

Biotech Times

KAIMRC Biotechnology Park

Newsletter - November 2021



Under the patronage of HRH crown prince Mohammed Bin Salman Bin Abdulaziz Al Saud, KAIMRC organized The recent Riyadh Global Medical Biotechnology Summit 2021 that brought together key local and international players in the biotech R&D industry.

An important part of The Kingdom of Saudi Arabia's Vision 2030 is to be a global leader in the knowledge based economy that includes biotechnology. And thus, The Global summit aimed to push the boundaries of our existing thinking and practices towards a targeted and sustainable medical biotechnology enterprise in the Kingdom.

The summit kickoff on the 14th until 16th of September 2021, with an exceptional program that combined strategy, technology and scientific development in different aspects of biotechnology.



#### Welcome message by His Excellency Dr. Bandar Al Knawy

To mark this occasion, the Chief Executive Officer of the Ministry of National Guard Health Affairs (MNG-HA) Dr. Bandar Al-Knawy delivered a speech in which he expressed his gratitude for holding this summit under the patronage of the HRH the Crown Prince Mohammed bin Salman as this reflects the utmost importance given by the leadership of the country and all other interested parties to this strategic field of biotechnology.





During the opening ceremony Minister of Health, Dr. Tawfiq Bin Fawzan Al-Rabiah stated that the summit comes at a time when it has become necessary to discuss the areas of developing this technology because of its direct and close relationship with human health, pointing out that it is expected that the global market value of biotechnology will reach nearly \$700 billion by 2025, and global sales in biotechnology drugs are expected to reach nearly \$315 billion this year.

The Chairman of the Saudi Data and Artificial Intelligence Authority (SDAIA), Dr. Abdullah Bin Sharaf delivered a speech in which he confirmed that SDAIA's participation in this summit supports the unremitting efforts to develop the capabilities of the health sector through its plan for health data governance and technology to raise its quality.

As for the Minister of Investment, Eng. Khalid Bin Abdulaziz Al-Falih, he said that Riyadh Global Medical Biotechnology Summit comes at an important time to continue the ambitious march, which aims to make the Kingdom of Saudi Arabia as a distinct and preferred destination for investment in the development and manufacture of vital technologies, and push the Kingdom to become a global center for health care and life sciences.



#### Topics

- Biotechnology for the Kingdom of Saudi Arabia: Challenges and Opportunities
- Biotechnology Parks/Clusters: Best Practices and Future Trends
- Biotechnology Companies: Global Benchmarking & Partnerships
- Medical Biotechnology, Digital Medicine & Clinical Trials
- Biosimilars & Biotherapeutics
  Development & Manufacturing
- Vaccine Development & Manufacturing
- MedTech/Medical Devices & Diagnostics
- Stem Cell Biotechnology & Cellular & Gene Therapy
- Genomics, Genetics, Gene Editing & Bioinformatics





KAIMRC's Executive Director Prof. Ahmed Alaskar, highlighted the importance of this global summit, he stated "This unique global summit is for you all as we all share the passion and keen interest to learn more about this fast-evolving field of medical biotechnology, it's a vibrant filed with endless opportunities open to all of us in the Kingdom of Saudi Arabia and around the world".

#### 1st Session titled:

Biotechnology for the Kingdom of Saudi Arabia: Challenges and Opportunities Chairman: Prof. Ahmed Alaskar, featured exceptional speakers including:

- Dr. Malak AlThagafi, Director of the General Directorate for the National RDI, King Abdulaziz City for Science and Technology, who mentioned: "we know now post-COVID-19 that this is the time for the biotechnology industry and the medical industry to reset standards and work closely with policymakers. Medicine and biotechnology are critical elements of the Kingdom's economy".
- Eng. Suliman Almazroua CEO of the National Industrial Development and Logistics Program heighted that: "biotech, biopharma and biomedical are a focus of KSA's vision 2030 in addition to the resilience required for our healthcare sector in KSA". He added "the market size in KSA is actually quite remarkable: around \$9 billion a year and that is expected to reach \$15 billion in 2030".
- Dr. Elie Haddad Senior Advisor & Project Lead Riyadh Biotech City Royal Commission for Riyadh City (RCRC). Dr. Haddad mentioned "what we have to look at philosophically is what are the unmet needs of the kingdom and how biotechnology can address that. This goes beyond vaccines or antibiotics or biosimilars; it actually relates to national security, food and water. He added "when we can couple the unmet needs with the new technologies then we can start to imagine a new concept, a new strategy and a new positioning for Riyadh".



