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KOBRA
KOREA BIO RESEARCH ASSOCIATION

May 27-29, 2026 | Suwon Convention Center, Korea

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KOBRA Conference 2026

Bringing Together Global Leaders in Advanced Biomedical Research

May 27-29, 2026 | Suwon Convention Center, Korea
www.conference.kobra.kr

KOBRA Conference | Day One
Wednesday, May 27
Suwon Convention Center, Conference HALL3

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Session 1 | KOBRA-AIMED Joint Session
The Genomic, Epigenomic, and Transcriptomic Landscape of Human: From Cells to Populations
Organizer Ji Hwan Park (Ajou University, Korea), Jinhyuk Bhin (Yonsei University, Korea)

Anna Trigos
- Peter MacCallum Cancer Centre, Australia

Recurrent intra-tumour heterogeneity is a hallmark of metastatic prostate cancer

Jun Kim
- Chungnam University, Korea

Pangenome-based AI Model Development to Improve Variant Calling Accuracy

Je-Keun Rhee
- Soongsil University, Korea

Learning Generalizable Chromatin Representations from Epigenomic Signals

Young-Jun Jeon
- Sungkyunkwan University, Korea

AI-Powered Cell-Free Transcriptome Analysis for Enhanced Disease Specificity

Session 2 | KOBRA-BK Joint Session
From Mechanobiology to AI: Integrating Biology for Precision Medicine
Organizer Su Bin Lim (Ajou University, Korea)

Joosang Lee
- Sungkyunkwan University, Korea

From Slides to Spatial Omics: Toward Pathology-Based Precision Cancer Medicine

Jinhyuk Bhin
- Yonsei University, Korea

Integrative Cancer Genomics to Decode Tumor Heterogeneity and Therapeutic Vulnerabilities

Balachandran Manavalan
- Sungkyunkwan University, Korea

AI-Driven Computational Frameworks for Biomolecular Function Prediction and Therapeutic Discovery

Chwee Teck Lim
- National University of Singapore, Singapore

From Cell Mechanobiology to Precision Medicine: Enabling Diagnostics and Omics

Lunch

Session 3 | KOBRA-KOGO Joint Session
Scalable Functional Genomics
Organizer Eun Jeong Lee (Ajou University, Korea)

Dong-Jiunn Jeffery Truong
- Helmholtz Munich, Germany

Designing Molecular Tools for Minimally Invasive Interrogation and Perturbation in Mammalian Biology

Hui Kwon Kim
- Sungkyunkwan University, Korea

High-Throughput Library Screening and AI-Driven Design of Gene Editing Therapeutics

Jaewoo Choi
- Yonsei University, Korea

From CRISPR Screens to Therapeutic Vulnerabilities: Mapping Signaling Architectures in Lymphoma

Session 4 | KOBRA-KSBI Joint Session
Somatic mutations in human disease
Organizer Sangwoo Kim (Yonsei University, Korea)

Zinan Zhou
- University of Chicago, USA

Somatic Mutations in Aging and Neurodegeneration

Sangwoo Kim
- Yonsei University, Korea

Identification of mosaic mutations associated with human diseases

Yoo-Jin Ha
- Hanyang University, Korea

Resolving disease mechanisms through rare mutation discovery: complex disease genetics and somatic mosaicism

Junho Kim
- Sungkyunkwan University, Korea

Somatic Mutational Landscape of Intestinal Epithelium in Crohn's Disease

KOBRA Conference | Day Two
Thursday, May 28
Suwon Convention Center, Conference HALL3

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Session 5
Advanced omics approaches for cancer and brain disease diagnostics
Organizer Goonho Park (PathoBrainSeq, USA)

Sungwon Lim
- Imprimed, USA

Beyond Genomics: Using AI to Drive Functional Precision Medicine

Sunghee Yun
- Erudbio, USA

From Silicon Valley AI to Multi-Omics Medicine – Versatile Smart Assays Transform Cancer Diagnostics and Prognosis Prediction Through Cross-Domain Innovation

Goonho Park
- PathoBrainSeq, USA

Development of early precision diagnostics for neurological diseases using blood-based genomic analysis

Hansol Park
- Inocras, Korea

Transforming DNA data into action with whole genome insights

Lunch

Session 6
AI pathology
Organizer Young Nyun Park (Yonsei University, Korea)

