HiMediaLaboratories™ Newsletter Volume - 10 | January 2020





Dear Stakeholders,

Last quarter started on a positive note with HiMedia being listed among top 3 Bio-supplier companies in India by Biospectrum in their July 2019 issue. This came in as an added celebration, while we were still basking in the glory of being awarded as the 'Best Company of the Year 2018'. We remain focused in achieving our key goals and realizing our vision of serving humankind simultaneously. We appreciate your continued commitment and support to HiMedia and our growth with the trust and confidence of making this association mutually rewarding.

Our pursuit to keep the interests of our readers alive makes us come up with insightful topics in every upcoming issue. The guest article in 'Science Galaxy' section of the current issue has been contributed by Dr. Sanjeev K. Gupta, Sr. General Manager and Head, Advanced (R&D-Biosimilar), Biotech Lab Laboratories Ltd., wherein he addresses how the shortfalls of first generation biologics are dealt with by waves of next generation bio-therapy through focus on various other disciplines. Dr. Gupta has developed and contributed for over twelve recombinant molecules till date, of which, eight Biosimilar products have already been launched in the Indian market and rest are in developmental or clinical phase.

While we keep moving and growing our businesses, it also feels humbling when we are able to be conducive in attempts by the younger generation to achieve excellence, particularly in the fields of science and technology. **Sponsoring** the renovation of Institute of Chemical Technology's (ICT) food engineering and technology department laboratory was one such initiative by HiMedia since it is our belief that a small step has the ability to bring in transformational changes to the future of biosciences.

Additional to the above mentioned, we also bring to the fore few interesting topics from team HiMedia along with CSR and other recent news. On behalf of my entire team, I thank you for your interest and welcome feedbacks.

The Science Galaxy





Dr. Sanjeev Gupta, Ph.D.,

Sr. General Manager and Head - R&D Biosimilar Ipca Laboratories Ltd., Kandivli (W), Mumbai-India

Dr. Sanjeev Gupta has obtained Ph.D. in Molecular Biology/ Cell Line Engineering and M.Sc. in Applied

Microbiology and Biotechnology. At present he is working as the Sr. General Manager and Head, Advanced Biotech Lab (R&D-Biosimilar), Ipca Laboratories Ltd., Mumbai, India. Dr. Sanjeev Gupta has established a new world class state of the art Biotech R&D facility for the development of mAb Biosimilars. He is also actively involved in establishing modern, lean and multiproduct flexible single use Bio-manufacturing facility for Biosimilar clinical trials and commercial launch.

He carries over 19 years of industrial experience and has been working since 2000 on the development of "Biosimilars" including monoclonal antibodies. His core expertise lies into Molecular Biology, Cell Line, Upstream process development, Bio-analytical as well as GMP cell banking and characterization.

Till date, he has developed and contributed for over twelve recombinant molecules, of which, eight Biosimilar products have been already launched in the Indian market and rest are in the developmental or clinical phase. They are expected to be launched in near future.

During his professional tenure, he worked at various positions in reputed Indian biopharmaceutical companies such as Zydus-Ahmedabad, Wockhardt-Aurangabad, Panacea-New Delhi, Intas-Ahmedabad and at present in Ipca Laboratories, Mumbai.

He has delivered talks on Biosimilars in various national and international conferences organized by IBC, Terrapin, IMAPAC, CphI, Biopharma, Selectbio and UBM.

He has also published several Research articles (10), Book chapters (05), Magazines (05) and Patent (01) in lieu of the Biosimilar development.

Next wave of potential therapy

Academic institutes and Biopharma Industries are now focusing on novel development to meet current demands of curing several life threatening diseases. Addressing the first generation biologics shortfalls, comes the waves of Next generation bio-therapy, which focuses on various disciplines such as Gene therapy, Stem cell therapy and recombinant antibodies including ADCs. Its potential development can be advantageous for industry as well as patients.