- Eng. Nizar Al-Hariri Chief Executive Officer, National Industrial Development Center.
- Dr. Ashraf Allam, CEO of the Pharmaceutical Investment Company (PIC) mentioned "KSA is the 15th largest pharmaceutical market in the world. No multinational can ignore Saudi Arabia". He added "I can see the leadership of the country is very clear in their goals and it's a lesson from COVID that the world has moved from completion to collaboration". Dr. Allam who also mentioned "to succeed you need to look to the entire ecosystem otherwise you will be sidelined and the other thing KSA is doing is improving the ease of doing business with multinationals".
- DR. Abdulrahman Alnuaim MD, FRCPC, FACP, CPE Professor, Physician, healthcare executive and pharmaceutical industry Consultant at Ministry of Industry.
- DR. Pierre J. Magistretti Director KAUST Smart Health Initiative have also shared

#### 2<sup>nd</sup> Session titled:

Biotechnology Parks/Clusters: Best Practices and Future Trends chairman: Dr. Abdelali Haoudi, Summit vice chairman, Head R&D Strategy & Business Development, managing director, Medical Biotechnology Park, KAIMRC. Dr. Haoudi stated that "We are now witnessing the dawn of new era where we can no longer look at biomedical R&D centers separately from healthcare innovation centers and Biotechnology enterprises. The current COVID19 global pandemic has raised a serious alarm that the existing Biotech and Biopharma is still facing major challenges to rapidly and effectively cope with global health pandemics. Therefore, our proposed Riyadh Global Biotech Summit will bring together taught leaders in the field to push the

boundaries of our existing thinking and practice and propose innovative models that will impact the country, the region and the rest of the world with direct impact on health and economy." Dr. Haoudi also mentioned that "the global summit comes as a continuation of a national vision on how to diversify the economy of this country at the heart of this vision is knowledge based economy". He added "the program has 9 session, looking at the choice of the sessions is like starting the whole journey of building a strategy for a successful medical biotechnology, how to build infrastructure, and what does it take to have a successful, vibrant, manufacturing plans in numbers of areas relevant to the country including but not limited to vaccine development, biotherapeutics and the science behind it".



- Dr. Horst Domdey, Chief Executive Officer, Biotech Cluster Development GmbH, who shed light on 'the Munich Biotech Cluster: Turning Science into innovation'. Dr. Horst gave a number of lessons that can be learned from the past 24 years, he mentioned "Cluster management can learn from best practice as well as from bad practice of other cluster, and innovation driven science and clinical excellence are very good prerequisites for the formation of life science cluster".
- Dr. Mehmood Khan, Chief Executive Officer Hevolution Foundation talked about 'Medical Biotechnology as a strategic pillar for KSA Health and Economic Development' he stated that: "Saudi can leverage its competitive advantage to build a successful biotech ecosystem."
- Dr. Richard Smith, Chief Operating Officer Rockland Immunochemicals, Inc. USA discussed 'Driving Biotech Success with Agile Entrepreneurs', Dr. Smith mentioned " as an entrepreneur you should think about biotech ecosystem assessment, such as: what assets are available? Why is the ecosystem attractive? What is unique that delivers on advantage?".
- KAIMRC's Head, Developmental Medicine, Chairman Innovation and Entrepreneurship Dr. Manal Alaamery highlighted innovation and intellectual property at KAIMRC/KSAU-HS/MNG-HA. Dr. Alaamery stated "we are doing good in Saudi Arabia and we need to be globally through more improvement and more innovations".
- Mr. Walter Klemp Chairman and CEO Moleculin Biotech, Inc. who shed light on Structuring Incentives to Drive Biomedical Sector Growth.

#### The 1st day of the summit ended with the 3rd session titled:

Biotechnology Companies: Global Benchmarking and Partnerships. Chairman: Dr. Ronald DePinho, MD Anderson Cancer Center. Included a number of exceptional speakers.

