

PROFILE



Korea Institute of Toxicology
A Global Toxicology Research Institute Advancing Public Health and safe society

Advanced Biotechnology Artificial Intelligence (AI)



Information

Main Contact	+82-42-610-8335
Website	https://www.kitox.re.kr/
Purpose of Establishment	We contribute to the advancement of national industries and the improvement of public health and well-being by conducting safety assessment research on chemicals, biological substances, and other materials, developing related technologies, and supporting collaboration among industry, academia, and research institutions.
Main Responsibilities	As a leading research institute in the field of toxicology, we drive safer lives and innovative growth across national industries through toxicological research for human health and the environment and the development of next-generation core technologies.
Planned Recruitment	Permanent Positions: 2 / Fixed-term Positions: To be determined

Contact

Department	Human Resources Development Office
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Key Achievements

24hpf Tail coiling movement assay

48, 72hpf Touch-evoked response assay

96hpf Locomotor activity assay

문동신경, 근육세포 등 기초 운동성 관련 신경독성평가

감각신경, 운동신경 관련 신경독성평가

평행강막, 자유방형 행동 기반 신경독성 평가

HepaRG, HUVEC co-culture model with enhanced functionality

3D bioprinting

Artificial tissue mimicking liver microstructure

Implantable patch construct for liver therapy

Standardized model through automation and mass production

6-PPD (고구 산화 방지제)

생체 배아 임플라נט

세포 사멸 증가

미토콘드리아 손상 증가

SKN-1

생장 속도 둔화

미토콘드리아 손상 증가

산소 소비량 감소

수명 감소

Using C. elegans, we linked 6PPD to mitochondrial dysfunction and shorter lifespan; heart and lung toxicity confirmed; JHM (IF 11.3), EES (IF 6.1).

Research & Project List

- Development of AI-based Precision Toxicity Prediction Technology

Develop AI-powered precision toxicology technology to predict individual liver toxicity using chemical structure, toxicity data, and human genomic information.
- Development of Tox-Twin, a safety assessment technology focused on human development

Develop Tox-Twin, a next-generation safety assessment technology centered on human development, as an alternative to nonclinical animal testing.
- Development of Toxicity Assessment Technologies and Toxicological Research for Chemicals in the Living Environment

Develop toxicity assessment technologies for environmental chemicals using human embryonic stem cells, organoids, and fish embryos.
- Research and Development of Inhalation Toxicity Assessment Technologies for Inhalable Risk Factors

Development of an integrated hydrogen town-type energy system capable of renewable energy-based hydrogen production, storage, and utilization