress is massive and requires dramatic intervention. Past 3 decades of analysis into farm loan waivers, we can conclude they have only been a temporary relief to the farmers. By the decade the agriculture debt crisis of India has seen a rise, with deteriorating conditions of the farmers. Besides, being a huge cause of distress for India's financial sector. It has impacted the credit system due to an enormous amount of money stuck as defaults and has put all banks who are lending to farmers, be it government or private, under stress. We seem to be in a trap of rising debt followed by loan waivers and then again the cycle repeats. As per a Bank of America-Merrill Lynch in a report, India could see a massive surge in farm loan waivers by general elections next year. These could be to the tune of INR 2.7 lakh crore ($40 billion).

While this seems demoralizing, even today as a nation we are still dealing with outstanding agriculture loans of about INR 12.3 lakh crores as of September 2016. A Reserve Bank of India data NPAs rose over 23 percent in 2017 to INR 60,200 crore in the agriculture sector. This is 142.74 percent increase from fiscal 2012.

Over INR 89,000 crore worth of farm loan waivers covering about 14-15 million farmers was announced in 2017. This also happens to be a year with maximum loan defaults as per RBI. In the past 3 decades, since 1990, India has announced farm loan waivers of more than INR 2.1 lakh crores. Most of it has come after massive agitations and protests by farmers right before the general elections.

1990	INR 10,000 crore. INR 52,000 crore	Nation Wide	Right before 1991 General Elections
2008	Agricultural Debt Waiver and Debt Relief Scheme (ADWDRS)	Nation Wide	Right before 2009 General Elections
2014	INR 40,000 crore	Andhra Pradesh	Right after 2014 Elections
2014	INR 20,000 Crore	Telangana	Right after 2014 Elections
2017	INR 36,000 crore	Uttar Pradesh	Upcoming 2019 Elections
2017	INR 35,000 crore	Maharashtra	Upcoming 2019 Elections
2017	INR 8,165 crore	Karnataka	Upcoming 2019 Elections
2017	INR 10,000 crore	Punjab	Upcoming 2019 Elections

India's agriculture sector is faced with a lot of uncertainty due to heavy dependence on weather. This forms the major reason for this magnitude of agriculture debt crisis. Those engaged in Agriculture need to cover their risks and be secure of weather calamities which destroy a season's worth of money and effort have gone into it.

Crop insurance can be instrumental in addressing this massive farmer distress while also reducing the need for loan waivers. Pradhanmantri Fasal Bima Yojna (PMFBY) is making headways into protecting farmers from these loses.

However, implementation of PMFBY is critical for its success. The loss estimations and disbursements need to be timely and fair. The scheme currently is implemented at the lowest administrative unit with at most 4 crop cutting experiments (CCE's) at the village/ Panchayat levels. This existing methodology of loss estimations is unable to capture the accurate on ground situations.

The use of technology is important for a more accurate claim assessment and dispute resolution. Use of remote sensing technologies and drones can be instrumental in estimating crop loss or yields. But its success only depends on a widespread adaptation across states. Not only will this help in bringing about transparency in the whole implementation process, these loss estimations can be done much faster with real-time information becoming handy using this technology.

Integrating and digitizing cadastral maps and farm level information can help build a robust mechanism to address distress by making loss estimations and loan disbursements much faster.

Press Release

Need to Standardize Homeopathy Medicine & Practices

New innovations in homeopathy if adopted can usher several positive changes in the way patients receive medicines

Image: Michele Boiron

Indian and Global homeopathy experts have stressed the need to implement safer homeopathic dispensing practices to standardize and popularize the traditional form of medicine.

At an event on 'Standardization of Homeopathy,"experts from France and India deliberated on the need to prescribemodern homeopathic medicines to patients that offer more quality, safety and hygiene than conventional drugs. The new pre medicated medicines or Boiron Tubes as they are called, are high quality medicines packaged in a unique sealed tube and are considered gold standard in homeopathy. The tubes have ingredient labelling, indications, batch number, intelligent design, expiry dates and MRP listed on them giving patients more choice and convenience. Moreover, they are manufactured in high tech plants, untouched by hand.

Experts from France, listed several advantages in dispensing new packaged translucent pellets over solid chalky pellets having superficial coating of medicines sprayed over them. These medicines are

highly effective and have long lasting effects. The new pellets ensure equal distribution of medicine uniformly, do not dissolve in excess of liquid medicine and have no alcohol on their surface making them safe for children. The tubes are made of pharmaceutical grade plastic which does not react with the medicine.

In compliance with the Good Manufacturing Practices (GMP), experts also felt that manufacturer should clarify the grade of the raw materials used, thereby improving the quality standards of homeopathic medicines manifold.

Dr. (Prof.) VK Gupta, Padma Shree Awardee, Member Governing Body of C.C.R.H, said, "There is a dire need for standardisation of medicines in homeopathy. Medicines should be made hygienically, stored properly and the method of dispensing should be accurate. The success of homeopathy is dependent on improving patient treatment outcomes which itself is dependent on quality."
The new innovations, if adopted, can come as a welcome relief to homeopathic patrons across the country. Consumers have been demanding that homeopathy doctors dispense medicines which contain labels showing the ingredients or content of the drugs. Of late, many have shifted to medicines made in factory sealed bottles and pre sealed tubes, mostly made by German and French companies such as Boiron.

Michele Boiron, Recipient of the highest French distinction, Knight of the Legion of Honour and Director, Boiron France, said, "Modernisation and standardisation for consistent quality and reproducible outcomes is important for practitioners and patients. Consumers rely on homeopathy because they are effective and safe."

Homeopathy treats the sick, not the disease and is based on the principle of 'like cures like.' It is the world's second largest system of medicine and focuses on 'individualistic' treatment. In India, homeopathy is used as one of the most preferred systems, be it for the day-to-day illnesses, or chronic ailments. Cost effectiveness of homeopathic drugs and absence of side effects is a big attraction compared to allopathic medicines.

Homeopathy, as compared to allopathy, is extremely effective as it roots out the disease from the very core instead of simply treating the symptoms. It acts by strengthening the immune system and body's natural defence mechanisms thereby helping the body fight off infection on its own.

***

Additional reference Quotes

Dr. SumitMukerji, Senior Consultant Homeopathy, National Heart Institute said, "The new smart packaging and presentation makes homeopathic practices more transparent and standardised. Homeopathy will soon be seen in the same light as allopathy. Since doctors will start giving detailed prescriptions with names and usage of medicines, patients will know exactly what they are having and trust in homeopathy will increase greatly. The concept of premedicated globules is making homeopathic medicines extremely reliable and effective. They have been there in the global market for long and now with the advent in the Indian market, patients can be sure of very high quality drugs that offer quick results."

Startup Report

Shreeji Biotech : Approaching Multidimensionally from the starting

Shreeji Biotech company has been chosen for startup coverage in this issue because big development were seen in short span which Shreeji Biotech made. Following multidimensional approach Shreeji Biotech has carefully chose sectors which are diverse in sectors but are essential for every Bio or Life Sciences company. The company was started as Agriculture service provider, but today it has jumped into Pharma and biotechnology. It has array of services in its working, ranges from training, contract research and contract manufacturing. It has provided field training to thousand of farmers and agri associated person, Lab training to Biosciences students, researchers and faculties.

The company has come up with new website which is still under development, said Pradeep Sharma, Director, Shreeji Biotech. We will soon update all our gamut of services we provide under a single umbrella, he added.

ShreejiBiotech is dealing in the following different projects.

► Industrial Association for training Placement programme.

► Agribusiness man & Agriculture professional business strategy development programme

► Domestic industry development strategy

► Small scale industry development strategy.

► Laboratory setup.

► Contract research services.

► Method development & validation.

► Agribusiness strategy development programme for Students.

Some of the broad spectrum services provided by Shreeji Biotech

► Identification and authentication of herbal drugs by DNA bar-coding method

► Genetic diversity evaluate by RAPD, RFLP and other techniques.

► Identification of microorganism by Genotypic method Morphological identification of bacterial and fungal species

► Identification of microorganism by phenotypic method

► Analysis of Water by micro biological method Pharmaceutical analysis of drugs by Microbiological method, Instrumentation and Phytopharmaceutical method.

► Identification of chemical drug and herbal drugs by HPTLC, HPLC, GC-MS and NMR.

Shreeji Biotech Owner Pradeep Sharma, Image Source: https://www.youtube.com/watch?v=QWsy-TrpIhzw&feature=youtu.be

NEWS in Focus: Govt & Industry

Coming Soon: New generation of plant-based 'green crackers' for less-polluting Diwali

After developing a range of 'green crackers' by simply changing their chemical balance, Indian scientists have inched closer towards making another range of fireworks which would be based on plant-based products and alternative chemicals to further bring down post-Diwali pollution. The breakthrough started at the National Botanical Research Institute (NBRI) in Lucknow, a centrally-run science laboratory under the Council of Scientific and Industrial Research.

"We have already developed three plant-based products with which we can make fireworks and crackers. They would be equally colourful as the traditional fireworks. When tested in the laboratory, these plant-based fireworks have proved to be 50-60% less polluting than traditional fireworks," NBRI director SK Barik said.

None of these 'green crackers' would, however, be available this Diwali as manufacturers are yet to get the mandatory license from the Petroleum and Explosives Safety Organisation (PESO).

"Green crackers are basically reduced emission crackers wherein we reduce some harmful components, like Barium, Aluminum and Chromium which are conventionally used to get different colours. So, the strategy is to reduce or replace these components with less toxic chemicals which can bring down emissions to significant levels," said Director Dr Rakesh Kumar, CSIR-National Environmental Engineering Research Institute (CSIR-NEERI).

Current research underway focuses on developing firecrackers which show 30-35% reduction in emission of particulate matter (PM10 and PM2.5) and 35-40% reduction in SO2 and NOx (Ox-

ides of Sulphur and Nitrogen) and whose sound levels are within the permitted limits (less than 120 decibels). However, scientists highlight that the long-term strategy would be to further reduce these levels.

The Hindustan Times had earlier reported that some of the country's premier science laboratories, under the CSIR, are ready with functional prototypes of a range of crackers and fireworks that promise up to 40% reduction in emission.

