

THE *life* SCIENCES TIMES



Inaugural
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From the CEO's Desk



Dear Friends,

At Abdos Life Sciences, our endeavour is to transform the future of the Indian life sciences industry. We intend to enhance our recognition as a key player in the life sciences consumables space providing a wide range of products, innovations, research, relationship-driven growth and sustainability.

With immense delight, we bring forth the inaugural issue of our newsletter 'The Life Sciences Times', which will provide you – our patrons an insight into the global life sciences industry, the latest trends, exciting novel research-based articles and so much more.

Our brand promise of 'Advancing Science with Quality' has guided us to set newer benchmarks in the industry, introduce new

range of products and establish long-term relationships with our customers, channel partners, etc. Through this platform, we also intend to give you snippets of all the action at Abdos Life Sciences be it product launches, inauguration of manufacturing plants, event & exhibition participations, global meets, mergers & acquisitions and a lot more.

I am sure you would enjoy reading this newsletter and am extremely hopeful that you would extend your wholehearted support. Please send in your inputs and help us make this initiative a huge success.

Happy reading!

Thanks
Shrey Agarwal
CEO, Abdos Life Sciences

Industry Speak

Current Industry Trends in the Life Sciences Industry

Decentralised clinical trials involve a variety of digital technologies that enable research to be conducted without the need for face-to-face interaction between research teams and study participants. The adoption of more decentralised and patient-centric trials is increasing, as they offer benefits such as significant cost reduction and generation of robust clinical data through continuous monitoring.

A number of Contract Research Organisations (CROs) have taken the lead in advancing decentralised and virtual trials. As the pandemic continues, adoption of decentralised trials is accelerating; manufacturers disclosed that only 41% of clinical trials were conducted in the traditional, onsite method in 2021 and around 60% were either hybrid or completely virtual and decentralised. Manufacturers will continue to outsource parts of their trials to CROs in the short-term, until they build internal capabilities for hybrid and decentralised trials.

Regulators and biopharma companies are working hand-in-hand, which has resulted in the accelerated growth of several digital platforms: Remote Patient Monitoring (RPM) solutions, including the use of telehealth; the Internet of Medical Things (IOMT); automatic pill devices; wearables and sensors; and the use of Electronic Clinical Outcome Assessments (eCOAs).

New industry partnerships: Biopharma, pharma and life sciences companies are adopting diverse methods to boost their market growth for developing clinical trials, to accelerate product launches, and experiment with new designs. They are also utilising cutting-edge technologies like artificial intelligence. These digital systems empower medical professionals to leverage data from previous trials, even those that were unsuccessful, to enhance their designs.



Trace Metal-Free Centrifuge Tubes

Setting “Cleaner than Clean” Standard in Research

Finding the ideal plastic consumables for your research is a task by itself, as many scientists will agree. High chemical resistance, the proper purity to prevent contamination, exact product design, and function are only a few of the factors that must be considered. Because of the requisite depth of environmental information, quality concerns like product leachability, and the presence of trace metals were frequently neglected earlier. However, both major and small biomedical and research organisations are now starting to use heavy metal-free products making this quick shift in mindset towards improved labware.

How significant is the analysis of trace metals in your specimen samples?

Abdos came to the realisation that sample collection and transportation must be planned in trace metal-free collecting labware. Additionally, aberrant results or false positives will be recorded if a specimen is received in a non-metal-free container. Abdos has therefore developed the MaxiRCF™ Trace Metal-Free Centrifuge Tubes, which are devoid of 19 distinct trace metals lower than <1ppb.

Applications & Abdos Advantage

Medical Grade Resins

Abdos MaxiRCF™ Trace Metal-Free Centrifuge Tubes are manufactured using high purity virgin USP Class VI medical grade polypropylene, conforming to US FDA 21 CFR, free from natural rubber and heavy metal.