1. **Gene therapy:** The global gene therapy market is estimated to reach \$4,402 million by 2023(1). Gene therapy uses "Genes" to treat or prevent disease by replacing, inactivating, knocking-out a mutated gene or introducing a new gene. The major challenges of gene therapy lies in the gene delivery which includes: Viral Vector system (Adenovirus, lentiviruse etc.) or Non viral vector system (naked DNA delivery, lipoplexes and ployplexes, oligonucleotieds)(2). Other challenges include, immune rejection, long term cure, and also ethical issues. High cost of therapy is also one of the major challenges. For instance the gene therapy Glybera, Alipogene tiparvovec (by UniQuare) first approved in 2012 for hereditary lipoprotein lipase deficiency (LPLD) came with a \$1.6 million dollar price tag (3).

 Cell therapy: The global cell therapy market size expected to reach \$7.92 billion by 2025 (4). Cell therapy marks the amazing progress in the personalized medicine, where cellular material is injected into a patient as treatment to cure the disorders. Cell therapy is clinically used for the treatment of the nervous system, cancers, cardiac disorders, diabetes mellitus, bones and joints disorders, genetic disorders, and wounds of the skin and soft tissues (5).

One of the therapies in limelight for treating cancer is Chimeric Antigen Receptor (CAR) T-cell therapy, in which, patient's autologous T-cells are genetically modified to express a CAR specific for a tumor antigen, followed by ex-vivo cell expansion and re-infusion into the patients. In addition to technical complexity, the major hurdle in implementation of the therapy is the huge treatment cost: \$475,000 for tisagenlecleucel and \$373,000 for axicel. Overall incurring the total cost to over \$1.0 million per patient (6). This exciting and powerful new therapy requires the formation of new multispecialty medical teams for safe delivery and to successfully manage the resultant complications and research to make it available to people at large population.

- 3. **Next Generation Antibodies:** Next generation antibodies are equally gaining the importance in curing life threatening cancer diseases (7). These antibodies include:
 - A) Bi-specific, tri- multi specific.
 - B) Smaller antibody fragments or other protein-based
 - C) Antibody drug conjugates (ADCs): consists of a cytotoxic agent attached to a mAb via chemical linkers. They offer targeted delivery of chemotherapeutic agents directly to the cancerous tissue.

Few examples of commercially available ADCs are brentuximab vedotin (Adcetris®; Seattle Genetics) used for the treatment of relapsed or refractory Hodgkin lymphoma and systemic anaplastic large cell lymphoma., ado-trastuzumab

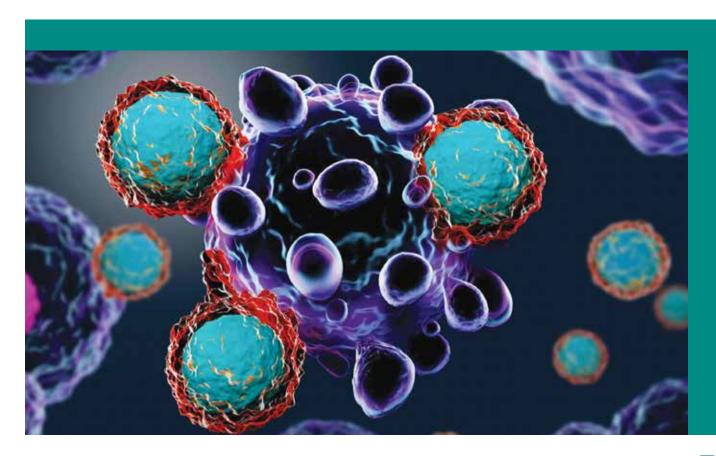
entansine (Kadcyla®; Genetech/Roche) for the treatment of HER2-positive.

Among the next generation antibodies, ADCs and Bi- specific antibodies as being the most prevalent, marking the future of antibodies as majorly used for oncology, neurology, ophthalmologic indications.

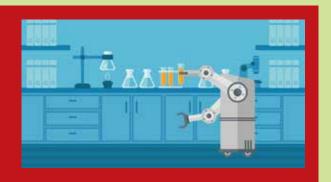
Above all the challenges and difficulties, these next generation medicine will mark the future of medicinal world as they are immensely powerful and potent to fight any biological target. However, developing these drugs in affordable cost is the biggest challenge at present. Continuous research and technologies are being developed in order to make them commercially available with affordable cost for the betterment of human health.

