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# RISE

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# RISE

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## ABOUT THE MAGAZINE

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RISE Magazine is published by Office of the Deputy Vice-Chancellor (Research and Innovation) with aims to highlight a research and innovation on multidisciplinary expert of fields in UiTM. It serves as a platform for researcher to showcase their high quality and impactful findings, activities and innovative solution through publication. Contribution of these ideas come from academicians, researchers, graduates and universities professionals who will enhance the visibility of research and stride to elevate Universiti Teknologi MARA to global standards. This is an effort to promote research as a culture that is accepted by all expertise.

## ABOUT UiTM

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Universiti Teknologi MARA (UiTM) is a public university based primarily in Shah Alam, Malaysia. It has grown into the largest institution of higher education in Malaysia as measured by physical infrastructure, faculty and staff, and student enrollment. UiTM is the largest public university in Malaysia with numerous campuses throughout all 13 states in Malaysia. There is a mixture of research, coursework and programmes offered to the students. Office of the Deputy Vice-Chancellor (Research and Innovation) or known as TNCPI (*Timbalan Naib Canselor (Penyelidikan dan Inovasi)*) serves as a *Pusat Tanggungjawab* (PTJ) navigate the research and innovation of university in achieving UiTM agenda. TNCPI office strives to mobilize faculty, and campuses to move together and cooperation of researchers to become a leading global university of science, technology, and innovation by 2025.



# EDITORIAL TEAM

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# FOREWORD

*Bismillahirrahmanirrahim.*

*Alhamdulillah*, all praises to Allah SWT and a heartfelt congratulations to the Office of Deputy Vice-Chancellor (Research and Innovation) on the publication of RISE Magazine (October Issue, No. 2) in promoting visibility for UiTM's research and its researchers.

I am thrilled to have witnessed a growing number of article publications and research innovations endeavoured by our fellow researchers. Thank you for all the effort, time, and energy that you have selflessly spent for the university.

The sustainability theme chosen for this edition is wise, apt, and timely. While striving to become a Globally Renowned University (GRU) and attaining Sustainable Development Goals (SDGs), we must ensure that our research activities are in line with the 17 goals set by the United Nations (UN) as well as the university's strategic plan.

UiTM is proud with the progressive development of renewable energy and currently 7 campuses are equipped with solar photovoltaic rooftops. This supports Malaysia's noble cause of becoming a carbon-neutral nation by 2050. Green Retrofit Framework for Sustainable Residential Refurbishment Project was also initiated with

plausible effectiveness to increase the number of green buildings and eventually will help reduce the emission of Green House Gases (GHG).

Our researchers have also begun to use Green Polysaccharides material for wound healing which is greener and environmentally benign. Other noteworthy projects are the use of Resistograph to assess the accuracy of Wood Density (WD) prediction, the application of 3D printing technology in simulating real experiences of halal animal slaughtering, as well as lipid reduction via systematic screening to make our planet more sustainable.

I am delighted with the research ambience that has now become an acceptable culture in UiTM. GRU2025 is definitely achievable with continuous effort and dedication made by members of UiTM as we work towards helping the nation and the world to achieving SDGs by 2030.

Thank you.

**PROFESSOR DATUK TS. DR HAJAH ROZIAH MOHD JANOR**  
Vice-Chancellor  
Universiti Teknologi MARA



## FOREWORD

Congratulations to the editorial team on the publication of RISE magazine Issue 2, 2022, serving as a platform to showcase our pride in UiTM research and innovations.

We chose *Sustainability* as the theme for this edition. Despite its definition that may be contextual and vary across the field, we can't deny its essence and impacts on our daily life, and that every one of us should gracefully embrace.

Under this umbrella, we have witnessed an array of projects carried out by UiTM researches in various genres of research, driven to help the community in the short and long run. Flipping each page of this magazine and seeing how far we have become as a university sends unflagging goosebumps- signaling how proud I am to be part of this huge family.

Research has no longer been alien to us. We could see that the propagated activities in the quest of finding answers to problems have mushroomed over the years. It has become somewhat the bread and butter of academics other than teaching and learning. Its role has been significantly proven to elevate teaching community to a better level.

TNCPI Office seeks continuous support from every researcher, academician, and administrator to keep your momentum in doing research and innovations. Perhaps, through a stronger research ecosystem, this will help us to become a Globally Renowned University by 2025. We will keep providing supports, rewards and facilities needed in boosting the morale of our researchers.