- Dr. DePinho, discussed 'Sporos Bioventures: A new model for biotech creation and development', he expressed his feeling towards the kingdom's approach in supporting the biotechnology industry, he mentioned "I am so glad that the leadership of KSA has embraced the concept of catalyzing and supporting biotech industry because it plays a truly essential role in converting knowledge into things that can be really help patient who are suffering from today's diseases". He also expressed his graduated saying "Thank you on behalf of all the patients for your interest in catalyzing further innovation in Saudi Arabia, the Middle East and around the world".
- Chief Executive Officer of Johns Hopkins University, USA Dr. Paul Rothmann who shed light on How Biotech and Academic Research Institutions Can Work Together to Foster Innovation. Dr. Rothmann mentioned "this past year we've attracted \$1 billion in venture capital investment and transmits at Johns Hopkins medicine, today we have 1,800 technologies available for licensing, 244 products in development, 260 technologies in the market with 173 start-up companies in our portfolio, which is truly something we're proud of".
- Business Editor of Nature Biotechnology, Mr. Brady Huggett covered How Bioentrepreneurship Works.
   He started that " from the 80s and 90s there's been a general growth of the biotech companies in the US, culminating in the genomics bubble in 2000. Any company that was even considered genomics was getting great valuations from venture capitalists."
- Dr. Eric Kmiec, Founder and Director The Gene Editing Institute Helen F. Graham Cancer Center & Research Institute Christiana Care Health System highlighted The Gene Editing Institute at Christiana Care, an innovation accelerator in a regional healthcare system.

• Executive Director & Head of Emerging Innovations of AstraZeneca Dr. Hitesh Sanganee talked about 'Open Innovation and Entrepreneurship', he mentioned" we really think that Al-enabled big data can help accelerate drug discovery in the future. "







During the 2nd day of the that Riyadh Global Medical Biotechnology Summit, Senior Vice President & Head Global R&D, BAYER AG Dr. Philip Larsen gave a Keynote Presentation on Biotechnological advances in 'cardiovascular disease management: from a one to a billion', Moderated by: Mr. Markus Peterseim.



#### 4th session titled:

Medical Biotechnology, Digital Medicine and Clinical Trials. Chairman: Dr. Ali Alessandro Ayach, Alvarez & Marsal, featured remarkable speakers including:

- KAIMRC Chairman of Research Office and Director, Clinical Trial Services, Dr. Majed Al Jeraisy who covered Biotechnology and Clinical Trials, and the Saudi Clinical Trials Enterprise, a national initiative sponsored by NIDLP. Dr. Jeraisy mentioned "Saudi Arabia has launched The Saudi Clinical Trials Enterprise, which is national initiative as part of Saudi Vision 2030 and sponsored by NIDLP with an eye to develop and the capability and capacity of clinical trials in the Kingdom to attract clinical trials that has an impact on health care and the economy".
- Dr. Ali Al Qarni Head, KAIMRC- Eastern Region Deputy Executive Regional Director-Medical Services, MNGHA who shed light on Opportunities and Challenges of the Real World Evidence in the Era of Digital Health.
- Professor Global Health Systems, Director of Global Health Systems Cluster Harvard University, USA Dr. Rifat Atun discussed 'creating an ecosystem to harness digital and biotech innovations for precision health'.

He highlighted the meaning of precision medicine, "precision medicine interventions for individuals and it has immense benefits."

particular warrant our attention? It is a very deadly disease; heart

failure is actually more deadly

than most cancers".

- Dr. Lynda Chin, President and Chief Executive Officer Apricity Health LLC, USA talked about 'Re-imagine Patient Access to expert cancer care in the Era of digital Medicine', she mentioned: "Digital health tools are being developed and deployed to help both patients and healthcare providers along the recovery journey".
- Senior Director Strategy and Performance Improvement Alvarez & Marsal Dubai, UAE Dr. Ali Alessandro Ayach discussed 'Acceleration clinical trials in the digital era and commercialization of outputs', he mentioned "in the past 5 years, there has been great improvement in clinical trials inside Saudi Arabia, but there are still room to grow when it comes to the commercialization of its outputs".