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- 2) www.genethrapynet.com
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- 4) https://www.grandviewresearch.com/press-release/global-cell-therapy-market
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- 6) CAR T-cell Therapy: A New Era in Cancer Immunotherapy; Miliotou AN, Papadopoulou LC; Curr Pharm Biotechnol.:10.2174/1389201019666180418095526.
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Technology Advances in Microbiology



Dr. Swanand Gangal takes us through the latest use of technology in Microbiology Labs.

Dr. Swanand Gangal - Ph.D. Product Manager, Microbiology Division



How technology found its place in microbiology

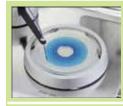
In the age of advanced mechanics and artificial intelligence, automation is revolutionizing every scientific field known to humans. Microbiology is no exception!

Automation is now powering a faster turnaround time of microbiological tests in the era of everincreasing superbugs and infectious diseases. This has helped address global issues including need for reduction of medical errors, skilled labour shortage, length of patient stays in hospitals and associated medical expenditure.

Insights on Automation trends in microbiology labs:

Microbial specimens are usually received in variety of formats. This poses significant hurdle for automation due to lack of singular setup. High end bag mixers, through their optimized microbial extraction potential, have eliminated this hurdle. Suspended in suitable transport/ suspension medium, the specimens can now be fed in to the workstations in a uniform liquid format easing the process flows. These workstations with high end robotics process the specimen further on. Various workstation capabilities include:

- · Plating/streaking samples
- Needle pick specific colonies, create suspensions
- Plating different dilutions on same plate



Automated Spiral Plater



Conventionally plated culture of *Lactobacillus*



Culture of *Lactobacillus* plated using automated spiral plater

- Periodic imaging for tracking the growth of colonies, build up growth curves for assessed cultures
- High definition imageries of media plates for total colony counts and colony selection
- Segregating positive specimens from negative ones for

An excellent video for automation trends can be viewed here: https://www.youtube.com/watch?v=fUXLYgFQhtw



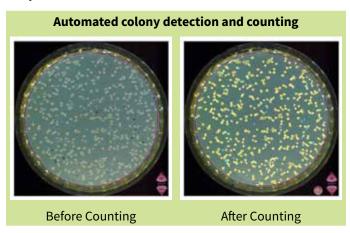
Besides workstations, a special mention goes to the major development in the identification of isolates and environmental contaminants via MALDI-TOF mass spectrometry. MALDI-TOF has now facilitated easy, cost efficient identification of micro-organisms at the species level thereby bypassing longer classic identification workflows. Likewise, many laboratory-developed tests are being majorly replaced by IVD (in-vitro diagnostic tests) resulting in reduced turnaround times for the tests.

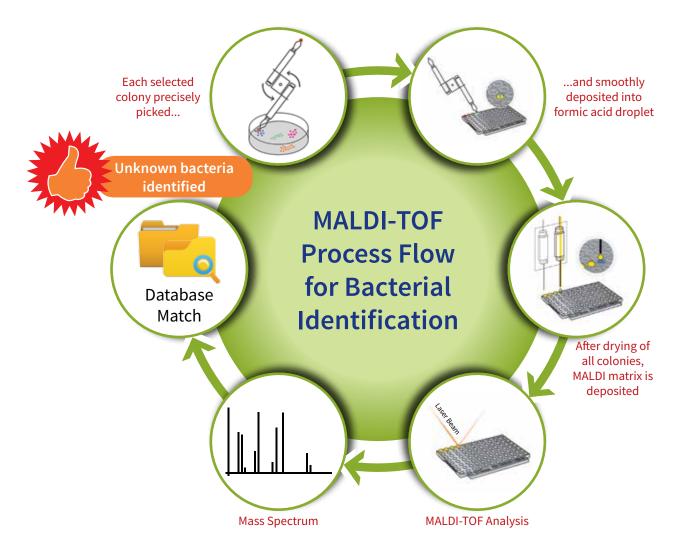
What's next?

The rapid developments in this field are set to change the looks of what we know as a conventional microbiology laboratory. However, wide-scale acceptability of these new systems now await validation of automated workflows to ensure accuracy of the output. Augmenting the new developing systems with artificial intelligence and machine learning algorithms will epitomize the transformation enabling automating interpretation complexities currently requiring human expertise.

What will a new age microbiologist do?

The new age microbiologists will simply load the specimens, set the systems for processing and report generation and walk away carefree. The machines will do the needful!