Lastly, I hope RISE can be the front page of UiTM exhibiting the business that we are doing. Every time you go for a conference or any meeting with potential collaborators, please share RISE with them. We never know how much opportunities that will come knocking our doors just from that gesture.

Thank You.

**PROFESSOR TS. DR NORAZAH ABD RAHMAN**

Deputy Vice-Chancellor (Research & Innovation)  
Universiti Teknologi MARA

# MESSAGE FROM THE CHIEF EDITOR

Alhamdulillah

It gives me great pleasure to see RISE issue # II published. We have received a huge number of impactful submissions to be featured as our #KeluargaUiTM's research stories. Despite the difficult circumstances of post-covid19, UiTM researchers are proactive in carrying out research activities and events within their respective capacities.

Allow me to express my heartfelt gratitude to all of the authors of the articles in this magazine. Not to forget all editorial members who worked hard to ensure its publication was on schedule. The publication of this issue would have been far more difficult to achieve without their contributions. In this edition, we feature seven researchers from both science and technology and social sciences disciplines with their views and experiences in sustainability-related research and their efforts for mobilising sustainable development. Also, RISE II presents the achievements of the multidisciplinary domains by distinguished UiTM research groups.



I believe that sustainability should be the nucleus of any research agenda. Prominent researchers around the world are focusing on the call to address global livelihood and wellbeing. Hence, we at UiTM should embed and embrace the principles of Sustainable Development Goals in our research efforts.

To all researchers out there, we hope that the amazing stories in RISE II will rekindle our enthusiasm for research. We sincerely hope to bring you more research news from the #keluargaUiTM in the coming issues. I invite you to discover RISE II and be inspired. Enjoy reading!

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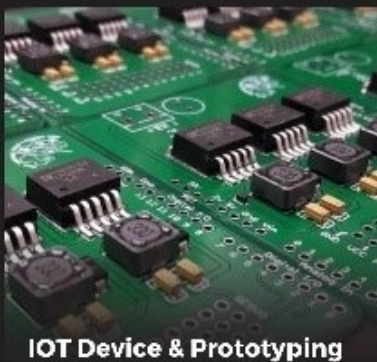
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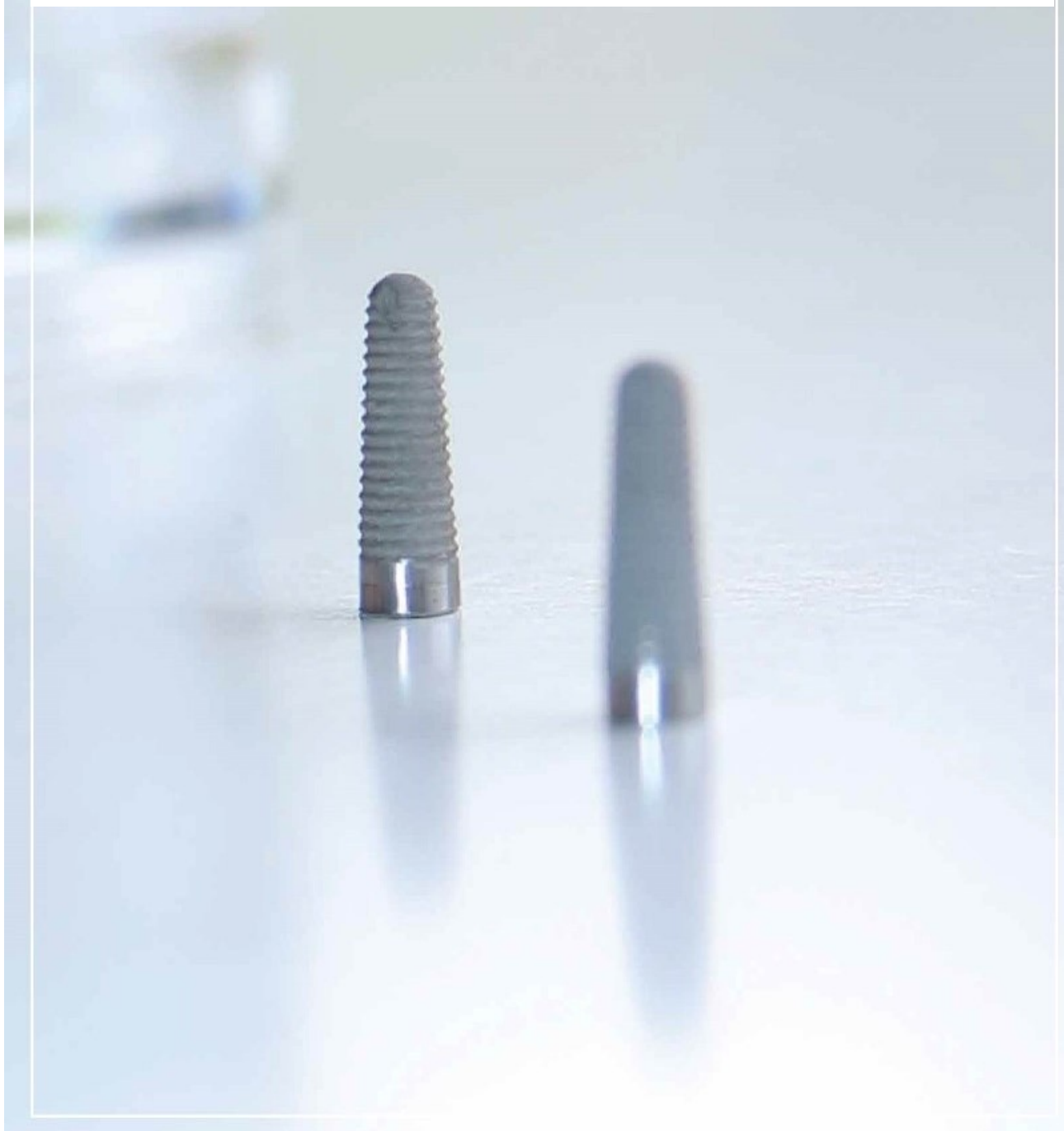