"While scientists from Tamil Nadu-based Central Electro Chemical Research Institute (CECRI) have developed 'flower pots' that can bring down levels of particulate matter by around 40%, another team from Nagpur-based National Environmental Engineering Research Institute (NEERI) has developed sound-emitting crackers such as 'bijli' that emits 30-35% less particulate matter and almost-zero sulphur dioxde," said Rakesh Kumar director of NEERI.

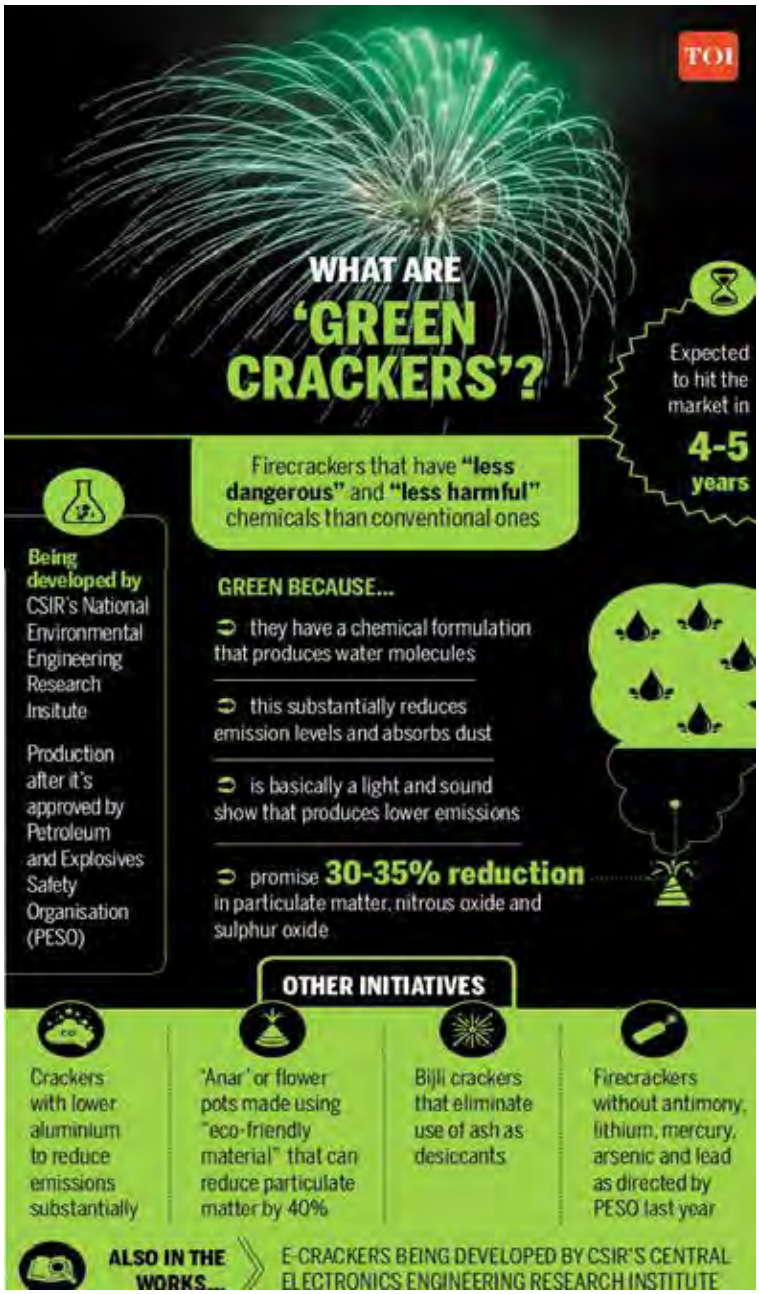
Union environment minister Harsh Vardhan said on Monday that Indian scientists have been working to create an entire range of fireworks over the past year to bring down pollution during Diwali without disrupting the Rs 6,000-crore industry that supports around five lakh families.

"While some labs like NEERI and CECRI were working on short-term goals, others like the National Chemical Laboratory and the Indian Institute of Chemical Technology were working on long-term goals in which new range of crackers and fireworks based on alternative plant-based products and alternative chemicals such as benzoate," he added.

Among the most harmful chemicals, scientists are focusing on Aluminium, Barium and Chromium and trying to replace them with less toxic components. Aluminium is used as fuel in fireworks to give white brilliant sparkle. Aluminium may cause skin problems. The use of Barium salt which is used to give only attractive green colour, but emits poisonous gas causing respiratory problem has been banned by the Court.

He said that for the first time in India an emission testing facility has been established at CSIR-NEERI and testing is in progress for both conventional and green crackers for monitoring emissions and sound.

Source: https://www.hindustantimes.com



CSIR committed to make common man's life easy: Dr Shekhar C Mande, DG CSIR

"I will personally visit all scientific and research institutions working under the umbrella of Council of Scientific and Industrial Research (CSIR) to take review of all research projects, technologies and innovations. I will see to it that all these projects, technologies and innovations are put to use for the benefit of society," said Dr Shekhar C Mande, the new Director General of CSIR and the Secretary of the Department of Scientific and Industrial Research (DSIR). Dr Mande was in his maiden visit to city after taking charge as Director General of CSIR. Entire scientific community of the city expressed its happiness and joy when Dr Mande, a Nagpurian, became DG of a prestigious organisation of the country.

Interacting with select group of media persons at the premises of CSIR NEERI, Dr Mande elaborated on the mission and vision of CSIR. He said, "CSIR will continue its contributions to the growth and development of nation. CSIR connects academia, researchers and scientists. All organisations working under the umbrella of CSIR are translating scientific and technological research projects for the welfare of society. CSIR is successfully working for common people in country since last 75 years. The organisation has a strong base of excellent scientists who are contributing their excellence for the society."

Prior to join as DG of CSIR, Dr Mande was the Director of National Centre for Cell Science (NCCS), Pune. He succeeds Dr Girish Sahni, who retired on August 31, 2018. "Though CSIR is one of the world's largest publicly-funded research and development organisations and is known for its contributions in diverse areas of science, it has always remained an unsung hero in nation's development," Dr Mande added.

Dr Mande is world acclaimed structural and computational biologist with more than 100 publications to his credit. As director of NCCS, his laboratory was involved in research on the structural characterisation of Mycobacterium tuberculosis proteins and the computational analysis of genome-wide protein: protein interactions.

Dr Mande shared his achievements as "I had completed MSc in Physics from Nagpur University in 1984. After

that I went to Indian Institute of Science, Bengaluru to pursue doctoral degree. I got PhD in Molecular Biophysics in 1991 under the supervision of Prof M Vijayan. I went to postdoctoral research at Rijksuniversiteit Groningen, in the Netherlands in 1991 and joined as a senior fellow at the University of Washington, Seattle, USA in 1992.

After returning to India, I joined the Institute of Microbial Technology, Chandigarh, as a scientist and continued till 2001. I was selected as a Staff Scientist at the Centre for DNA Fingerprinting and Diagnostics, Hyderabad. In 2011, I was appointed as the Director of NCCS, Pune, an autonomous Institute of the Department of Biotechnology, Government of India. I also served in various advisory committees for the Government of India."

Dr Mande discussed several initiatives undertaken by CSIR to translate laboratory leads to marketable/ value-added technologies/ products and thereby enhance interactions and connect to stakeholders for enabling ease of doing technology licensing.

"Theme directorates have been formed to cover and address different sectors like Aerospace, Electronics, and Instrumentation and Strategic Sectors; Civil Infrastructure and Engineering; Ecology, Environment, Earth & Ocean Sciences and Water; Mining, Minerals, Metals and Materials; Chemicals (including leather) and Petrochemicals; Energy (conventional and non-conventional) and Energy devices; Agri, Nutrition and Biotech; and Healthcare."

Source: http://thehitavada.com

New evidence released on the trends of Non-Communicable diseases and Suicide for every state of India

The India State-level Disease Burden Initiative, a joint initiative of the Indian Council of Medical Research (ICMR), Public Health Foundation of India (PHFI), and Institute for Health Metrics and Evaluation (IHME) in collaboration with the Ministry of Health and Family Welfare, Government of India, along with experts and stakeholders associated with over 100 Indian institutions, has released today comprehensive analysis of several major non-communicable diseases (NCDs) and suicide for every state in India, based on analysis of all identifiable epidemiological data from India since 1990 as part of the Global Burden of Disease study. These findings are reported in a series of five research papers published in The Lancet Global Health, The Lancet Public Health, and The Lancet Oncology, along with a commentary in The Lancet.

Highlighting some crucial policy-relevant points in these papers, Professor Balram Bhargava, Secretary to the Government of India, Department of Health Research, Ministry of Health & Family Welfare, and Director General, ICMR, said, "These papers through detailed analysis have elucidated disease and risk factor trends of major NCDs and suicide in every state over 26 years.

Giving pre inputs on the release of this data, Professor Lalit Dandona, Director of the India State-Level Disease Burden Initiative had informed that It is important to note that the detailed analyses reported in these papers have been possible because of the valuable contributions of many hundreds of highly qualified collaborators from India over the past three years.

Findings of the studies:-

►Detailed estimates of the trends of cardiovascular diseases, diabetes, chronic respiratory diseases, cancer, and suicide in every state of India from 1990 to 2016 published in The Lancet family of journals.

►Prevalence of ischemic heart disease and stroke has increased by over 50% from 1990 to 2016 in India, with an increase observed in every state.

►The number of persons with diabetes in India has increased from 26 million in 1990 to 65 million in 2016. The rate of increase in the burden of ischemic heart disease and diabetes has been the highest in the less developed states of India, where the burden of chronic obstructive lung disease and infectious conditions is already high.

►The number of chronic obstructive lung disease cases in India has increased from 28 million to 55 million from 1990 to 2016, and death rate among these cases is twice as high in the less developed states than in the more developed states.

►The proportional contribution of cancers to the total health loss in India has doubled from 1990 to 2016, but the incidence of different types of cancers varies widely between the states.

►Suicide is presently the leading cause of death in the 15-39 year age group in India, 37% of the total global suicide deaths among women occur in India, and suicide death rate among the elderly has increased over the past quarter century.

Source: ICMR

Illumina Acquires Pacific Biosciences for $1.2 Billion

DNA sequencing giant Illumina, Inc. is about to get a little bit bigger. The company announced it will acquire gene sequencing company Pacific Biosciences for $1.2 billion.