HISICON 2019 - The Hospital Infection Society of India Recognizes Dr. G. M. Warke's Work within Medical Microbiology

The Hospital Infection Society of India, a premier and oldest national body in the field of health honoured Dr. G. M. Warke as an eminent Microbiologist and industry leader for his significant contribution in the field of Medical Microbiology during their sixteenth national conference, HISICON 2019 in Kolkata on Sunday, 15th September 2019.



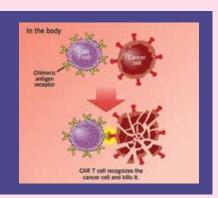


Dr. G. M. Warke being felicitated



The HISICON members with Dr. G. M. Warke

How Cell Biology helps us "C" things positively?



CAR T cells and their contribution to cancer cure.



Ms. Shraddha Mane R&D Manager, Animal Cell Culture Division

Breakthrough in Cancer treatment. Birth of CAR T cell therapy.



Chemotherapy, radiation and surgery are prime treatments of cancer. Advances in the field of immunology have shed light on how our own body's defense mechanism can be used for treatment of cancer. With this focus, CAR T therapy comes into picture.

Chimeric Antigen Receptor T cell therapy (CAR T Cell Therapy) is immunotherapy that employs patient's own engineered T cells to recognize and kill cancer cells. In this process, patient's T cells are removed. These separated cells are engineered with the help of inactivated viruses to express the receptor on the surface of T cells. The engineered T cells are further grown in high numbers and given back to the patient. Such

cells are now ready for attacking cancer cells.

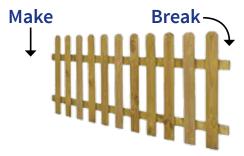
The most frequently targeted antigen in CAR T therapy is CD19 (Cluster of differentiation 19). This is used in the patient with lymphoma and leukemia B cells. This therapy has given impressive results in cancer patients. With FDA approval of Kymriah™ and Yescarta™, T cell therapy is becoming choice for B cell acute lymphoblastic leukemia.

Challenges in CAR T therapy



- 1. This may have certain side effects such as cytokine released syndrome and B cell aplasia
- 2. Standardization of dose with respect to patient is required
- 3. In some cases along with CAR T cell therapy, other immunotherapy is also essential

Cell Culture Media is a make or break component

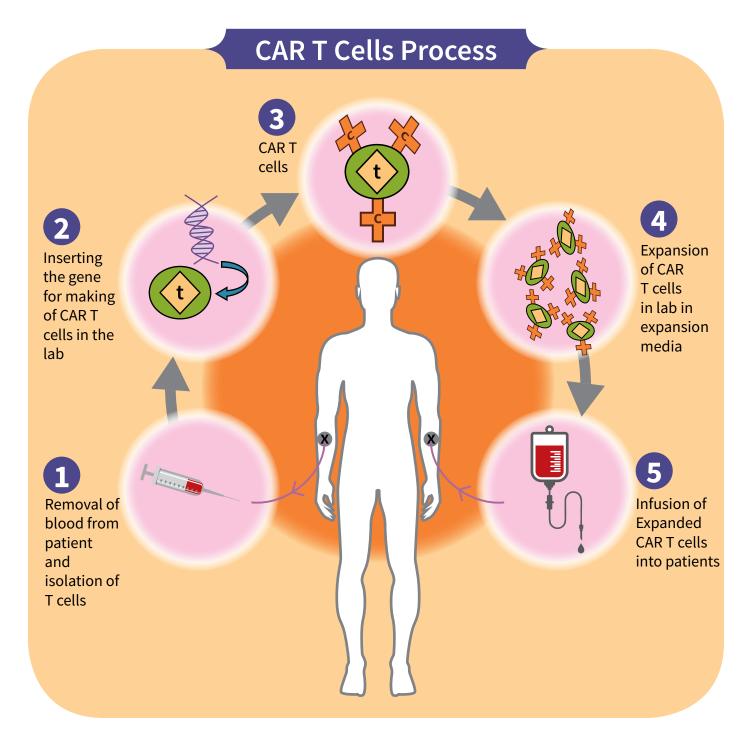


In order to have high number of CAR T cells for treatment, cell culture media plays an important role. The components present in media and their consistent results play a major role in cultivation of these cells. Generally RPMI 1640 is

used along with FBS or autologous human serum. Due to regulatory concerns, animal component free media is getting prominence. With this need, HiMedia is now entering into development of T cell Expansion Media. HiMedia has, both expertise and a state-of-the-art R&D manufacturing facility for serum free media development which includes:

- · Atomization at R&D and Production scale
- · Set media manufacturing process
- Technically sound scientists
- Good grip on media components and their purity

With all facilities, resources and a state-of-the-art R&D center available at hand, we at HiMedia are all set to initiate our journey towards development of CART cell serum free media. https://youtu.be/UZpHu0gl6LU





Healthy and Happy Employees



















Yoga Day at HiMedia Nashik

Yoga is a gift of ancient Indian tradition to the world and its practice imparts great physical, mental and spiritual benefits to the human race. Around the world, June 21st, 2019 is observed as International Day of Yoga. The significance of this date is its being the longest day of the year in the Northern Hemisphere.

At HiMedia, we believe in the well-being of employees and stride to work in that direction positively. We celebrated 'International Yoga Day' on June 21st, 2019 at the Dindori plant in Nashik. Mr. Chetan Lohar was the principal presenter, who guided and educated employees on health benefits and significance of yoga in everyday life. He also demonstrated several asanas and pranayama explaining their respective advantages.

The entire event was coordinated by Mr. Mukund Chitte, Executive HR at Dindori plant with shared efforts from Mr. Rajendra Rasal, Mr. Kishore Magar, Mr. Bhagwat Warke and Mr. Kishor Shukla. The event would not have been possible without the support and motivation of Mr. Anil Warke, Director at Dindori plant.

Surya Kriya for HiMedia Mumbai

HiMedia Team Mumbai, on the other hand, organized a 3 day yoga workshop for employees during early June. The central theme of the workshop was 'Surya Kriya', an idea put forth by Dr. Priti Warke, Director- ATC, who herself engages in regular yoga practice and meditation.

Surya Kriya is a holistic approach to yoga for inner wellbeing, both physically and spiritually. It activates and balances the inner energy channels of a person thereby leading to the stability of body and mind in equal parts. The process enhances mental clarity and focus, boosts vigor and vitality, balances hormonal levels in the body, remedies weak constitutions and prepares one for deeper states of meditations.

The workshop was conducted by Mr. Makrand Mode, an instructor associated with Isha Yoga's Hatha School of Yoga. During the 3 day workshop, Mr. Mode shed light on benefits of the kriya and how it elevates energies at various levels.



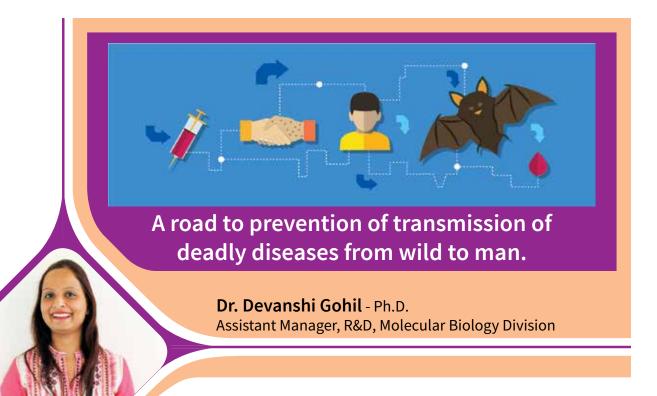










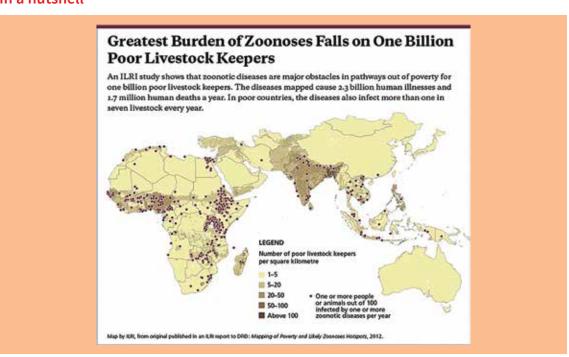


Why is it important for us to monitor human and animal interaction.