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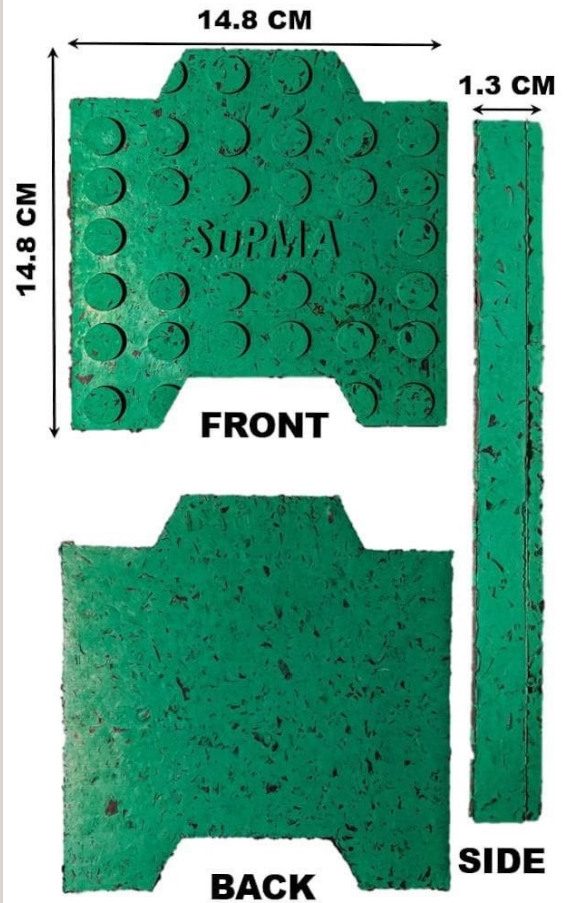
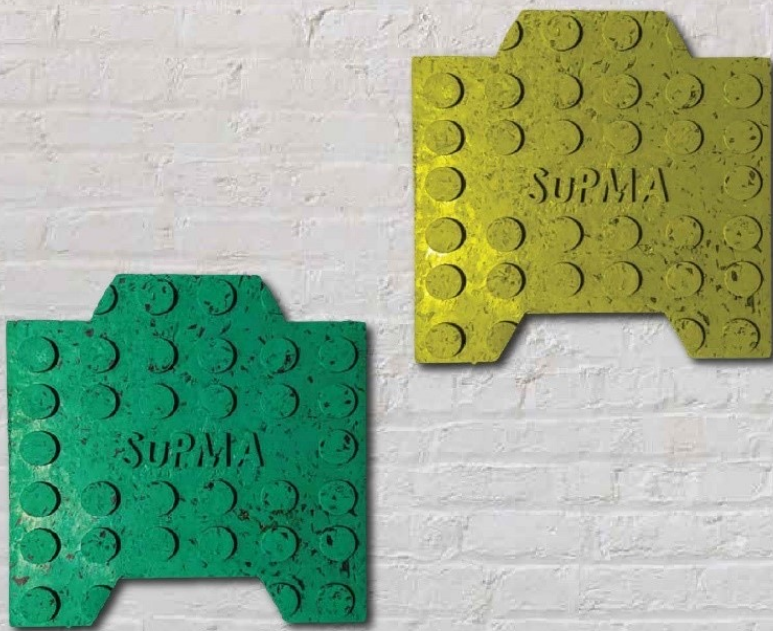