Maximum RCF/RPM

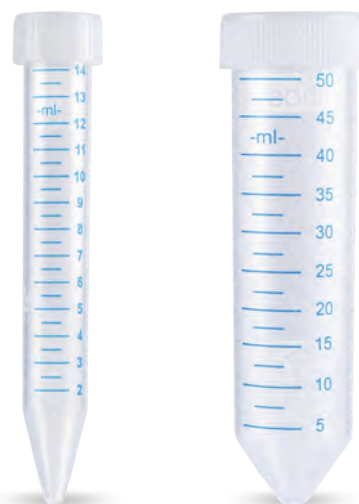
Abdos MaxiRCF™ Trace Metal-free Centrifuge Tubes withstand 20,000xg RCF and come with pure, additive free, natural colour cap.

Wide-ranging Applications

MaxiRCF™ withstands breakage, allows frozen storage at -80°C & works excellently in high-density gradient separation of samples.

High Quality Standards

Abdos MaxiRCF™ Trace Metal-free centrifuge tubes are specifically manufactured to ensure that common trace metals and elements that can interfere with experiments are below an ICP-MS detection level of one part per billion (<1 ppb). Metals included in testing are Zinc, Iron, Copper, Manganese, Aluminium, Silicon, Nickel, Vanadium, Phosphorous, Cobalt, Chromium, Lithium, Selenium, Cadmium, Mercury, Arsenic, Lead, Boron and Silver (19).



Shaping the Future of Tuberculosis Care: Pioneering Research Excellence

By Waseem Ali, Research Scholar

Department of Molecular Medicine, Jamia Hamdard, New Delhi



Mycobacterium tuberculosis (M.tb) is the etiological agent of Tuberculosis (TB), a deadly infectious disease accountable for

millions of deaths globally. As stated by the World Health Organisation, in 2019, approximately 10 million people fell ill with TB worldwide amongst which 3.2 million were women, 1.2 million children, and 5.6 million were men (WHO 2020). Altogether 30 countries accounted for 87% of total new cases with two-thirds of cases from India (highest number of cases) followed by Indonesia, China, Philippines, Pakistan, Nigeria, Bangladesh and South Africa. The emergence of drug-resistant TB has further deteriorated the situation. A total of 0.20 million people with multidrug-resistant TB (MDR-TB) were found and reported in 2019, a 10% increase from 0.18 million in 2018 (WHO 2020).

Capreomycin is a second-line antibiotic used for the treatment of drug-resistant Tuberculosis (TB), the primary reason for death from a solo infectious organism, Mycobacterium tuberculosis (M.tb).

Capreomycin targets the ribosome of bacteria and is known to bind at the

interface where the large and small ribosomal subunits interact in M.tb using an S-Adenosyl Methionine (SAM) dependent methyltransferase (Fig-1), TlyA (Rv1794). Besides the methyltransferase activity, TlyA has also been found to show substantial haemolytic activity. The dual activity of TlyA highlights its crucial role in the pathogenesis and virulence of M.tb. In the present study, docking and molecular dynamics (MD) simulations were carried out to explore the impact of mutations in a conserved SAM binding motif, 90GASTG94, on the affinity of the TlyA enzyme for SAM.

The analysis reveals changes in the conformation of TlyA due to the point mutations in the SAM-binding motif thus of the enzymatic activity of TlyA 43 and its role in capreomycin resistance.

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Figure 1: Chemical structures of SAM and the drug, capreomycin