Indian subcontinent is congenial for the outbreak of animal infectious diseases. The prevalence of zoonotic disease to the subcontinent is due to the suitable host and environmental factors. Although accurate estimates are lacking, India is home to a large number of stray and peridomestic animals. Available estimates reveal that there are approximately 2.6 million

dogs in urban areas, more than 20,000 stray cows and considerable numbers of stray pigs, cats, rodents, monkeys and other wild animals. These animal populations which live in close proximity to crowded human settlements cause significant risk for the perpetuation of many zoonotic diseases and transmit infections to humans through contaminated food and water. Hence, there is an urgent need to develop accurate diagnosis to improve human, animal and environmental health.

In a nutshell



Diagnosis forms an integral component of animal diseases management and prevention. Any outbreak of animal disease can spread and pose threat to an entire population. Hence, animal disease diagnosis forms the connecting link between the cause and cure of the disease. The initial development in the animal disease diagnostics not only depends on the proprietor of the farm/breeding centre who succumbs the affected animal to the laboratory but also depends on the test method used for diagnosis.

Trying, testing and finally triumphing.



The conventional diagnostic tests are generally of two types: a) tests that demonstrate the presence of infectious agent, major antigens expressed by the agent. b) tests that demonstrate the presence of antibodies against the infectious agent. Majority of these conventional pathogen detection techniques have been perceived in animal disease diagnosis to be time consuming, laborious, lesser sensitivity and even sometimes require in vivo systems.





Newer concepts of animal disease diagnosis are required as any type of emerging and re-emerging disease follows a rapid pandemic form. Such diagnosis can only be achieved through molecular detection. The molecular tools and techniques being applied in animal disease diagnosis include polymerase chain reaction (PCR), Reverse transcription PCR (RT-PCR), Real-time PCR and various others like nucleotide sequencing, bio-sensors and nano-based techniques. With the use of these recent biotechnological tools, the detection of animal pathogens has been strengthened in terms of reliability, rapidity, sensitivity, specificity, reproducibility and low cost along with characterization and monitoring of several pathogens. These rapid diagnostic methods have been very helpful for an effective disease control programme and also during animal disease outbreaks.

A solution that was found after all the hardwork!



Keeping this in mind, HiMedia Laboratories Pvt. Ltd. has developed a rapid, novel, sensitive, specific and affordable range of Real-Time PCR veterinary kits for diagnosis of different infectious animal pathogens which have been validated by Government of India's Western Regional Disease Diagnostic Laboratory, Pune. These kits help in providing a definitive answer in less than 24 hrs or even during the course of initial examination of the animal. We have come up with Real-Time PCR kits for detection of bacterial infections in animals such as Brucellosis, Haemorrhagic Septicaemia and chronic respiratory infections caused by Mycoplasma gallisepticum. We also have Real-time PCR kits for identification of Viral and protozoa animal infections such as Newcastle Disease Virus (NDV), Peste des petits ruminants (PPR), Capripox, Infectious Bovine Rhinotracheitis (IBR) and Theileria spps.

Being in the clinical diagnostic industry for over 43 years, HiMedia Laboratories Pvt. Ltd., actively engages in combating animal health by developing innovative and affordable diagnosis as our prime objective, pioneering from "Microbiology" to "One-Stop Molecular Diagnostic Solution".

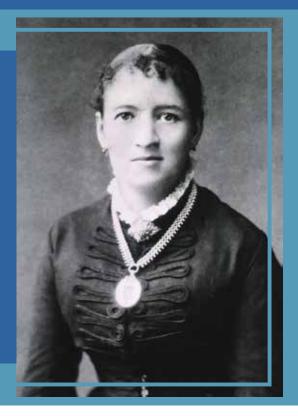


Unsung Champions of Scientific Research

Fanny Hesse

(Angelina Fanny Elishemius, 1850 –1934)

The Forgotten Woman Who Made Microbiology Possible



The advent of Microbiology saw scientists struggling to isolate bacteria from the gelatinous growth media. The lower melting point of gelatine made it difficult for scientists to cultivate and isolate microorganisms and that became a sticking point.

In the earlier days of Microbiology evolution, scientists

kept struggling to isolate bacteria and classification their appeared despairingly complex. During this period, in 1881, Walther Hesse a then medical practitioner, joined Robert Koch's laboratory (effectively in a post-doctoral position) in 1881 to study air quality and was finding it difficult to isolate bacteria gelatine. using



would either melt too soon or was being degraded by the microorganisms.