The acquisition, which was at an $8 per share price, a 71 percent premium, is expected to bring together highly accurate short- and long-read sequencing technology. In its announcement, Illumina said the deal will pave "the path to a more perfect view of a genome." Illumina said its short-read sequencing platforms address the

majority of sequencing applications, there are some applications that are better addressed with long-reads. Illumina pointed to de novo sequencing and sequencing of highly homologous regions of genomes, as the types of applications that are better addressed with accurate long-reads. With the Pacific Bio technology, Illumina said it will be positioned to "provide integrated workflows and novel innovations that bring together the best of both technologies to help researchers advance their discoveries faster and clinicians offer new tests economically."

Francis deSouza, president and chief executive officer of Illumina, said Pacific Bio's long-read sequencing technology has an "unmatched accuracy" that mirrors Illumina's short-read sequencing.

"Combining the two technologies positions us to reach more applications, accelerate the pace of genomic discovery and bolster our innovation engine which has been a hallmark of Illumina since our inception," deSouza said in a statement. "PacBio's relentless pursuit to improve sequencing accuracy, while driving down the cost, underscores the potential of long-reads to expand sequencing to new customers and applications."

Michael Hunkapiller, CEO of Pacific Biosciences, said thousands of researchers will have direct access to the sequencing technology due to the Illumina deal. He said San Diego-based Illumina continues to "democratize" the use of sequencing at an unprecedented rate."

Pacific BioSciences developed the sequencing technology known as SMRT -- Single Molecule, Real-Time (SMRT). The company said its technology offers the most comprehensive view of genomes, transcriptomes, and epigenomes—including the full spectrum of genetic variation—by providing the longest average read lengths, highest consensus accuracy, and most uniform coverage of any sequencing technology on the market today."

Illumina and Pacific Biosciences have shared values and a commitment to innovation. Our complementary sequencing technology, once integrated, will offer customers a new standard of insight and understanding, opening new frontiers of genomic utility," Hunkapiller said.

Days after Novartis axed one-fifth of its research programs, the Swiss pharma giant said it intends to seek regulatory approval for 60 new treatments between 2019 and 2021.

Source:: Linkedin

Novartis announced to file 60 Regulatory Filings Over the period of Next Three Years

Novartis made the announcement today during a research and development update in London. The company said the conference provides investors with a deeper insight into its pipeline and the potential therapeutics that could be on the market over the next few years. In its announcement this morning, Novartis said the company has 26 potential blockbusters in confirmatory development and 13 projects in clinical development across Cell, Gene & Radioligand therapies.

With a bold prediction of a potential 26 blockbuster drugs, Novartis' secondary multiple sclerosis treatment Mayzent is expected to lead the way. Mayzent (siponimod) is currently under review by the U.S. Food and Drug Administration (FDA), as well as the European Medicines Agency (EMA). In April, Novartis released additional data from its Phase III EXPAND trial that showed siponimod-dosed patients gained a significant benefit in cognitive processing speed. That data came about one month after Novartis published data that showed multiple sclerosis drug siponimod generated significant improvements in patients, including a 21 percent decrease in the risk of disease progression. If approved, Novartis said it anticipates the launch of Mayzent in the first quarter of 2019. Mayzent would bolster its MS pipeline that is expected to see some losses due to generic competition for its blockbuster drug Gilenya.

In addition to Mayzent, Novartis pointed to several other drugs that have the potential to be blockbusters. Novartis' ofatumumab is a next-generation B-cell depletor with a potentially favorable safety profile from faster b-cell repletion and preserved immunity, and with a convenient monthly sub-cutaneous dosing. It is also being studied as a potential therapy for multiple sclerosis. If approved, it could be seen as a rival for Roche's Ocrevus. Ofatumumab has already been approved as a treatment for chronic lymphocytic leukemia under the brand

name Arzerra.

Novartis also highlighted a few other drugs that have the potential to be blockbusters, including moderate-to-severe asthma treatment fevipiprant; nAMD treatment brolucizumab, which Novartis said has the potential to reduce treatment burden by drying the retina better with fewer injections; and in sickle cell disease, the therapeutic crizanlizumab has shown itself to be effective in clinical trials and the company anticipates regulatory filing in 2019.

During the Monday showcase, Novartis pointed to the potential launch of its therapy for spinal muscular atrophy type I, AVXS101. The company said it was on track for a launch in the first half of 2019 and clinical development is ongoing for all other SMA subtypes. Novartis gained AVXS101 through its $8.7 billion acquisition of AveXis earlier this year. Novartis said it anticipates regulatory approvals for AAVXS101 early next year in the United States, Europe and Japan.

Novartis also pointed to some other highlights in its Radioligand therapy. Last year, Novartis acquired Advanced Accelerator Applications for $3.9 billion and successfully launched Lutathera in neuroendocrine tumors (NET) and has projects in development for indications beyond NET. In October Novartis announced the acquisition of Endocyte for $2.1 billion to expand its radiopharmaceuticals business.

Novartis also announced that it is pursuing new indications for some of its established brand medications such as Cosentyx, Entresto and Gilenya. The company said Cosentyx is expected to be Novartis' largest drug next year, with robust growth in all three approved indications.

Source: BioSpace

Roche Snags FDA Approval for First New Flu Drug in 20 Years

For the first time in nearly 20 years, the U.S. Food and Drug Administration (FDA) has approved a new treatment for the flu. The regulatory agency green lit Roche's Xofluza, a single-dose oral medication, just ahead of the 2018-19 flu season.

Xofluza (baloxavir marboxil) was approved for the treatment of acute, uncomplicated influenza, or flu, in people 12 years of age and older. The new medication has a novel mechanism of action that, Roche said, inhibits polymerase acidic endonuclease, an enzyme that is essential for the flu virus to replicate.

Sandra Horning, Roche's chief medical officer and head of global product development, touted the approval of the first new flu medication in two decades and added that the company was excited to offer a "convenient treatment option" that reduces flu symptoms by more than a single day with a single dose.

"If patients see their doctors within 48 hours of symptom onset, one dose of Xofluza can significantly reduce the duration of flu symptoms," Horning said in a statement.

Xofluza snagged regulatory approval based on the CAPSTONE-1 study Xofluza demonstrated a clinically significant benefit over placebo in otherwise healthy people with influenza. Baloxavir marboxil reduced the time that the virus continued to be released, called viral shedding, and also reduced viral levels in the body. In non-clinical studies, Xofluza demonstrated efficacy against a number of flu viruses, including oseltamivir-resistant strains and avian strains (H7N9, H5N1), Roche said. The FDA approved the drug under Priority Review.

The flu represents a serious health threat each year. Globally, there are about 650,000 deaths from the flu worldwide and millions of people are hospitalized due to the illness. According to the U.S. Centers for Disease Control and Prevention, those people who are considered at high risk of serious flu complications include people over the age of 65, as well as people who have pre-existing conditions such as asthma, diabetes, heart disease or chronic lung disease. Xofluza is expected to be available within a few weeks.

FDA Commissioner Scott Gottlieb said Xofluza provides an important treatment option for flu patients. However, even with the new flu drug approved, he said it was important for people to get a flu shot annually.

"While there are several FDA-approved antiviral drugs to treat flu, they're not a substitute for yearly vaccination. Flu season is already well underway, and the U.S. Centers for Disease Control and Prevention recommends getting vaccinated by the end of October, as seasonal flu vaccine is one of the most effective and safest ways to protect yourself, your family and your community from the flu and serious flu-related complications, which can result in hospitalizations. Yearly vaccination is the primary means of preventing and controlling flu outbreaks," Gottlieb said in a statement.

Earlier this month, Roche's subsidiary Genentech released data from the Phase III CAPSTONE-2 trial that showed Xofluza significantly reduced the time to improvement of influenza symptoms versus placebo in patients who are at high risk of serious complications from the flu. The study showed that people who took Xofluza saw a reduction in time for symptom improvement in influenza type A/H3N2 and type B by 75.4 hours and 74.6 hours, respectively. In the CAPSTONE-2 study, Xofluza fared slightly better than Genentech's other flu drug, Tamiflu.

Source: BioSpace

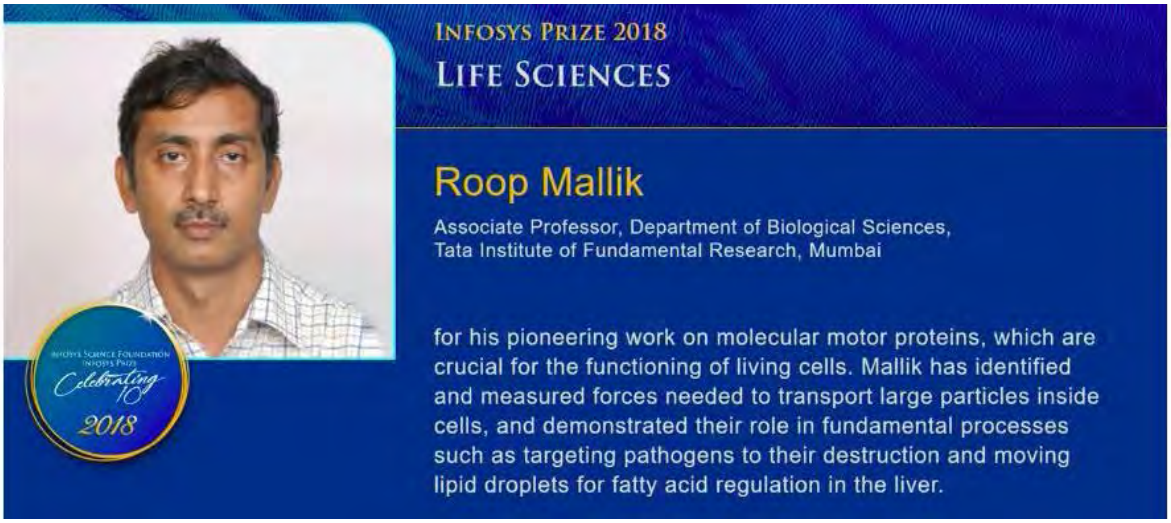
Six professors win Infosys Prize 2018 for science and research

Six eminent professors have been awarded the Infosys Prize 2018 across different categories of science and research, the software major's science foundation announced on Tuesday.