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# 'An Outlook on Sustainability in Medicine and Beyond'



**A** renowned expert in Atherosclerosis, Familial Hypercholesterolaemia (FH) and Heart Disease Prevention, Professor Datin Dr Hapizah Md Nawawi, Founding Director and Principal Fellow, Institute of Pathology, Laboratory and Forensic Medicine (I-PPerForM), spoke eloquently about sustainability in medicine, and the meaning of the terminology in broader and various other contexts. "In science, sustainability refers to the dynamic interaction between science and art, in ways that do not destroy nature. When we talk about sustainability and medicine, it would refer to efforts to coordinate, sustainable practices, and improving patient outcomes. This is also consistent with the notion of a sustainable healthcare system according to WHO, which aims at improving, maintaining, and restoring health with minimal impact to the future generation," said Professor Hapizah.

As the Founding Director of I-PPerForM, Professor Hapizah has extensive experience in establishing and sustaining a research institute and closely linked to it are the ways in achieving sustainability of the research field. "Starting a new Center of Excellence has many challenges - results don't occur overnight," she recalled her own personal experience establishing I-PPerForM. She summarised the essential elements in establishing, building and sustaining a research institute as "rancang, wang, ruang, barang, orang" ("planning, money, space, goods, people"). According to her, strategic planning is highly essential, which concerns identification of performance indicators, determination of what the targets are, conducting SWOT (strengths, weaknesses, opportunities, threats) analysis in a manner that is agile, conducting periodical review, adapting and adopting to respond to the arising challenges and future needs, and bearing in mind that flexibility is important.

In the next 20 years, Professor Hapizah anticipates that the field of medicine will progress well. In order to achieve progress, she emphasised on succession planning which consists of setting the path by the legacy holder, nurturing of knowledge or skill sets, and training of the successors which include mentoring the younger generation. In addition to these, establishing and sustaining networking linkages are also essential, as well as developing and improvement of soft skills.

There are new developments in her field of research, which Professor Hapizah has been observing with great interests. They include more comprehensive widespread screening programmes at community level, such as pCHD, family history of pCHD, severe HC / family history of HC - for the purpose of reducing under detection; enhanced awareness amongst healthcare providers and patients, families and communities; better detection tools, diagnostic criteria, locally adjusted threshold, and others which would enable early detection; and early optimal treatment which consists of new treatment modalities. It is also promising to see emerging developments involving transdisciplinary care; knowledge advancement and sharing such as through Familial Hypercholesterolaemia Studies Collaboration, Familial Hypercholesterolaemia-10 Countries; and networking and linkages involving various parties at different levels.

She imparted her invaluable words of wisdom to the younger researchers: be aggressive, passionate, pursue networking and aim to be visible in the industry. Professor Hapizah also identified essential characteristics and values to be observed by researchers: to work hard and smart, as in the words of Stephen Covey "work with the end in mind"; sincerity, trustworthiness, integrity; passion for achieving the best; resilience and persistence; a growth mindset that is able to convert problems into opportunities as success is a continuous improvement; as well as patience and gratitude." In the present day context and in the coming future, researchers ought to also equip themselves with the appropriate skill sets which include technology related skills. Other equally important skills would be writing and presentation skills to enable writing and presentation of successful grant proposals. Researchers ought to also be able to write manuscripts for high impact journals, books and other publications. People skills are also important, such as supervisory skills and mentoring skills; communication skills; and networking and linkages - within and outside the group, be it at the institutional level, national level, industrial level, as well as at international level.