Angelina Fanny Hesse (Elishemius), Walther's wife, worked in an unpaid capacity to assist him through preparing bacterial growth media, cleaning equipment and producing illustrations for publications. Based on her experience with another gelling agent used in her kitchen, Angelina suggested her husband the use of agar instead of gelatine. This led both Walther and Angelina to become instrumental in inventing and introducing agar as a medium to grow, isolate and cultivate microorganisms.

Agar is vegetable gelatine obtained from Japanese seaweed *Gelidium corneum*.

Following this, Robert Koch used agar instead of gelatine to culture the tuberculosis bacteria. Though Robert Koch revealed that he used agar instead of gelatine for culturing

tuberculosis bacilli in his paper which was published in 1882, he neither gave credit to Walther and Fanny Hesse, nor did he mention his reason for switching from gelatine to agar. Fanny Hesse's recommendation neither resulted in any financial benefit for the Hesse family nor did she receive any credit for this significant discovery.

Thus, Angelina Fanny Hesse became the unsung shero of Microbiology.

HiMedia pays tribute to Angelina Fanny Hesse through this article without whom the journey of Microbiology would have been a little different.

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- 2. https://wikivisually.com/wiki/Fanny_Hesse
- 3. https://es.wikipedia.org/wiki/Fanny_Hesse
- 4. https://www.revolvy.com/page/Fanny-Hesse?
- 5. https://www.condalab.com/news/details/articulo/-e111a3802b/



Product branding what's in the name?





Assistant Manager- Digital Marketing & Brand Communication



Apple, Google, Netflix. We are surrounded by brand names everywhere. These brands manage to gradually become a part of our day-to-day communication.

Product branding is the most critical marketing aspect of a business that helps identify its products and, distinguish them from other products. When it comes to branding any product, there is a sundry of parameters that go into the process, in addition to numerous huddles while strategizing and planning. Good brand names are an outcome of careful curation and are seldom arbitrary, making sure they directly convey the position, purpose, and value of the products without much delineation. Also, the fact that a brand name must evoke a sense of emotional connect, positive connotation and, trust among customers stands primary for business houses when introducing a new

product into the market.

What matters in successful brand building process?

Determine The Brand's Target Audience :

To understand the demographic pulse of the product becomes imperative while naming it. Many a times, tagline works even better than the brand name itself that helps in tailoring a perfect message.

Example - Indigo Airlines, an establishment of Interglobe Enterprises started its operations with principal focus on low fares and best-inclass service. Indigo has been successful in maintaining the status quo in offering affordable air transportation.



Single class and hassle free service marks Indigo's business features

Benchmark Competitor Brands Catering To Similar Industry: Though it is discouraged to imitate others, a thorough homework becomes a mandate in order to understand what's working for the competitors and what's leading them to set their foot back. This helps in standing out from the competition.

Example – Starbucks v/s Costa Coffee: What Starbucks was to the US; Costa Coffee was to the UK. Both brands entered the coffee business in 1971. The marketing mixes of both brands have been very similar, with little variations in terms of 4P's strategies. However, they have their own sets of loyal customers worldwide.



The Elevator Pitch: A message intricately associated with the brand that can be conveyed in not more than 2 sentences makes a perfect elevator pitch. A brief but strong catchphrase put subtly, at a human level can strike the right emotional chord.



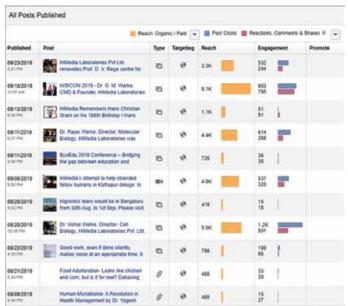
HiMedia's one liner ad says all about its quality

Creating A Lasting Image- Tangible and Digital: Integrating the brand in every aspect of the business, be it in the surroundings or in personal interactions is important. Use of tangible forms like visually pleasing brochures and product packaging make a great impact in creating a lasting image. Logos and color patterns also play a significant role in making brand recall effective.

As the world goes digital, streamlined use of digital platforms to make the brand presence felt has become vital. It is best done through the company website and regular use of relevant social media platforms.