Julien Calderaro
- Université Paris-Est Créteil, France

Artificial Intelligence as a co-pilot for pathologists

Long Phi Le
- Harvard University, USA

Enabling Spatial Biology Through AI

Stefano Caruso
- Université Paris-Est Créteil, France

AI-Driven Pathology: A New Paradigm for Prognosis and Treatment Response Prediction

Session 7 | KOBRA-KBioX Joint Session
Decoding Cellular Dynamics: From Single-Cell Multiomics to Functional Mechanisms and Next-Generation Technologies
Organizer Siyeon Rhee (Korea University, Korea)

Dongwon Lee
- Harvard Medical School, USA

Single-Cell Multiomics Analysis to Uncover Mechanisms in Heart Failure

Sangyeon Cho
- Massachusetts General Hospital, USA

Highly Multiplexed Nanolaser Particles for Understanding Dynamic Cellular Heterogeneity

Siyeon Rhee
- Korea University, Korea

Spatially Resolved Single-Cell Mapping Reveals DNA Damage-Driven Fibrotic Zonation in LMNA Cardiomyopathy

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KOBRA Conference | Day Three

Friday, May 29

Suwon Convention Center, Meeting room 304-6

Session 8 | KOBRA - Rutgers University Joint Session

Building trusted AI for Health: Academic-Industry perspectives from Rutgers

Organizer Najwa Borkadi (Rutgers University, USA)

Leslie A. Lenert

- Rutgers University, USA

Biomedical Informatics and Health Artificial Intelligence

Antonina Mitrofanova

- Rutgers University, USA

AI-Driven Systems Oncology: Transforming Cancer Data into Clinical Insight

Yoonjung Joo

- Sungkyunkwan University, Korea

AI-powered analysis of Multimodal EHR-linked DNA Biobank Data for Precision Medicine

Ji-Hoon Jeong

- Sungkyunkwan University, Korea

Connected Health: Towards Brain-Computer Interfaces and Medical Intelligence for Transparent Clinical Deployment

Session 9 | KOBRA - Rutgers University Joint Session

Barriers to Breakthroughs for Effective CNS Repair: Translating Neuroengineering and NanoTherapeutics

Organizer Ki-Bum Lee (Rutgers University, USA)

Ki-Bum Lee

- Rutgers University, USA

A Bioinspired Nanotechnology Strategy for CNS Repair: Combinatorial Drug, Gene, and Cell-Based Therapy

Letao Yang

- Tongji University, China

Engineering Insoluble Cues for Cell Fate Control and Therapy

Jae Young Lee

- Gwangju Institute of Science and Technology, Korea

Mesenchymal Stem Cell-Laden Double-Network Hydrogel Nerve Guidance Conduits for Peripheral Nerve Injury Repair

Lunch

Session 10 | KOBRA - KAI Joint Session

Cellular Stress and Immune Microenvironment Modulation for Next-Generation Immunotherapy

Organizer Young-Min Hyun (Yonsei University, Korea)

Yuting Ma

- Chinese Academy of Medical Sciences & Peking Union Medical College, China

Cancer cell-intrinsic UPR factor restricts IFNAR-dependent immunosurveillance by orchestrating the ER-mitochondria crosstalk

YunJae Jung

- Gachon University, Korea

Role of CD14-expressing macrophages in inflammatory bowel disease

Byoung Choul Kim

- Yonsei University, Korea

Probing the Mechanical Underpinnings of Cancer Metastasis and Immune Evasion with Single-Molecule Precision

Jiwoong Choi

- Kyungpook National University, Korea

Photosensitizer-Based Supramolecular Nanomedicine for Cancer Immunotherapy

Session 11 | KOBRA - GTRC Joint Session

Advanced Biotechnology and Gene-Cell Therapy Delivery Technology

Organizer Junho Byun (Sookmyung women's University, Korea)

Stefaan De Smedt

- Ghent University, Belgium

Multi-Disciplinary Approaches for Precision Delivery of Bio-Therapeutics

Jong Oh Kim

- Yeungnam University, Korea

Binary mineral nanoparticles enable intravascular delivery of metal ions to tumors for metalloimmunotherapy

Sejin Son

- Inha University, Korea

Development of Immunomodulation and Nanomedicine Technologies for Precision Medicine

Dongyoon Kim

- Yonsei University, Korea

Lipid nanoparticle-mediated metabolic reprogramming of dendritic cells for mRNA vaccines