#### 5th session titled:

Biosimilars and Biotherapeutics Development and Manufacturing. Chairman: Dr. Joshua LaBaer, The Biodesign Institute. He highlighted 'New Methods for Cell-Free Presentation of Proteins for Functional Analysis', Dr. LaBaer mentioned that "Developing a method focus on call-free presentation of proteins can reduce the chance of missing a proper diagnosis for breast cancer". The session incorporate a number of exceptional speakers including:



- President and Chief Scientific Officer Abzyme Therapeutics LLC, USA, Dr. Hiep Tran who talked about 'Natural camelid single domain antibodies as potential alternatives to monoclonal antibodies in the next generation immunotherapy'.
- Dr. Fouad Atouf, Vice President, Global Biologics US Pharmacopea, USA who discussed Challenges and Opportunities of Developing Cell and Gene Therapies.
- Managing Director Alvarez & Marsal Frankfurt, Germany, Mr. Markus Peterseim who shed light on Creating a Biosimilars and Biotherapeutics CDMO Hub. Mr. Peterseim mentioned "older populations (50+year) is the fastest growing population segment in Saudi Arabia and it is expected to grow by nearly 4% by 2025, which increase demand for advanced treatments".





Wrapping up the 2nd day with 6th Session titled Vaccine Development and Manufacturing Chairman: Dr. Jamila Louahed, GSK featured remarkable speakers including:

- Senior Medical Affairs Director, Pfizer KSA Dr. Hani Al Hashmi talked about 'Biotechnology in Vaccine Development', he stated that "New biotechnology may result in therapeutic vaccine which are effective for all diseases, meaning that they may span beyond infectious diseases".
   General Manager, Commercial Enterprise Solutions, Cytiva Mr. Sven Frie discussed 'Cytiva and Vaccine Bioprocessing' he mentioned Cytiva's vision which is to bring access to life-changing therapies to the
- Dr. Jamila Louahed Vice President and Head Global R&D GSK, highlighted 'Innovation in Vaccines', she mentioned "Vaccines have never been as important as they have been in the past two years. A world without vaccine is not a world!". She added on the importance of vaccine development that "2 to 3 Million death prevented per year and 750000 children prevented disability per year

- KAIMRC Vaccine Development Unit Director Dr. Naif Al Harbi shed light on' Vaccine R&D in KSA', Dr. Naif stated "until recently our vaccine efforts in KSA were driven primarily veterinary vaccines, especially after Rift Valley fever and MERS-CoV. So our academic institutions are proactively responding to the national public health needs. He added "spinout ecosystem, GLP animal facilities and cGMP facilities are areas that need to be supported by the national; biotechnology efforts to bridge the gap between academic research products and the pharmaceutical industry".
- Dr. Jon Heinrichs, Associate Vice President and Franchise Head, Sanofi
  Pasteur talked about 'RSV Prevention for All Infants and Children'. He
  stated "RSV is the largest cause in typical years of disease that really
  puts a burden on hospital pediatric intensive care units and physicians'
  offices in the winter months. RSV will infect nearly every child by the
  time they reach two years of age".
- Frie discussed 'Cytiva and Vaccine Bioprocessing' he mentioned Cytiva's vision which is to bring access to life-changing therapies to the world. Mr. Frie stated "we transform human health by advancing and accelerating therapeutics as part of the enabling services and technologies we offer our clients, academia and collaborators". He also mentioned "I appreciate very much the opportunity to speak at the Riyadh Global Medical Biotechnology Summit on the back of our earlier MoU signing with KAIMRC. We are looking forward to engaging in the Kingdom through Saudi Vax and other projects as well, and we are here to support you".

On the 3<sup>rd</sup> and final day of the Riyadh Global Medical biotechnology summit with a keynote presentation on Messenger RNA: a flexible platform for different therapeutic areas by the Senior Vice President, Moderna, Dr. Paolo Martini. Who mentioned "we have been doing a lot of work. Moderna understands how to make MRNA suitable for the human body basically as a drug". The session was Moderated by: Dr. Manal Alaamery.