"It is also important to never give up and find what is relevant. Work for the best, doa, tawakkal, then redha, remember Allah is the best planner," said Professor Hapizah assuringly.

## Researcher:

### Professor Datin Dr Hapizah Md Nawawi

Founding Director and Principal Fellow, Institute of Pathology, Laboratory and Forensic Medicine (I-PPerForM)  
Professor and Senior Consultant in Chemical Pathology and Metabolic Medicine, Faculty of Medicine  
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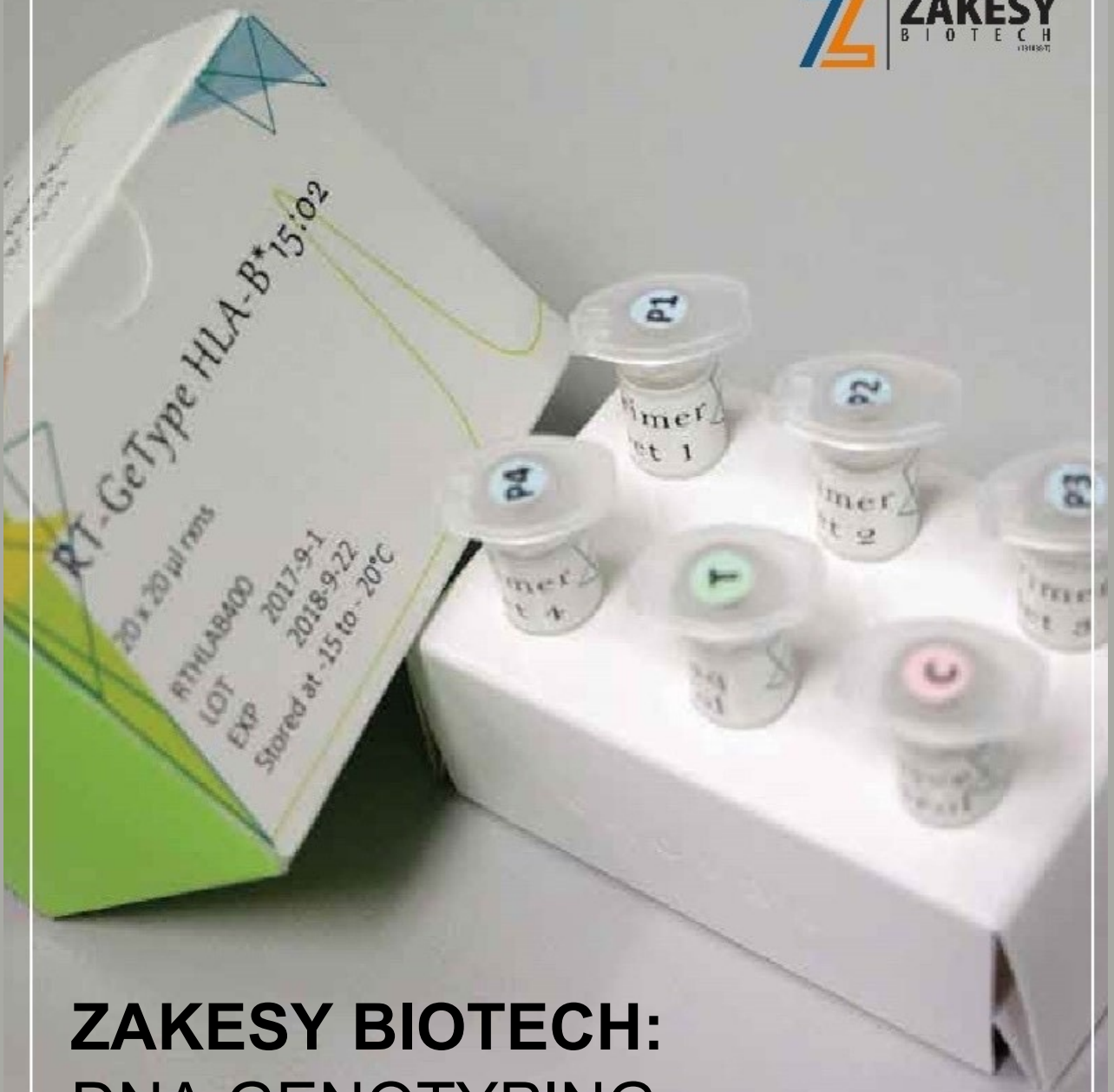
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