The annual award includes a pure gold medal, a citation and a prize purse worth $100,000 (or its equivalent in Indian rupees), the Infosys Science Foundation (ISF) said in a statement.

"India needs to cement its place as a hub for innovations across various fields of science," said Narayana Murthy, Trustee ISF and Founder, Infosys.

"The Infosys Prize seeks to honour the efforts of some of the brightest scientists and researchers and highlight



the country's ongoing quest for science excellence," Mr. Murthy said.

A six-member jury of renowned scientists and professors selected the winners from 244 nominations received in six categories, ISF said.

By recognising these researchers and celebrating their achievements, the Infosys Prize aims to inspire young minds to explore science as a career option and advance innovation in the country, the foundation said.

"With improving synergies between the scientific community and industry we are poised for cutting-edge science and research innovation. The science of today is, after all, the technology of tomorrow," said K. Dinesh, President of ISF.

The prize for Life Sciences was awarded to Roop Mallik, Associate Professor, Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai for his work on molecular motor proteins, which are crucial for the functioning of living cells.

Mr. Mallik has identified and measured forces needed to transport large particles inside cells, and demonstrated their role in fundamental processes such as targeting pathogens for their destruction and moving lipid droplets for fatty acid regulation in the liver.

The DBT/Wellcome Trust India Alliance Celebrates 10 Years of Enabling Biomedical Research in India

The Department of Biotechnology and Wellcome Trust marked the 10 years of their joint partnership in an event at Vigyan Bhavan on November 12, 2018. Shri Ram Nath Kovind, President of India was the Chief Guest at the event. Dr. Harsh Vardhan, Hon'ble Minister of Science & Technology, Earth Sciences and Minister of Environment, Forest and Climate Change, Government of India, also graced the occasion. Others present were

Prof. K. VijayRaghavan, Principal Scientific Adviser to the Govt. Of India, Dr Jeremy Farrar, Director, Wellcome Trust and Dr Renu Swarup, Secretary, Department of Biotechnology.

Dr. Harsh Vardhan congratulated the partnership and emphasized the need for the added incentive for biomedical research and creating opportunities that encouraged more clinicians to carry out research.

He was happy to note that the DBT Wellcome Trust partnership was addressing this issue in a major way. More than 1000 top researchers and scientists from across India attended the function.

The Department of Biotechnology (DBT) under the Ministry of Science and Technology, GoI has been partnering with the Wellcome Trust (WT) to support a three-tier fellowship programme on biomedical research at post-doctoral level. The joint commitment of DBT and WT has been up to UK £16 million each year (£8 million each), amounting to a total of UK £160 million / INR 1296 crore over a 10-year period. The scheme was announced in 2008.

The Wellcome Trust is an independent charity funding research to improve human and animal health. Established in 1936 and with an endowment of around £15 billion, it is the largest non-governmental source of funds for biomedical research in the United Kingdom.

The programme is being delivered by a Special Purpose Vehicle (SPV), a public trust registered as the DBT/ Wellcome Trust India Alliance. The Trust receives equal contribution from both DBT and WT for the running the fellowship grant scheme.

Fellowships are available across the full spectrum of biomedical research (human and veterinary) – from fundamental molecular and cellular studies through to clinical and public health research. Research projects can be based in the laboratory, the clinic or the field and may involve experimental, theoretical approaches as well as translational approaches. The collaboration is:

First DBT collaboration with a non-governmental philanthropic organisation outside of India
First international co-funded fellowship grants for scientists working in India
First fellowship open to people of any nationality to work in India
First institutionalised re-entry post-doctoral fellowships in biomedical research grants in India
Over the period of 10 years 320 fellowships have been granted to research fellows from ac•ross t
he world to work in India.

320 recommended awards at 93 institutions across 34 Indian cities
32.2% awardees are from overseas, 67.8% from India: Facilitating "Brain Gain".
~20% of awards are made to universities.
4 awardees from non-Indian nationality – Canada, Germany, Ghana, USA.
More than 550 publications by March 2018.
33% of India Alliance Fellows are women. India Alliance provides an option to its Fellows to seek a one-year full cost extension of fellowship following a maternity break.
24% of the awards made to new (<10 years old) institutions.
More than 900 PhDs, postdoctoral scientists, undergraduates and research technicians trained in the laboratories of India Alliance Fellows.
~2500 researchers trained in Science Communication workshops.

BIOTECH EVENTS

BIO-INNOVATION FOR ENVIRONMENTAL AND HEALTH SUSTAINABLE DEVELOPMENTS

BEHSD 2018

November 27-28
CSIR-IITR
Lucknow, India

"Bio-Innovation for Environmental and Health Sustainable Developments" (BEHSD-2018) conference is focused on covering the advancement of research and innovations in biotechnology particularly in the domain of Health, Environment, Food, Water and other associated fields are highly pertinent to realize sustainable development goals. This conference aimed to address the current challenges in creating a sustainable and affordable ecosystem in the framework of cutting edge R&D interventions. The conference would be beneficial in fostering budding researchers and young minds towards sustainable development.

CSIR-IITR is holding BEHSD-2018 on November 27-28, 2018 to bring scientists, young researchers, entrepreneurs, industrialists, policy makers, innovators and other global experts together to deliberate and showcase the current trends and future challenges of the underpinned health and the environment research domains.

Only Spot registration is available. Spot Registration Fee:
Faculty:
Rs.5,000
BRSI Faculty members:
Rs.4,500
General students:
Rs.4,500
BRSI student members:
Rs.4,000
Accompanying person:
Rs.3,000

Explore Biotech with BRSI

India's Biggest Biotech Annual Event with presence of most eminent scientific talent and Industry patrons

International Conference on Biotechnological Research and Innovation for Sustainable Development
&
XVth BRSI Convention
&
V Asia-Oceania Algae Innovation Summit (AOAIS)

22-25 November, 2018, CSIR-IICT

Industry-Young Researchers Interactive Session
Scientists-Children Meet
BRSI- Skill Development Program
Bio-Entrepreneurs Conclave

The conference as part of CSIR-IICT platinum jubilee celebrations provides a vibrant platform for sharing knowledge and global networking amongst the biotechnology fraternity focusing on sustainable development. BioSD 2018 will bring together scientists, young researchers, entrepreneurs, industrialists, policy makers, innovators and other global experts to deliberate and showcase the current trends and future challenges of the underpinned biotechnology research domains.

International Conference

Next Generation Sequencing *in* Clinical Genomics

Applications and Advances

29-30 November 2018 • Bengaluru, India

Translating NGS from Research to Clinical Genetic Testing

Organized by

SELECTBIO

Confirmed Speakers

Conference Chair

B R Das,
SRL Ltd

Aaron Chapla,
CMCH

Amit Dutt,
ACTREC

Anil Vasudevan,
St. Johns MCH

Bharat Thyagarajan,
Univ of MN, USA

Dhavendra Kumar,
Cardiff University, UK

K Subramanian,
Syngene

Kshitish Acharya K,
IBAB

Moutushy Mitra,
3i Molecular

Murali Bashyam,
CDFD

P Sundaresan,
Aravind Eye Hospital

Pramila Tata,
Syngene

V Veeramachaneni,
Strand Life Sciences

For queries, contact

Talks & Topics: g.sharma@selectbio.in | 7696025050
Registration: f.zainab@selectbio.in | 7696125050
Exhibition: mjsingh@selectbio.in | 7696225050
Website: www.selectbioindia.com
WhatsApp: 9041725050

Register NOW!

Celebrating 25 YEARS IN EDUCATION 1993 - 2018 Silver Jubilee

Learners Intellectual sanctuary

ARUNAI Engineering College

TIRUVANNAMALAI

4th International Conference on

"BIOENERGY, ENVIRONMENT AND SUSTAINABLE TECHNOLOGIES"

January 28-30, 2019

BEST 2019

Towards tomorrow

CALL FOR PAPERS

Themes of the Conference

Bioenergy and Renewable Energy
Environmental Biotechnology
Waste Management and Valorization
Water Research
Climate change
Policy makers and the Public
Special Sessions on General Engineering

- *Biotechnology & Chemical Engg*
- *Pharmaceutical Technology*
- *Nano Technology*
- *Solar Energy Technology*
- *Sustainable Technologies*
- *Smart cities*
- *Robotics & Artificial Intelligence*
- *Internet of Things (IoT)*

Important Dates

Abstract submission due - 25th Oct 2018
Acceptance notification - 30th Oct 2018
Registration opening - 31st Oct 2018
Full paper submission - 30th Nov 2018

Associated Journals

- ★ *Journal of Energy and Environmental Sustainability (JEES)*
- ★ *The International Journal of Environment and Sustainable Development (IJESD)*
- ★ *More SCI and SCOPUS indexed journals will be updated in the conference website.*

Sponsors & Associates

The Biotech Research Society, India

International Bioprocessing Association

International Society for Energy, Environment and Sustainability (ISEES)

Centre for Energy and Environment Sustainability (CEES)

Biotech Express Magazine

Contact details

6th AIST International Imaging Workshop

January 20-27, 2019

Biomedical Research Institute (https://unit.aist.go.jp/bmd/en/)
National Institute of Advanced Industrial Science & Technology (AIST)
1-1-1 Higashi, Tsukuba Science City 305 8566, Japan

The AIST International Imaging Workshop is a residential one-week course held at the Biomedical Research Institute, AIST offering a wide range (from the principles of light microscopy to super resolution imaging) of microscopy training to young talented researchers. Participants will be trained through hands-on practical sessions in several critical and important issues related to imaging technologies.

Who can join?

The course is suitable for both beginners and experienced users wanting to gain a greater understanding of the microscope. Students are selected through recommendation from their supervisor internationally from a range of backgrounds. Preference will be given to doctoral level students. The course will have a maximum of 20 delegates.

Language?

The course, including the course materials, will be conducted in English.

Support?

Selected candidates will be provided (1) Airfare (return) by economy class through the most direct route from the international airport in their home country to Japan, (2) Limousine fare (return) from Narita International Airport to Tsukuba Center, (3) Single room accommodation at the AIST Guest House and (4) Allowance to cover the daily meals.

Course Details

Laboratory Course 1: Basic training in Microscopy
Anatomy of the light microscope, Basic optics, Lenses, Bright field, Phase contrast, DIC, Fluorescence, Fluorochromes and Filters, Fluorescence imaging, Basic microscope maintenance

Laboratory Course 2: Basic training in Laser Scanning Microscopy
Learn the basic technique for a confocal microscopy, including spectral imaging, photo-activation, calcium imaging etc.

Laboratory Course 3: Training in the latest microscopic analysis
Learn the principle and techniques of recently-developed novel microscopic technologies, such as Super-resolution Microscopy, FCS analysis, Electron Microscopy, and so on..

Laboratory Course 4: Training in Bioluminescence Screening & Imaging
Learn the principle and techniques in high throughput screening & cell imaging based on bioluminescence technology

Program

January 20 - *Arrival, Reception & Networking*

January 21 - *Orientation; Lectures on Basic Principles of Microscopy*

January 22 - Course 1: *Basic Training in Microscopy*

January 23~25 - Course 2: *LSM*
Course 3: *Latest Microscopic Analyses*
Course 4: *Bioluminescence Screening & Imaging*

January 26 - *Tour to Microscope Companies in Tokyo & Around*

January 27 - *Departure*

Instructors: Y. Ohmiya, K. Katoh, T. Ebihara, T. Ochiishi, Y. Sasaki, K. Kiyosue, T. Tomita, Y. Shinkai, H. Inagaki, K. Ogawa and M. Doi

Organizers: Y. Ohmiya, R. Wadhwa, Y. Onishi, M. Doi and S. Kaul

Sponsors: Nikon, ATTO, Hamamatsu Photonics, Olympus and Zeiss

Deadline for application - September 15, 2018

For further information:
s-kaul@aist.go.jp

National Institute of Advanced Industrial Science and Technology
AIST

バイオメディカル研究部門
Biomedical Research Institute

DBT-AIST International Laboratory for Advanced Biomedicine
DAILAB

DBT-AIST International CENter for Translational and environmental Research
DAICENTER

ICGCW 2018

4th INDIAN CANCER GENETICS CONFERENCE & WORKSHOP

Organized by Tata Memorial Centre, ISCG & Indo-UK Genetic Education Forum at ACTREC, TMC, Navi Mumbai

**Royal College of Physicians (London) Continued Professional Development Credits (12 hrs) applied for*

The Cancer Genetics Unit at ACTREC & Tata Memorial Hospital is the apex comprehensive cancer genetic referral centre in South Asia. It has registered 7000 families with diverse hereditary cancers & performs molecular genetic analysis for 21 genes with Sanger Sequencing, MSI testing, MLPA & NGS. This is the 4th annual conference and workshop in Cancer Genetics. Cancer Genetic services are now being offered in many hospitals. Several private and academic labs have started offering genetic tests for several clinically relevant genes and are increasingly using Next Gen Sequencing. To gain insight in this fast evolving field and discuss issues that are clinically relevant, we invite you to the 4th ICGCW at ACTREC, Tata Memorial Centre.

3rd - 7th December 2018 (3 parallel workshops)

Workshop I: Cancer Genetics Counselling *(Maximum 24 participants): Principles of counselling, syndrome identification and work up, pre-test & post test counselling, family counselling, VUS counselling, management of mutation carriers with screening, chemoprevention & prophylactic surgery*

Workshop II: Molecular Genetic analysis & functional Genomics *(Maximum 24 participants): PCR and trouble shooting, Genotyping with CSGE, RFLP, TaqMan and its validation, Sanger sequencing with troubleshooting, MLPA analysis, Bioinformatic analysis and drafting reports of genetic test; Functional Genomics*

Workshop III: Next Generation Sequencing *(Maximum 12 participants): Demonstration cum hands on training in Exome/Transcriptome Library preparation, quantification & pooling of libraries for Next Gen Sequencing on HiSeq/MiSeq; Bioinformatic analysis*

Workshop IV: One day Breast MRI workshop (8th Dec 2018)

8th -10th December 2018 (Cancer Genetics Conference)

Leading experts from India, USA, UK, Europe, Australia, Singapore, Malaysia & Middle East will discuss various basic, translational and clinical aspects of Cancer Genetics and Genomics covering common & rare syndromes. Techniques, approaches and interpretation of genetic testing and issues in genetic counselling and risk management of mutation carriers will be discussed. Through workshops, posters, scientific and interactive sessions, the participants will gain knowledge and skills useful for initiating and refining laboratory and clinical cancer genetics research and service programs.

Confirmed International Faculty (in alphabetical order)

1. ***Prof. Margreet Ausems*** *Head, Oncogenetics, University Medical Centre, Utrecht, The Netherlands*
2. ***Prof. Shirley Hodgson*** *Professor Emeritus, Clinical Genetics, St George's Hospital, London, UK*
3. ***Prof. Humphrey Hodgson*** *Professor Emeritus, Dept. of Medicine & Hepatology, University College London, UK*
4. ***Prof. Dhavendra Kumar*** *Professor, Clinical Genetics & Genomic Medicine, University of South Wales and Cardiff, UK*
5. ***Dr. Kirti Kulkarni*** *Breast Radiologist, University of Chicago, Chicago, USA*
6. ***Prof Finlay Macrae*** *Head, Colorectal Medicine & Genetics, The Royal Melbourne Hospital & Manager, InSiGHT Global Variant Database*
7. ***Dr Ranjit Manchanda*** *Consultant Gynaec Oncologist, Queen Mary University of London, UK*
8. ***Prof . Fahd Al Mulla*** *Prof. of Molecular Pathology, Kuwait University Medical School, Kuwait*
9. ***Prof. Funmi Olopade***, *Professor of Medicine & Cancer Genetics, University of Chicago, USA*
10. ***Dr. Mark Rogers*** *Consultant Clinical Geneticist, University Hospital Wales, Cardiff, UK*
11. ***Dr. Abeer Al Saegh*** *Head, Genetics Department, Sultan Qaboos University, Muscat, Oman*
12. ***Dr. Chandra Settara***, *Head Cancer Genomic Unit & Genomics Core, NHGRI / NIH, Bethesda, USA*
13. ***Ms Yoon Sook-Yee*** *Genetic Counsellor, Head, Familial Research Project, Cancer Research, Malaysia*
14. ***Dr. Helen Stewart*** *Consultant Clinical Geneticist, Oxford Univ. Hospital, Oxford, UK*
15. ***Prof. Soo-Hwang Teo*** *Chief Executive, CARIF, University Malaya, Malaysia*
16. ***Prof. Meena Upadhyaya*** *OBE Professor, Clinical Genetics, University Hospital Wales, Cardiff, UK*

Focus on specific aspects of Hereditary Cancers & Genetics

When to suspect hereditary cancer; Genetic Counselling; Genetic Testing – its reporting and interpretation; Prevention, Surveillance & Management of Carriers

- **Genetic basis of Inherited cancer; Founder & Recurrent mutations
- **Genetic Testing – techniques, interpretation, reporting, pitfalls, VUS
- **Unique aspects of Clinical management of Hereditary cancers
- **Somatic mutations in cancers and Targeted therapy
- **Syndrome Identification & Genotype –Phenotype correlation
- **Genetic Counselling – Ethical, Legal & Psychosocial Issues
- **Prophylactic Surgery & Chemoprevention in Mutation carriers
- **Next Gen Sequencing & new Research avenues in cancer genetics

Who should attend the Conference?

Trainees & Professionals working / planning to work in Cancer Genetics

- *Oncologists (Medical, Surgical & Radiation)*
- *Clinical / Medical Geneticists*
- *Radiologists, Pathologists & Translational Scientist*
- *Preventive & Community Medicine*
- *Genetic Counsellors & Clinical Psychologists*
- *PhD/ MD/ MS/ DM/ MCh students*
- *Industry / Labs engaged or planning to start molecular diagnostics*

Registration Fee (Includes 18% GST)	Up to 31st Oct 2018		Up to 25th Nov 2018		Spot Registration	
	Academia	Private / Industry	Academia	Private / Industry	Academia	Private / Industry
Full Conference	*3500	7000	*4000	8000	5000	8000
One day of Conference or one day MRI workshop	*2000	4000	*2500	5000	3000	5000
Conference with Workshop I, II or IV	*7500	12000	*8500	14000	No spot registration	
Conference with Workshop III (NGS)	*20000	25000	*30000	30000		

**25% concession for PhD Students, Project JRF/SRF & Resident doctors on guide's recommendation*
Payment can be made by Bank Drafts, Debit /Credit Cards or Electronic Transfer.

For enquiries & details see **"Meetings" on ACTREC website - www.actrec.gov.in or mail us at ICGCW2018@gmail.com or call +91-22-27405000 ext 5092/5529 +91-7400391687**

Chairman RAJIV SARIN | *Organizing Secretary* PRADNYA KOWTAL | *Treasurer* POONAM GERA

Patrons: Prof. Rajendra Badwe, Prof. Shubhada Chiplunkar & Prof. Sudeep Gupta

National Workshop
on
Database development and Biocuration
on
(11 - 12th December, 2018)

Organised By:

Distributed Information Sub-Centre (DISC) Facility,
National Institute of Plant Genome Research,
Aruna Asaf Ali Marg,
New Delhi – 67

Funded By:

Department of Biotechnology
Ministry of Science & Technology,
Govt. of India, New Delhi.

Registration Fees

	Registration (INR)
Regular Delegates	4000
Students	3000

Important Dates

12th November, 2018: Deadline for receipt of Abstract.

Application Form

http://www.nipgr.res.in/facilities/workshop18.php

Organizing Committee

- Dr. Shailesh Kumar
- Dr. Jitendra Kumar Thakur

Contact

Coordinator

Bioinformatics Sub-Centre

National Institute of Plant Genome Research, Aruna Asaf Ali Marg,

New Delhi – 110067

Centre Website:

www.nipgr.res.in/facilities/facility_disc.php

Institute Website:

www.nipgr.res.in

Email: bic@nipgr.ac.in

RESEARCH NEWS

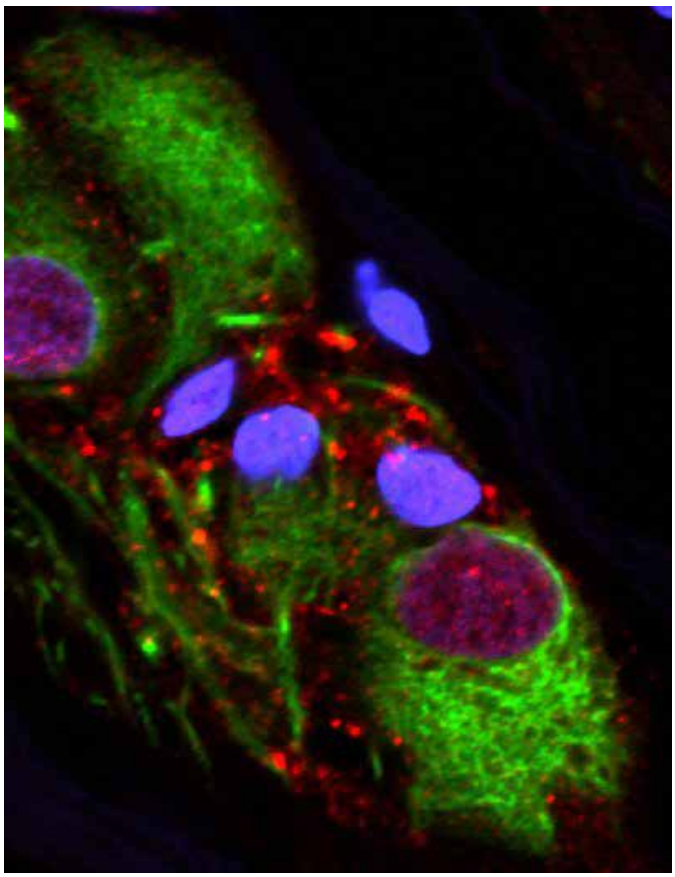
From other High Impact Journals

Appendix identified as a potential starting point for Parkinson's disease

Appendix acts as a reservoir for disease-associated proteins; appendectomy lowers the risk of developing Parkinson's. Removing the appendix early in life reduces the risk of developing Parkinson's disease by 19 to 25 percent, according to the largest and most comprehensive study of its kind, published in Science Translational Medicine.

"Our results point to the appendix as a site of origin for Parkinson's and provide a path forward for devising new treatment strategies that leverage the gastrointestinal tract's role in the development of the disease," said Viviane Labrie, Ph.D., an assistant professor at Van Andel Research Institute (VARI) and senior author of the study. "Despite having a reputation as largely unnecessary, the appendix actually plays a major part in our immune systems, in regulating the makeup of our gut bacteria and now, as shown by our work, in Parkinson's disease."

The reduced risk for Parkinson's was only apparent when the appendix and the alpha-synuclein contained within it were removed early in life, years before the onset of Parkinson's, suggesting that the appendix may be involved in disease initiation. Removal of the appendix after the disease process starts, however, had no effect on disease progression.



Aggregated alpha-synuclein in the neurons of the appendix. Credit: Courtesy of Viviane Labrie | Van Andel Research Institute

In a general population, people who had an appen-

dectomy were 19 percent less likely to develop Parkinson's. This effect was magnified in people who live in rural areas, with appendectomies resulting in a 25 percent reduction in disease risk. Parkinson's often is more prevalent in rural populations, a trend that has been associated with increased exposure to pesticides.

The study also demonstrated that appendectomy can delay disease progression in people who go on to develop Parkinson's, pushing back diagnosis by an average of 3.6 years. Because there are no definitive tests for Parkinson's, people often are diagnosed after motor symptoms such as tremor or rigidity arise. By then, the disease typically is quite advanced, with significant damage to the area of the brain that regulates voluntary movement.

Labrie and her team also found clumps of alpha-synuclein in the appendixes of healthy people of all ages as well as people with Parkinson's, raising new questions about the mechanisms that give rise to the disease and propel its progression. Clumped alpha-synuclein is considered to be a key hallmark of Parkinson's; previously, it was thought to only be present in people with the disease.

"We were surprised that pathogenic forms of alpha-synuclein were so pervasive in the appendixes of people both with and without Parkinson's. It appears that these aggregates -- although toxic when in the brain -- are quite normal when in the appendix. This clearly suggests their presence alone cannot be the cause of the disease," Labrie said. "Parkinson's is relatively rare -- less than 1 percent of the population -- so there has to be some other mechanism or confluence of events that allows the appendix to affect Parkinson's risk. That's what we plan to look at next; which factor or factors tip the scale in favor of Parkinson's?"

Data for the study were gleaned from an in-depth characterization and visualization of alpha-synuclein forms in the appendix, which bore a remarkable resemblance to those found in the Parkinson's disease brain, as well as analyses of two large health-record databases. The first dataset was garnered from the Swedish National Patient Registry, a one-of-a-kind database that contains de-identified medical diagnoses and surgical histories for the Swedish population beginning in 1964, and Statistics Sweden, a Swedish governmental agency responsible for official national statistics. The team at VARI collaborated with researchers at Lund University, Sweden, to comb through records for 1,698,000 people followed up to 52 years, a total of nearly 92 million person-years. The second dataset was from the Parkinson's Progression Marker Initiative (PPMI), which includes details about patient diagnosis, age of onset, demographics and genetic information.

Please follow the **Journal link** to read complete research:
Bryan A. Killinger, Zachary Madaj, Jacek W. Sikora, Nolwen Rey, Alec J. Haas, Yamini Vepa, Daniel Lindqvist, Honglei Chen, Paul M. Thomas, Patrik Brundin, Lena Brundin, Viviane Labrie. The vermiform appendix impacts the risk of developing Parkinson's disease. Science Translational Medicine, 2018; 10 (465): eaar5280 DOI: 10.1126/scitranslmed.aar5280

Cellphone technology developed to detect HIV

Utilizing nanotechnology, a microchip, a cellphone and a 3D-printed phone attachment, the researchers created a platform that can detect the RNA nucleic acids of the virus from a single drop of blood.

The device detects the amplified HIV nucleic acids through on-phone monitoring of the motion of DNA-engineered beads without using bulky or expensive equipment. The detection precision was evaluated for specificity and sensitivity.

Researchers found that the platform allowed the detection of HIV with 99.1 percent specificity and 94.6 percent sensitivity at a clinically relevant threshold value of 1,000 virus particles/ml, with results within one hour. Notably, the total material cost of the microchip, phone attachment and reagents was less than $5 per test.

Image source: www.jagran.com

"Health workers in developing countries could easily use these devices when they travel to perform HIV testing and monitoring. Because the test is so quick, critical decisions about the next medical step could be made right there," said Shafiee. "This would eliminate the burden of trips to the medical clinic and provide individuals with a more efficient means for managing their HIV."

"We could use this same technology as a rapid and low-cost diagnostic tool for other viruses and bacteria as well," said lead author Mohamed Shehata Draz, PhD, an instructor in the Division of Engineering in Medicine and Renal Division of Medicine at the Brigham.. "This platform could help a lot of people worldwide."

Please follow the **Journal link** to read complete research:
Mohamed Shehata Draz, Kamyar Mehrabi Kochehbyoki, Anish Vasan, Dheerendranath Battalapalli, Aparna Sreeram, Manoj Kumar Kanakasabapathy, Shantanu Kallakuri, Athe Tsibris, Daniel R. Kuritzkes, Hadi Shafiee. DNA engineered micromotors powered by metal nanoparticles for motion based cellphone diagnostics. Nature Communications, 2018; 9 (1) DOI: 10.1038/s41467-018-06727-8

Evidence of restored vision in rats following cell transplant

Led by David Lyon, PhD, associate professor of Anatomy & Neurobiology and director of graduate studies at the UCI School of Medicine, the study, titled, "Detailed visual cortical responses generated by retinal sheet transplants in rats with severe retinal degeneration," reveals that sheets of fetal cells integrate into the retina and generate nearly normal visual activity in the brains of blind rats.

"It's been known that retinal sheet transplants can integrate into the degenerated eyes and allow the animals to detect light. But, beyond rudimentary light detection it was not known how well the visual system in the brain functioned with the newly integrated retinal transplant," said Lyon. "In this study, we found that neurons in the primary visual processing center perform as well as neurons in animals with normal healthy retinas. These results show the great potential of retinal transplants to treat retinal degeneration in people."

Age-related macular degeneration and retinitis pigmentosa lead to profound vision loss in millions of people worldwide. Degeneration of the retina as a result of age or progressive eye disease damages the light-detecting cells necessary for accurate vision. Current treatments can only help protect existing cells from further damage and are ineffective during late stages of disease once these cells are gone. Retinal sheet transplants have been successful in animal and human studies, but their ability to restore complex vision has not yet been assessed.

"Remarkably, we found fetal retinal sheet transplants generated visual responses in cortex similar in quality to normal rats. The transplants also preserved connectivity within the brain that supports potential of this approach in curing vision loss associated with retinal degeneration," said Lyon.

Measuring the response of neurons in the primary visual cortex, Lyon and colleagues demonstrated how rats with severe retinal degeneration that received donor cells became sensitive to various attributes of visual stimuli, including size, orientation, and contrast, as early as three months following surgery. The study represents an important step forward in combating age- and disease-related vision loss in human adults. Follow up behavioral research will be necessary to further determine effectiveness and acuity.

Please follow the **Journal link** to read complete research:
Andrzej T. Foik, Georgina A. Lean, Leo R. Scholl, Bryce T. McLelland, Anuradha Mathur, Robert B. Aramant, Magdalene J. Seiler, David C. Lyon. Detailed visual cortical responses generated by retinal sheet transplants in rats with severe retinal degeneration. The Journal of Neuroscience, 2018; 1279-18 DOI: 10.1523/JNEUROSCI.1279-18.2018

First assessment of planetary boundaries for antibiotic and pesticide resistance

Researchers have now published the first estimates of antibiotic and pesticide "planetary boundaries" in the journal Nature Sustainability. The researchers suggest that if resistance to antibiotics and pesticides goes beyond these boundaries, societies risk large-scale health and agricultural crises.

The new research concludes that Gram-negative bacteria, a group of bacteria that includes well-known pathogens such as Salmonella, Klebsiella pneumoniae, and E. coli, are already beyond the "planetary boundary," as some strains of several species are already resistant to all or most antibiotics tested.

"It appears as if we have crossed a tipping point for Gram-negative bacteria, with doctors increasingly reporting untreatable infections. We now need to manage these 'nightmare bacteria' differently," says lead author Peter Søgaard Jørgensen from the Global Economic Dynamics and the Biosphere programme at the Royal Swedish Academy of Sciences and Stockholm Resilience Centre, Stockholm University.

"Without new approaches, going to hospital in the future will increasingly become a gamble. More patients will get unlucky, and become infected with untreatable or hard to treat bacteria. This is an urgent risk to human society," says Søgaard Jørgensen.

The team defined and assessed the state of the planetary boundary for six types of resistance including: antibiotic resistance in Gram-negative and Gram-positive bacteria; general resistance to insecticides and herbicides and resistance to transgenic Bt-crops and glyphosate resistance in herbicide resistant cropping systems. All six assessed boundaries are in zones of increasing risk and three out of six are in zones of high regional or global risk.

Pesticide resistance is an urgent concern, particularly resistance to glyphosate (the core ingredient in the herbicide Roundup) and insecticidal Bt-toxins in transgenic crops, which are now widespread.

The researchers' assessment suggests that some herbicides and Bt toxins have already reached regional boundaries with some farming areas reporting large-scale resistance to these pesticides.

"A benefit of crops resistant to glyphosate is that they help farmers control weeds already resistant to other herbicides," says Yves Carrière, an author on the study from the University of Arizona. "But rapid and widespread evolution of resistance to glyphosate in many weeds has sometimes left few effective herbicides for the control of weeds with multiple resistance."

"Without better weed management programs it is just a matter of time before this herbicide planetary boundary is also transgressed," adds Carrière.

The historical evidence suggests that reversing the spread of resistance is unlikely explains Søgaard Jørgensen. "Once resistance becomes established, it is unlikely to completely disappear again." In addition, increasing efforts to fully eradicate bacteria and pests is likely to make matters worse. Instead, new strategies are needed that promote the growth of bacteria and pests that are susceptible to pesticides and antibiotics, at the expense of those with resistance.

"Susceptible insects, plants and bacteria provide a benefit to society, promoting them can be part of a new and broader strategy of chemical de-escalation for the 21st century," says Søgaard Jørgensen. These new strategies need to promote the importance of sustaining susceptibility to pesticides and antibiotics and account for the many other services that microbes, plants and insects provide to us through e.g. pollination, biological control, and benefits to human health.

"These strategies are urgently needed as complements to development of new antibiotics and pesticides. Together they have the potential to bring us back inside the boundaries to a zone of lower risk," says Søgaard Jørgensen.

Please follow the **Journal link** to read complete research:
Global Economic Dynamics and the Biosphere Royal Swedish Academy of Sciences Stockholm Sweden et al. Antibiotic and pesticide susceptibility and the Anthropocene operating space. Nature Sustainability, 2018 DOI: 10.1038/s41893-018-0164-3

Just a single missing gene may lead to miscarriage

A single gene of the mother plays such a crucial role in the development of the placenta that its dysfunction leads to miscarriages. Researchers from the Medical Faculty of Ruhr-Universität Bochum (RUB) have observed this in so-called knockout mice that were specifically modified for this purpose. These mice lack the

Image Source: http://grabghana.com

gene for the transcription factor Math6. By conducting further analyses, the research team is now hoping to gain new insights into the role the gene plays in recurrent miscarriage in humans. The researchers headed by Professor Beate Brand-Saberi published their results in the journal Scientific Reports on 9 October 2018.

She and her team successfully demonstrated that -- contrary to previous assumptions -- embryonic development is not disrupted when Math6 is switched off. "However, embryos and foetuses die due to placenta problems," says the researcher. The development of the placenta, which is made up from maternal and foetal tissue, is vital for supplying the embryos resp. foetuses with nutrients during pregnancy.

In a first step, the research team successfully localised the expression of Math6 in the placenta of mice during different stages of gestation and measured its volumes. In the process, it emerged that the gene activity spikes at the beginning of pregnancy.

In the Math6 knockout mouse, it is in particular the maternal portion of the placenta that presents deficiencies. "Its shape is altered and fewer blood vessels are formed," describes first-time author Marion Böing, whose dissertation constitutes the basis of the research project. As a result, haemorrhaging occurs during pregnancy, resulting in foetal death.

By cross-mating mice, researchers noticed that this disorder occurs only if the pregnant female lacks both parental copies of the Math6 gene. When the researchers mated females lacking only one copy of the gene with males lacking both copies, the placenta formed in the normal way.

"Consequently, the disorder depends on the genetic makeup of the mother, not on that of the embryos," concludes Beate Brand-Saberi. "Math6 expression in the female appears to be essential to sustain pregnancy and supply the foetuses with nutrients. The fact that one single gene of the mother plays such a crucial role for placental development is a very rare, but very important observation," continues the researcher.

Please follow the **Journal link** to read complete research:

Marion Böing, Beate Brand-Saberi, Markus Napirei. Murine transcription factor Math6 is a regulator of placenta development. Scientific Reports, 2018; 8 (1) DOI: 10.1038/s41598-018-33387-x

Scientists made functioning 3D human neural networks from stem cells

A team of Tufts University-led researchers has developed three-dimensional (3D) human tissue culture models for the central nervous system that mimic structural and functional features of the brain and demonstrate neural activity sustained over a period of many months. With the ability to populate a 3D matrix of silk protein and collagen with cells from patients with Alzheimer's disease, Parkinson's disease, and other conditions, the tissue models allow for the exploration of cell interactions, disease progression and response to treatment. The development and characterization of the models are reported today in ACS Biomaterials Science & Engineering, a journal of the American Chemical Society.

The new 3D brain tissue models overcome a key challenge of previous models -the availability of human source neurons. This is due to the fact that neurological tissues are rarely removed from healthy patients

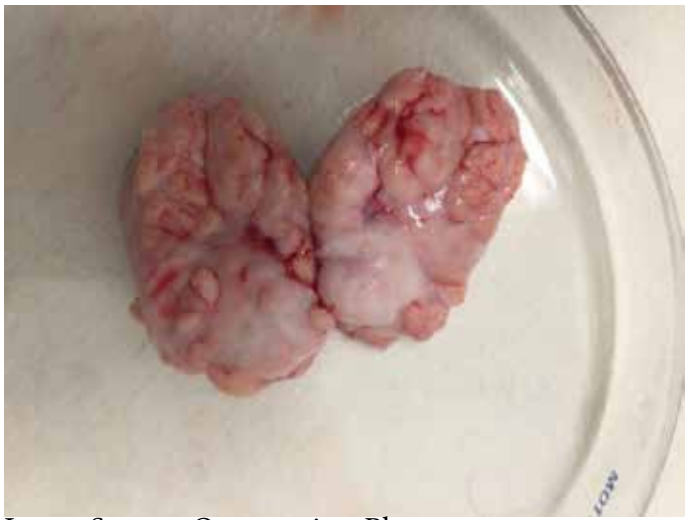


Image Source: Outsourcing-Pharma.com

and are usually only available post-mortem from diseased patients. The 3D tissue models are instead populated with human induced pluripotent stem cells (iPSCs) that can be derived from many sources, including patient skin. The iPSCs are generated by turning back the clock on cell development to their embryonic-like precursors. They can then be dialed forward again to any cell type, including neurons.

"The growth of neural networks is sustained and very consistent in the 3D tissue models, whether we use cells from healthy individuals or cells from patients with Alzheimer's or Parkinson's disease," said William Cantley, Ph.D., 2018 graduate of the Cell, Molecular & Developmental Biology program at the Sackler School of Graduate Biomedical Sciences at Tufts and first author of the study, which was completed as part of his Ph.D. dissertation. "That gives us a reliable platform to study different disease conditions and the ability to observe what happens to the cells over the long term."

Journal Reference:

William L. Cantley, Chuang Du, Selene Lomoio, Thomas DePalma, Emily Peirent, Dominic Kleinknecht, Martin Hunter, Min D. Tang-Schomer, Giuseppina Tesco, David L. Kaplan. Functional and Sustainable 3D Human Neural Network Models from Pluripotent Stem Cells. ACS Biomaterials Science & Engineering, 2018; DOI: 10.1021/acsbiomaterials.8b00622

US FDA abandons disclosure rule after China cracks down on faked drug trial data

The FDA has walked away from a 2010 rule that would have forced drug makers to disclose fabricated data to regulators.

As Bloomberg Law reported last week, the FDA has withdrawn the proposed rule, "Reporting Information Regarding Falsification of Data," which would

require sponsors to report information indicating that any person has, or may have, engaged in the falsification of data in the course of reporting study results, or in the course of proposing, designing, performing, recording, supervising, or reviewing studies that involve human subjects or animal subjects conducted by or on behalf of a sponsor or relied on by a sponsor. A sponsor would be required to report this information to the appropriate FDA center promptly, but no later than 45 calendar days after the sponsor becomes aware of the information. This proposal is necessary because ambiguity in the current reporting scheme has caused confusion among sponsors. The proposed rule is intended to help ensure the validity of data that the agency receives in support of applications and petitions for FDA product approvals and authorization of certain labeling claims and to protect research subjects.

China was laying down a $1.3 billion fine against a vaccine maker that officials concluded had submitted falsified data for its experimental vaccine against rabies.

According to the in-Pharma Technologist, at least 14 employees at the company, Changchun Changsheng, may be facing criminal charges in the case. Last year, courts in China called for the death penalty in some such cases.

Read Full report here: Retraction Watch

Former University of Kansas researcher who plagiarized Harvard prof banned from Federal funding for two years

The sanctions come three years after the U.S. Office of Research Integrity (ORI) tried to impose a three-year ban on funding for Rakesh Srivastava, who appealed the move. In September of this year, Department of

Health and Human Services administrative law judge Keith Sickendick recommended a two-year sanction. In his decision, Sickendick noted that there was no evidence that Srivastava had engaged in research misconduct other than in this incident, and that he denied adding the plagiarized passages to the grant application himself.

Srivastava was also named an "Eminent Scholar." But in October 2012, the ORI received an allegation that Srivastava had committed plagiarism, and the agency forwarded the allegation to KUMC, whose investigation confirmed, according to court documents, that Srivastava had plagiarized the work of a Harvard Medical School doctor in an attempt to obtain grant money. The plagiarism was discovered when Dr. Srivastava submitted the plagiarized grant proposal to the National Institute of Health (NIH) after the Harvard Medical School doctor had already submitted her grant proposal to the NIH.