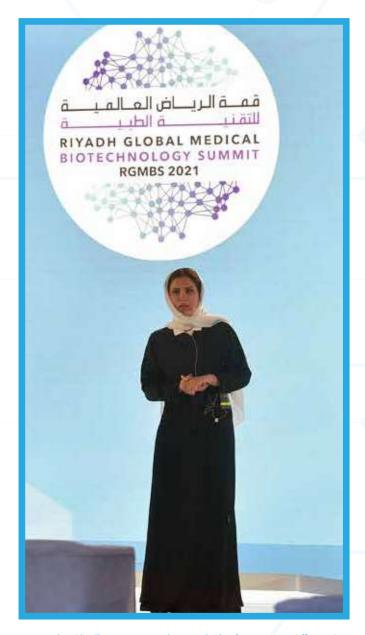


Dr. Martini presented the use of engineered Lipid Nanoparticles (LNPs) and mRNA used in vaccine development, solid tumor therapy, cardio therapy, and treating rare

By modulating the immune reactive surface of the LNPs, Dr. Martini added "Moderna is able to develop tailored delivery vehicles of mRNA to create vaccines, tumor therapeutics and rare disease therapy".

Followed by the 7th session titled MedTech/Medical Devices and Diagnostics, Chairman: Mrs. Bouchra Bensaoud, Danaher. Co-Chairman: Mr. Raymond Berglund, Alvarez & Marsal. featured remarkable speakers including:

- Mr. Iain Sharp-Paul, Vice President EMEA Marketing, Cepheid and Mr. Sherif Harydi General Manager Middle East Cepheid talked about Molecular diagnostics' role in the fight against COVID and beyond. Mr. Iain Sharp-Paul mentioned "Cepheid is a global leader in molecular diagnostics and has been at forefront of the fight against COVID-19. We have distribution in more than 100 countrues and to date we have over 30,000 gene expert systems in around 180 countries all over the globe". Mr. Harydi stated "today Cepheid is well positioned to continue driving several healthcare-associated initiatives, disease prevention programmers and screening policies. We are available in 18 countries in the region with over 1,100 gene exports systems deployed and running, 350 of them are in KSA".
- Senior Director of Strategic Research, Europe, Middle East, and Africa GE Healthcare, Mr. Perry Frederick talked about 'Oncology Care Pathway in terms of Devices and Tracers'. Mr. Frederick mentioned that "in terms of incidence global cancer cases totaled 18 million in 2018, which nearly half of those cases coming from Asia, including the Middle East. Global cases are expected to increase nearly 70% in the period between 2012 and 2030".
- Dr. Ahmed AlZahrani, Director of Healthcare Technology Development, Information Technology Department, MNGHA who shed light on 'MNGHA's response to support the ventilator manufacturing initiatives by the local Small & Medium Enterprises (SMEs)'. Dr. AlZahrani mentioned "KSA leadership provided unlimited support to secure national health by strengthening the healthcare ecosystem's ability to prevent, detect, assess, mitigate, respond to and recover from the COVID-19 pandemic".



- Mr. Elie Chaillot, Vice-President and Chief Executive Officer, GE
  Healthcare, EMEA who covered 'Data and the Future of
  Healthcare in the COVID-19 Era'. Mr. Chaillot stated that "The
  pandemic has led to hope of new, more resilient healthcare
  ecosystem. It has given us a glimpse of the critical changes
  needed to transform healthcare ecosystem".
- Managing Director & Head Healthcare and Life Science, Alvarez & Marsal Mr. Raymond Berglund discussed 'What to consider in localization for manufacturing medtech/med devices - A pragmatic and accelerated approach'. Mr. Berglund mentioned "if KSA wants to advance, it needs intellectual property as a commodity that's driving the country, KSA needs to invest and send out into the world. We know what KSA sends out and how much those commodities counts, intellectual property needs to count as much" he added "when it comes to KSA invention, you've got to compare yourself to the global intellectual property landscape. Globally Saudi Arabia is running in that mid-tier space with 15th place in patents and coming in 60th in industrial designs and 44th in trademark. Mr. Berglund also mentioned We've got Danaher here, We've got GE here. We've got a lot of different companies that have satellite sites in Saudi Arabia. Obviously that means they have trust and belief in KSA's labor force and the work to actually produce products". He added "if KSA wants to advance,

On the 8th session titled Stem Cell Biotechnology and Cellular and Gene Therapy, Chairman: Dr. Miriam Fuchs ,Novartis. included a number of exceptional speakers:

- Dr. Badr Al Ahmari, Director, Hematology Fellowship Program Consultant, Adult Stem Cell Transplant and Cellular Therapy, Department of Oncology, KAMC MNGHA - Riyadh who talked about 'Chimeric Antigen Receptor T cells: lessons from B cell malignancies'
- Dr. Joseph Fraietta, Director of the Solid Tumor Immunotherapy Laboratory, University Pennsylvania (Philadelphia, PA) discussed 'Genetically Enhanced T Cells: Designing, Building Cancer Engineering, and Immunotherapies'.
- KAIMRC Associate Director, Biomedical Research, Dr. Khaled Al Sayegh covered 'Saudi Bank of Induced Pluripotent Stem Cells'. Dr. Al Sayegh mentioned "KAIMRC will start HLA-based banking of human iPS cells to create cell stocks compatible with the Saudi population".
- And Dr. Amin Hajitou, Professor and Chair Targeted Therapeutics, Imperial College London, UK who talked about 'Development of the bacteria viruses, bacteriophage, into a delivery technology for therapeutic genes and DNA vaccines against cancer and other human diseases' Dr. Hajitou stated that "Brain tumors were one of the earliest target for gene therapy but failed due to lack of efficacy of delivery systems".
- From Novartis, Dr. Miriam Fuchs, Global Therapeutic Area Lead, Cell and Gene Therapies, Oncology, Regulatory Affairs, who shed light on The 'Tisagenlecleucel (CAR-T) experience'. She mentioned "Tisagenlecleucel (CAR T treatment) has a sophisticated manufacturing process but promising outcome".

And finally 9th session titled Genomics, Genetics, Gene Editing and Bioinformatics, Chairman: Dr. Paolo Martini, Moderna. Co-Chairman: Prof. Majid Alfadhel, KAIMRC. Featured remarkable speakers:

- Dr. Paolo Martini shed light on 'mRNA therapy for propionic academia: from bench to bedside'.
- KAIMRC Deputy Executive Director, Chairman, Genetics and Precision Medicine Department at King Abdulaziz Medical City Prof. Majid Alfadhel who talked about Genetic and Rare disease program(GARD): an opportunity for orphan diseases biotechnology, Dr. Alfadhel mentioned "We established a genetic newborn screening program which is having utmost importance. More than 50 new genes defects have been discovered and published. 60% of KSA population is consanguineous; and biotechnology companies have an opportunity to invest into and develop therapeutics for rare genetic diseases".
- Dr. Hicham Fenniri, Professor, Departments of Chemical Engineering Bioengineering, Chemistry & Chemical Biology Northeastern University, USA & Chief Scientific Officer, MAScIR Foundation, Morocco covered 'Magnetically Guided Rosette Nanotubes-siRNA Delivery for Cancer Gene Silencing'.
- From PerkinElmer, Inc, Dr. Madhuri Hegde, Vice President and Chief Scientific Officer who shed light on 'Whole Genome Sequencing for Rare Disease Diagnostics'. Dr. Hegde heighted PerkinElmer, she mentioned that "by leveraging a verity of technologies, we can meet testing needs throughout a patient's lifetime". She added "By leveraging a global laboratory network we are able to build an enriched genomics data set from diverse populations across the globe to support, improve and tailored variant interpretation".
- Chairman, infectious Diseases Research Department, Associate Research Scientist, KAIMRC, Prof. Majed Al Ghoribi who talked about 'Empowering Infectious Disease Surveillance using whole-genome sequencing'. Dr. Al Ghoribi mentioned "KAIMRC presented an outstanding setting for viral and AMR sequencing platform, using isolate and clinical data, KAIMRC has now set up a database for COVID19 variants".



## **Biotechnology Partnerships**



#### KAIMRC and SDAIA

An MoU with Saudi Data and Artificial Intelligence Authority (SDAIA) in support of Research collecting and analyzing medical data.









#### **Collaborations Focused On Vaccine Development**

And an MoU with Cytiva, AbZyme, and Rockland for the purpose of strategy development of medical biotechnology.



## KAIMRC, Ministry of Industry and Mineral Resources, and Pfizer

During The Riyadh Global Medical Biotechnology Summit 2021, KIAMRC has signed number of collaborative MoUs with The Ministry of industry and Mineral Resources and Pfizer for the purpose of vaccine development.



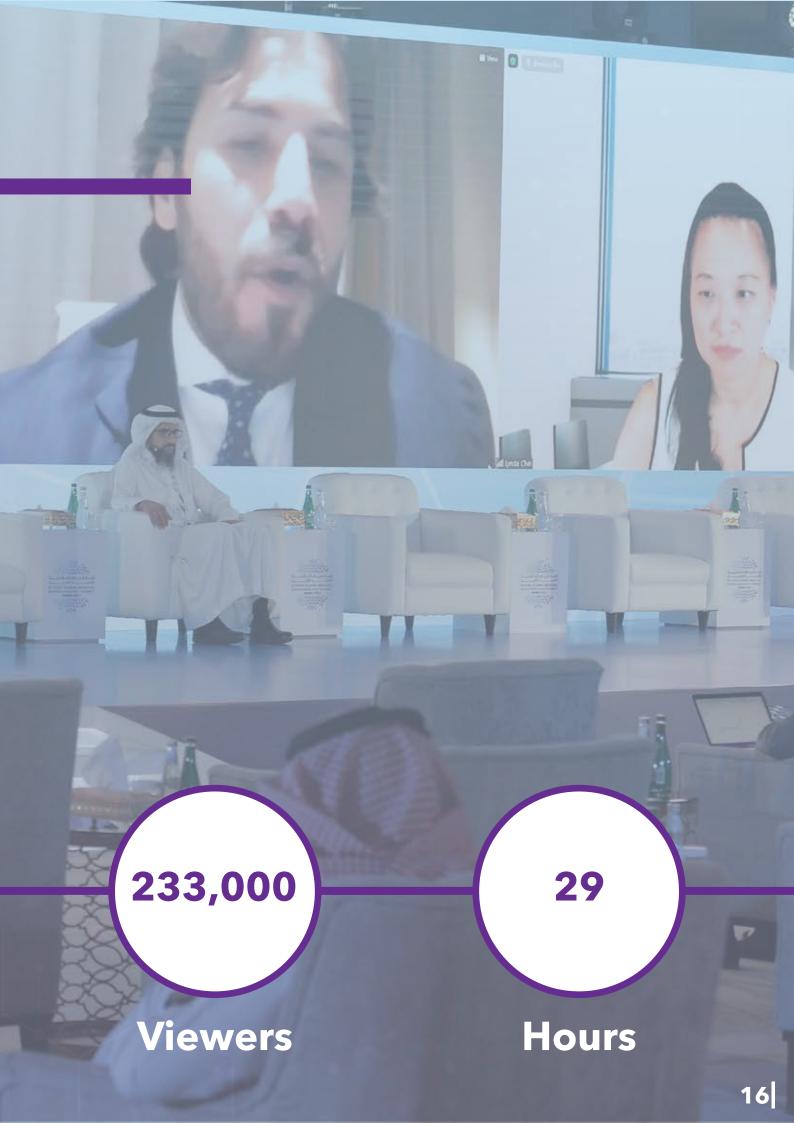
#### MNGHA, Ministry of Investments and AstraZeneca

In addition the Ministry of National Guard Health Affairs has signed an MoU with the Ministry of Investments and AstraZeneca that aims to provide opportunities for the heath sector and local companies to benefit from the latest development within the pharmaceutical industry.

# Let's talk numbers!



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# Social Highlights:

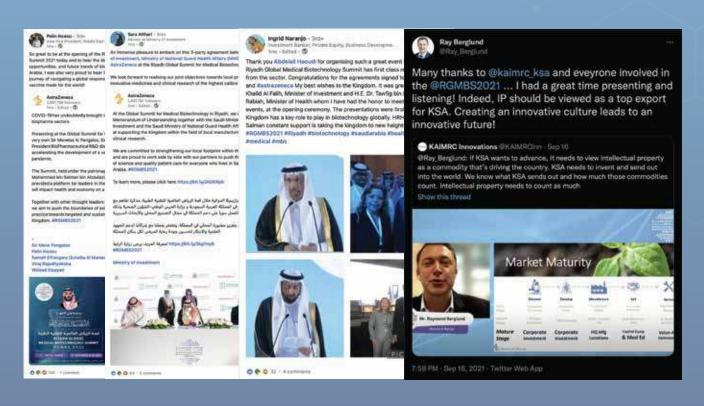
#### **International News outlets:**



#### **Local News outlets:**



#### **Social Impressions:**



#### **Interactions:**