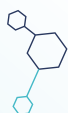
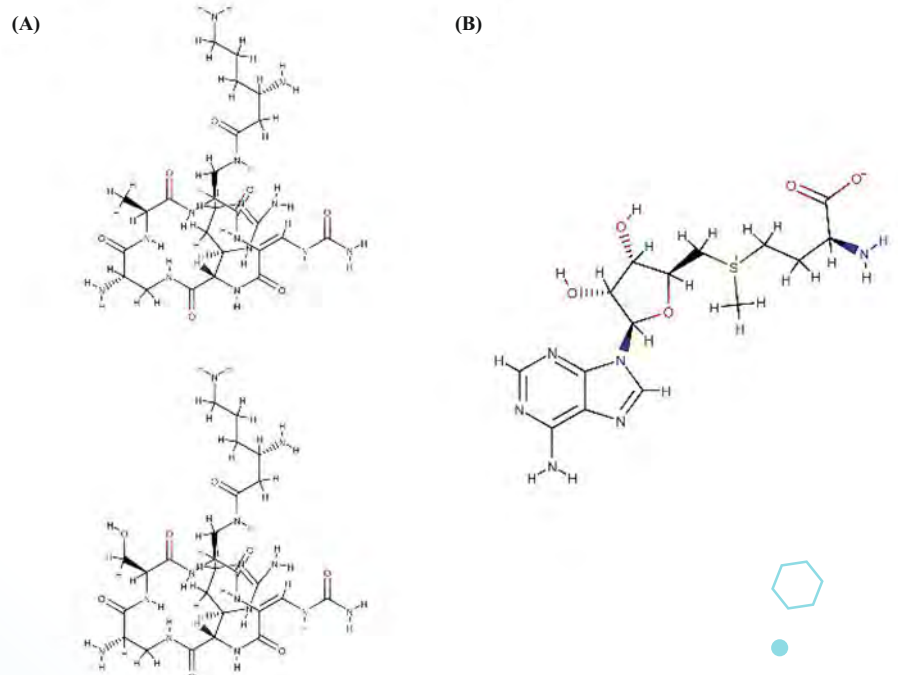
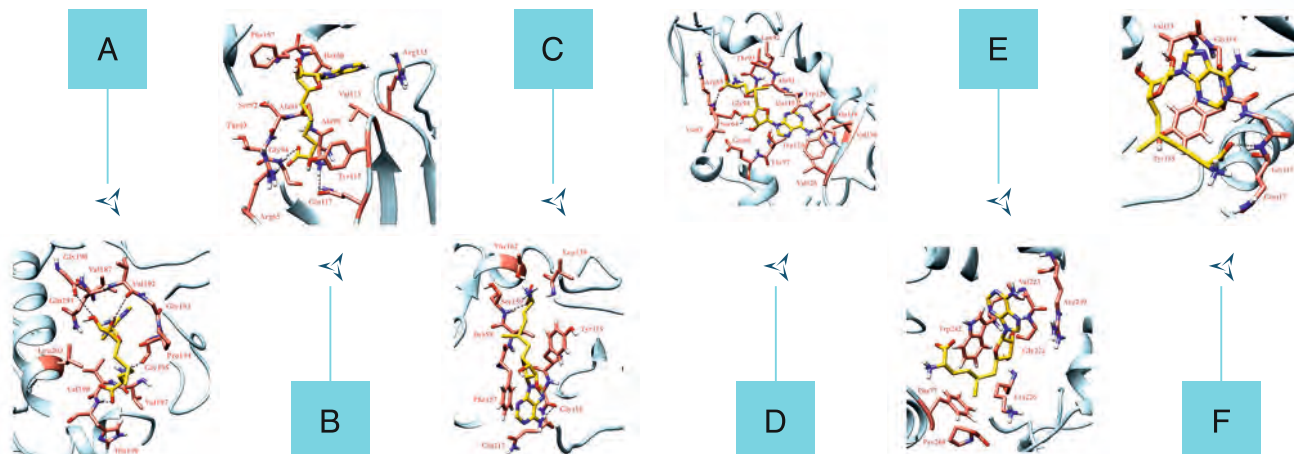


Figure 2: Interaction pattern in TlyA-SAM complexes (A) wild type + SAM (B) G90A + SAM (C) A91E + SAM (D) S92L + SAM (E) T93A + SAM and (F) G94A + SAM complexes. SAM is shown in yellow colour. Hydrogen bonding and hydrophobic residues are in salmon colour. Black dashed lines denote hydrogen bonds.



Abdos in Global Space

International Women's Day Celebration

For a momentous International Women's Day (March 8) 2023, Abdos Labtech extended its gratitude by sending a small token of felicitation for the undeterred services imparted by all our women scientists. Over 200 women scientists were felicitated by Abdos Life Sciences worldwide.

We really appreciate all our channel partners for sharing such priceless memories with us as such campaigns will empower more people around us!

Special thanks to our Channel Partner – **Axon Lab AG** for capturing and sharing such beautiful memories.