Harvard and the Brigham call for more than 30 retractions of cardiac stem cell research

Harvard Medical School and Brigham and Women's Hospital have recommended that 31 papers from a former lab director be retracted from medical journals.

The papers from the lab of Dr. Piero Anversa, who studied cardiac stem cells, "included falsified and/or fabricated data," according to a statement to Retraction Watch and STAT from the two institutions.

Last year, the hospital agreed to a $10 million settlement with the U.S. government over allegations Anversa and two colleagues' work had been used to fraudulently obtain federal funding. Anversa and Dr. Annarosa Leri — who have had at least one paper already retracted, and one subject to an expression of concern — had at one point sued Harvard and the Brigham unsuccessfully for alerting journals to problems in their work back in 2014. Anversa's lab closed in 2015; Anversa, Leri, and their colleague Dr. Jan Kajstura no longer work at the hospital.

While the Brigham settled with the U.S. Department of Justice, the U.S. Office of Research Integrity, which oversees research misconduct investigations involving National Institutes of Health funding, has not made a finding in the case. The university and the hospital have not said which journals the 31 papers appeared in, but the journal Circulation retracted a paper by Anversa and colleagues in 2014, and The Lancet issued an expression of concern about another in the same year.

Read Full report here: www.statnews.com

Judge dismisses most of Carlo Croce's libel case against the New York Times

Carlo Croce, a prolific cancer researcher at The Ohio State University in Columbus who was the subject of a front page story in The New York Times last year about allegations of misconduct against him, has had most of a lawsuit he filed against the newspaper thrown out.

As first reported by Courthouse News Service, United States District Judge James Graham tossed all but one of Croce's claims for defamation against the Times and two of its reporters. That claim — which involved a statement in a letter that reporter James Glanz sent Croce as part of his reporting — survived dismissal, but not on grounds that it inflicted emotional distress, Graham ruled.

Read Full report here: Retraction Watch

CAN YOU BELIEVE WHAT YOU READ?

Biotech Express

Better. Belive it

With fake and misleading news leaving most Biotechnology people confused abbout even the basic facts, Biotech Express keeps it real. Whether in print or digital people trust it to be expertly researched written and fact checked.

Bring real matters. That's a fact.

Believe Biotech | Believe Biotech Express

BIOTECH EXPRESS
Only Biotech Nothing Else

Only Global Biotech Magazine | Less Advertisements Study Guide | +Research News | Events | Policies | Notices | Career | Criticism | Fantasies | Reports | +Articles | Industry | Govt.

NOTIFICATIONS

Call for Nominations
"SERB Distinguished Fellowship"

Nominations are invited for the award of SERB Distinguished Fellowship. This fellowship is granted to a few retired eminent resident Indian scientists/ academicians who are active and have proven record of accomplishments in scientific and technological research.

The scientists left with maximum of six months period service to superannuate after the closing date of nomination, may also apply.

For the eligibility, grant and other terms of conditions of nomination including its validity, you may refer to the SERB website http://serb.gov.in/sdf.php.

Date of Opening: 1st October 2018
Date of Closing: 30th November 2018

Nominations needs to be sent along with enclosed proforma (including curriculum vitae, resume, profile etc.) as appended on the next page.

The soft copy of the nominations along with Proforma may be sent through email to keerti.serb@gmail.com.

The hard copy of the Nominations along with Proforma must be sent to the following mentioned address. Dr. R K Mehajan Scientist-G (Programme Advisor, SERB Distinguished Fellowship) Science and Engineering Research Board (SERB) 5& 5A, Lower Ground Floor Vasant Square Mall, Sector-B, Pocket-5 Vasant Kunj, New Delhi – 110 070.

Biotechnology Industry Research Assistance Council

(A Govt. of India Enterprise)

birac
Ignite Innovate Incubate

INVITES PROPOSALS

for

SUPPORTING AFFORDABLE PRODUCT/ TECHNOLOGY DEVELOPMENT

(Discovery to Commercialization)

Promoting Academic Research Conversion to Enterprise (PACE)

Supports academia to develop technologies/ products (up to PoC stage) and their subsequent validation towards commercialization through: ***Academic Innovation Research (AIR)*** and ***Contract Research Scheme (CRS)***

Small Business Innovation Research Initiative (SBIRI)

Supports industry for development of proof-of-concept and early stage validation of products/ technologies

Biotechnology Industry Partnership Programme (BIPP)

Supports industry for high risk, transformational technology/ process development from proof-of-concept to late stage validation leading to product commercialization

Who can apply?

For PACE

Academic institute, University, NGO, or Research Foundation, registered/accredited by a government body is eligible to apply either alone, or in partnership with academia or industry (while involvement of industry is optional for AIR scheme, it is mandatory to have an industrial partner for CRS)

For SBIRI & BIPP

A single or consortia of Indian company (ies) registered under ***"The Indian Companies Act 2013"*** with minimum 51% Indian ownership, and in-house R&D unit, are eligible to apply either alone, or in collaboration with another Company/ Institute/University

How to apply?

Proposals for all the Schemes are required to be submitted **online only**. For scheme details and submission of proposal, please log on to BIRAC website (**www.birac.nic.in**)

For queries, please contact:
Head - Investment, BIRAC. Email: investment.birac@gov.in

Last date for submission of proposals
30th November, 2018

CDRI AWARDS

for Excellence in Drug Research

Instituted by the CSIR-Central Drug Research Institute, Lucknow – 226 031

Invitation for Nominations / Applications

Nature of Award:

- These awards are given annually to the Indian Nationals below 45 years of age who have carried out outstanding research work in the area having direct bearing on Drug Research and Development.
- There are two separate individual awards each for the area of Chemical Sciences and Life Sciences.
- Each award carries a Cash prize of Rs. 20,000/- and a Citation.
- The awardees are expected to deliver an Award Oration on the cited work on the day of Award Felicitation Ceremony, usually held as a part of CSIR Foundation Day Celebrations at CSIR-CDRI.
- TA/DA of the awardees for to-and-fro journey will be borne by CSIR-CDRI as per the prevailing rules of Travelling allowance of Government of India.

Nomination / Application Proforma for
CDRI AWARDS 2019
for Excellence in Drug Research

Category (Tick Mark)

☐ **Chemical Sciences** ☐ **Life Sciences**

1. Name of the Nominee/Applicant: .....
2. Date of Birth & Age as on 17-02-2019 (enclose age proof): .....
3. Present Position/Designation: .....
4. Complete Address: .....

   .....

   .....

   E-mail: .....Tel: .....Mob: .....
5. Total Number of Publications: ..... Average IF: ..... Citation Index: .....
6. Patents Filed/Granted: .....
7. Technologies / Products Developed / Licensed: .....
8. Prestigious Honours & Awards Received: .....

Signature of the Nominator/Applicant
(Name and Complete Address with Seal)

Nomination/Application (in Hard Copy) must include the following information

1. Completely filled up Nomination/Application Proforma duly signed by the nominator / applicant
2. A brief description of the work (approx. 2000 words) carried out by nominee/applicant having direct bearing on drug research and development highlighting its implication/ impact on the area of drug research
3. A certificate from the Institutional head certifying that the research work submitted for the award has been undertaken in India
4. Brief bio-data of the nominee/applicant
5. Reprints of selected 5 best publications of the nominee/applicant
6. A complete list of publications of the nominee/applicant
7. Any other information to support the nomination

In the CDRI Award Felicitation Ceremony, Awardees are expected to deliver a lecture on the cited work. CSIR-CDRI will take care of the local hospitality and reimburse the entitled class fare for to & fro journey to the awardees as per the prevailing Travelling Allowance Rules of Government of India

Complete information along with the requisite enclosures must reach the following address by 31 December 2018 for consideration

Dr. Anand P. Kulkarni, Senior Scientist, Scientific Directorate, CSIR-Central Drug Research Institute, Sector 10, Jankipuram Extension, Sitapur Road, Lucknow – 226 031
E-mail: anand_kulkarni@cdri.res.in, Phone: 0522 2772459; Mob: +91 9451316745; Fax: 0522 2771941

Connect with peers

Contact: info@kashbiotech.com

https://www.facebook.com/BiotechExpressmagazine

https://in.linkedin.com/in/kashbiotech

Subscribe

ISSN: 2454-6968 RNI No. UPENG/2013/54102

Biotech Express

TERM	Print		Digital	
USER PROFILE	INSTITUTIONAL	INDIVIDUAL	INSTITUTIONAL	INDIVIDUAL
Annual	₹ 10,000	₹ 5,000	₹ 5000	₹ 1200

For payment:

Contact:
"BIOTECH EXPRESS"

Note:
Print subscription includes digital subscription as gratis (no extra cost) for the subscribed period.

Terms and Conditions:

1. Please fill the form in CAPITAL letters.
2. Print Subscription is valid in India only. Outside India Subscriber may subscribe Digital version.
3. Print Subscription cost includes first class courier charges.
4. Print subscription includes digital subscription as gratis (no extra cost) for the subcribed period.
4. The mode of payment should be cheque/DD/favouring "Biotech Express". Please write your name and contact details on the back side of cheque/DD.
5. Your subscription will commence from the next available Issue OR within four weeks.
6. For Multiple Subscriptions/error use seprate forms (Photocopies allowed).
7. Biotech Express will not entertain cancellation of subscription after commencement of the same. No request for refund will be entertained.
8. In case of changing address, kindly send us in writing one month in advance.
9. Non delivery should be reported within 20 days of publishing of monthly issue to consider repost by us. After which no request will be entertain under any circumstances.
10. Annual Subscription can be avail throughout the year.
11. Previous Volumes are available on request.

My Details !

Name of Individual/Institution.....

Address (correspondence).....

Pin..... Mobile..... enclosing Cheque/DD of ₹ .....

..... (in figures).....

Drawn on .....in favour of Biotech Express for the subscription plan.....

Please submit this form after filling the details and send it to :
BIOTECH EXPRESS - V-31/4, Ext-1, Shalimar Garden, Sahibabad, Ghaziabad, U.P- 201005, India.

SUBSCRIBE INFO ON WEBSITE @ www.kashbiotech.com