The number of impressions and engagements on the above post is the data received within 4 hours of posting the event on social media.



Post reach numbers and impressions received on social media speaks volumes about brand's reach

All in all, it's the brand value that helps create a sustainable prolonged conversation with a brand in the future! So let's dress our products well and brand them.





CSR Activity

HiMedia Renovates Prof. D. V. Rege Centre for Advanced Food Technology at ICT, Mumbai

Analytical laboratory in the Institute of Chemical Technology's (ICT) food engineering and technology department underwent renovation during the month of August 2019. The laboratory is named after Late Prof. D.V. Rege, who was the Director of ICT (Former, UDCT). The Laboratory for the Advanced Food Technology was founded to cater to the needs of Food Technology Research.

The renovation of the entire laboratory was sponsored by HiMedia Laboratories Pvt Ltd. and was inaugurated by our CMD and Founder, Dr. G. M. Warke on 15th August 2019.

The renovated laboratory facility is dedicated to providing a central instrumentation set-up that would make it easy for researchers to go ahead with their projects.













HiMedia Donates 5 Lakhs Towards Special Child Centre at Balvishwa Pre-school, Jalgaon

Sadguru Bhaktaraj Education Trust's Balvishwa pre-school in Dadawadi, Jalgaon, in association with the District Red Cross Centre, has opened a special child centre for special education to be provided to divyang children. This initiative was taken 15 days ahead of International Day of Disabled Persons by the principal of the school, Ms. Bharati Chaudhari.

Mrs. Saroj Warke, Director of HiMedia Laboratories Pvt Ltd. was the guest of honour for the occasion. HiMedia has donated an amount of INR 5 Lakhs towards the establishment of the centre.

"Any work done in the fields of religious, social and political field done without a selfish motive always contributes to immense success" asserts Mrs. Warke and shared her insights with the attendees.

The centre has been opened with the intention to provide special education to children within the age group of 3-6 years. Mrs. Saroj Warke motivated the children to attend school as they would be provided with special attention and education best suitable for them.









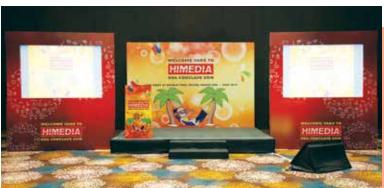


Bio Pharma Expo Jul 2019 @ Tokyo Big Sight, Japan





























Bacterial Endotoxin Assay Kit



Harmonized Gel Clot Limit Method for Testing of Bacterial Endotoxin as per USP, EP, JP and ICH Guidelines



ADVANTAGES:

- Multi-test / Single-test format available for all lysate sensitivities
- Highly stable Control Standard Endotoxin (CSE) provided with
- Cost effective premium quality reagents compared to those of competitors
- Ampoule packing reduces need for pyrogen free tubes as well as reconstituting lysate. Simply add your sample, mix and incubate!

INTENDED USE:

- Qualitative detection of endotoxin in pharmaceuticals, biological products, radioactive medicine and medical devices
- Pyrogen control or endotoxin detection during production processes of above products as well as associated raw material

PRINCIPLE:

- Presence of the endotoxin activates factor C in the horseshoe crab amoebocyte lysate
- Activated factor C further activates factor B
- Pre-clotting enzyme (inactive) is cleaved by activated factor B into clotting enzyme (active)
- Active enzyme reduces Coagulogen into Coagulin thereby leading to clot formation

POTENTIAL USER SEGMENTS:

- Pharmaceuticals
- Vaccines
- **Biologicals**

CELLin1™



Chemically defined, Animal free, Serum free Virus Production Medium

Suitable for MDCK, MDBK, Vero and PK-15

VIRAL VACCINE MEDIA

BHKin1™

Chemically defined, Animal free, Serum free **BHK-21 Virus Production Medium**

Suitable for FMD vaccine production

GMEMin1™

GMEM based formulations

Optimized for FMD vaccine production in BHK-21 cells

Virus Production Medium for **Primary Cells**

Suitable for chick embryo primary fibroblasts

LATIN AMERICA

28 Sept 2021 -30 Sept 2021

Analitica Latin America, 2021

Venue : Sao Paulo Expo, Sao Paulo/SP, Brazil

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