Isabelle Plaisance (CHUV - Centre Hospitalier Universitaire Vaudois)



Anna Keppner (University Fribourg)



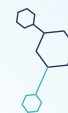
Julie Cramard (FMI - Friedrich Miescher Institute for Biomedical Research)



Sabine Juge-Ehret (University of Basel)



Sarah Decembrini (Tenpoint Therapeutics)



Screw Cap Tube

A tube with conical bottom, flat bottom, and a self-standing feature Screw Cap Tubes are preferred when liquid samples and high cost reagents are required to be stored and become a part of a molecular or a reagent kit.

Conceptualisation of a Screw Cap Tube and its usage

When thinking about the components in a tube, we must consider a range of variables in the life sciences industry, such as storage methods, chemical inertness and durability. In addition, we must consider the application, such as whether the tube will be used with an automated sampler machine, stored, or transported. Also, ensure that the cap material is inert and has the same expansion coefficient as the melt and boil points. "Screw Cap Tubes" with EPDM "O" ring manufactured by Abdos Life Sciences ensure excellent sealing and prevent evaporation of high cost reagents. Pharma, diagnostic centres, nutraceutical companies, and food processing companies all use Screw Cap vials as an all-rounder for their work in life sciences tests, as well as R&D.



- ✦ **Samples or reagents, such as buffers, enzymes, and highly concentrated or expensive chemicals, must be stored and transported** - The EPDM 'O' ring from Abdos ensure good sealing and prevents evaporation
- ✦ **Ideal for high quality oligonucleotide sample collection, processing, and storage** - Low binding qualities, improved sample recovery and leak-proof product pictures
- ✦ **Tubes and Screw Caps material** - The Septum and Screw Cap are made of the same material, resulting in the same expansion co-efficient, making it excellent for freezing and boiling applications such as water baths (withstand a broad range of temperatures -80 to 121°C)
- ✦ **Compatibility** - with most racks and storage systems and can be utilised in a variety of microcentrifuges
- ✦ **Storage** - Suitable for filling radioactive, pathogenic, and expensive compounds for long-term storage, as well as any application requiring freezing, boiling, or irradiation
- ✦ **Samples and reagents that are sensitive to light** - Tube colours include ultra-high clarity, natural colour, transparent amber & amber option that gives UV protection
- ✦ **Compatible** with Automated Systems Screw Cap Tubes that are intended to handle high torque pressure associated with automation, whether it is used for filling, capping, or labelling
- ✦ **Single hand operation** - Knurl tubes can lock into customised racks and provide additional grip during in-hand activities

Product Differentiator

Frosty Mate Colour Change Racks

Bring the Fridge to Your Bench in Style. Features are:



- ✦ **MCT Freezer Change Racks** can accommodate up to 24 tubes of 0.5 to 2.0ml volume
- ✦ **PCR Freezer Change Racks** can accommodate PCR tubes | well plates | strip tubes up to 96 places
- ✦ Racks dramatically change to a contrasting colour at 7°C indicating when your samples start to warm up
- ✦ They can keep samples cool with temperature less than 4°C for over 3.5 hours (when the lid is on rack) at room temperature and eliminate the need for an ice bucket and the mess it can cause
- ✦ At room temperature the rack is yellow, place in the freezer for 24 hours at -40 °C deep freeze and it will turn green
- ✦ When frozen, use on the bench for sample preparation and when it starts to turn back to yellow as it warms up, it needs to be frozen again. These racks can be frozen and defrosted many times

MCT Freezer Change Rack (P11106)

Capacity - 24 places
 Tube Type - 0.5, 1.5 or 2.0ml
 Colour – Yellow above 7°C, Green below 4°C

PCR Freezer Change Racks (P11107)

Capacity - 92 places
 Tube Type - PCR | Plates | Strip
 Tubes Colour – Yellow above 7°C, Green below 4°C





Action Station

Channel Partner Meet

Abdos Life Sciences organised a Channel Partner Meet from May 4-6, 2023 in the beautiful city of Visakhapatnam at the seafront luxury Novotel Varun Beach, witnessing the dazzling Bay of Bengal shoreline.

Channel partners of Abdos Group across India not only participated in exploring the serene city but also witnessed the vision and brand value that Abdos brings to the scientific community.

This three day visit embarked with infinite hopes, opportunities, collaboration, informative presentations, engaging team building activities and concluded with an awards ceremony for outstanding channel partners and clarity on the company's collective vision in collaboration with channel partners.



India Lab Expo 2023

This year, Abdos Life Sciences participated in one of India's largest and most important platform for the analysis, laboratory and biotechnology market, which was held in Hyderabad from September 14-16, 2023.

The event witnessed humongous footfall from the pharma industry, healthcare & diagnostics, clinical research labs, petro chemicals, bio pharmaceuticals industry and biotechnology industry.

Abdos displayed its entire laboratory plasticware product range to its customers from all over the world. New products were the epicentre through which we hoped to cater to the scientific community with a bigger impact this time.



Distributor Testimonial

It was 2018 when we founded ECOBIOCHEM. It was in 2019 when we started the collaboration with Abdos. It is in 2023 that we vigorously continue the representation of Abdos products in the field of life sciences through the SOLID TRUST we created from the first moment, the continuous evolution of quality and the development of the portfolio.

We faced challenges. The COVID period, the lack of raw materials, and the increase in transport costs, but every problem was dealt with responsibly and efficiently, making us stronger and more competitive. The Greek market is a very closed and demanding market. In three years we have managed to publicise and establish Abdos in Greek research laboratories among companies that have been active in this field for years.

Every year we try to become better and this is confirmed by the most reliable sources, the end users.

We really hope for the best!

Panagiotis and Vana

ECOBIOCHEM – Exclusive Channel Partners for Abdos in Greece

Abdos Manufacturing Unit-II

New Plant Expansion: **150,000 sq. ft.**

One of the largest clean room in Asia (**ISO Class 8**)

We are thrilled to announce a significant milestone in our journey of growth and innovation. With great excitement, we unveil the expansion of our manufacturing plant (Unit-II) to meet the ever-growing demands of the life sciences consumables market.

Here are some of the exciting features and benefits our new factory expansion brings:

- **Increased production capacity:** Our enhanced facility will allow us to significantly increase our production capacity to three folds, ensuring a more reliable and timely supply of products to meet the requirements.
- **State-of-the-art facility:** The new factory is equipped with cutting-edge technology and advanced machinery, allowing us to optimise processes and deliver products of superior quality.
- **Expanded product range:** The expanded factory enables us to introduce new product lines and customised solutions tailored to customer-specific needs.
- **Skilled workforce:** Our expansion has created new job opportunities, attracted top talent, and empowered our workforce to deliver even better results.
- **New & improved racking system:** The new racking system will help us with better SKU optimisation and organisation. It will strengthen us with better traceability and speed up our dispatches of goods to customers.

Our goal with this expansion is not just to grow in size but also to fortify our relationship with our customers, as their satisfaction has always been at the heart of everything we do, and this expansion reflects our commitment to their success.



Life Sciences: Did You Know?

AI Reveals New Antibiotics

Yue Ma and colleagues from the Chinese Academy of Sciences used machine-learning techniques originally developed for natural language processing to identify antimicrobial peptides encoded by the genome sequences of microbes in the human gut. The algorithm identified 2,349 potential antimicrobial peptide sequences. Of these, 216 peptides were synthesised by chemical methods, and 181 of them were shown to have antimicrobial activity. This is an impressive success rate, which would not have been possible without the aid of AI.

Researchers Fully Sequence the Y Chromosome for the First

The Y chromosome -- has just been mapped out in its entirety. Scientists used advanced sequencing technologies to read out the full DNA sequence of the Y chromosome -- a region of the

genome that typically drives male reproductive development. The results demonstrate that this advance improves DNA sequencing accuracy for the chromosome, which could help identify certain genetic disorders and potentially uncover the genetic roots of others.

2023 Global Heat Wave: July Brought the Hottest Three Weeks Observed So Far

The first three weeks of July 2023 have been the hottest global three-week period so far. Researchers report that the European population's exposure to heat was highest in Italy. Italy reached heat records of more than 40°C. In Germany, about seven million people were exposed to daily maximum temperatures higher than 25°C. In July 2023, extraordinarily persistent high-pressure areas prevailed in the regions affected by the high temperatures where descending air masses contributed significantly to warming and the local development of the heat wave.

Get in touch with us: