Company Brochure · 2025

Read Data, Lead Big

Data Bio Company, Insilicogen, Inc.

INSILICOGEN

www.insilicogen.com

Contents

Creating a New Value Chain through Bioinformatics and Artificial Intelligence

Our company has grown by effectively managing, analyzing, and sharing diverse biological data. Insilicogen, Inc. is preparing for innovations that will lead the future under the vision of becoming a “Data Bio Company.”

We are deeply involved in every stage—generation, collection, storage, and analysis—of the data lifecycle, setting the standard for big data and continuously evolving alongside diverse data worldwide.

Read Data, Lead Big Data Bio Company, Insilicogen, Inc.

Insilicogen, Inc. celebrated its 20th anniversary in 2024. Over the past two decades, we have been building bio big data, and now, based on this experience and technological expertise, we aim to lead the innovation of the data-driven bio industry.

In collaboration with various institutions such as the Ministry of Science and ICT, the Ministry of Health and Welfare, the Ministry of Agriculture, Food and Rural Affairs, the Korea Disease Control and Prevention Agency, and the Rural Development Administration, we have built omics big data systems including BIGHUG, BLIMS, CODA, CRIS, CowScan, KAHIS, MAGIC, MBDC, MEE, NABIC, ODFM, OREO, and RRM.

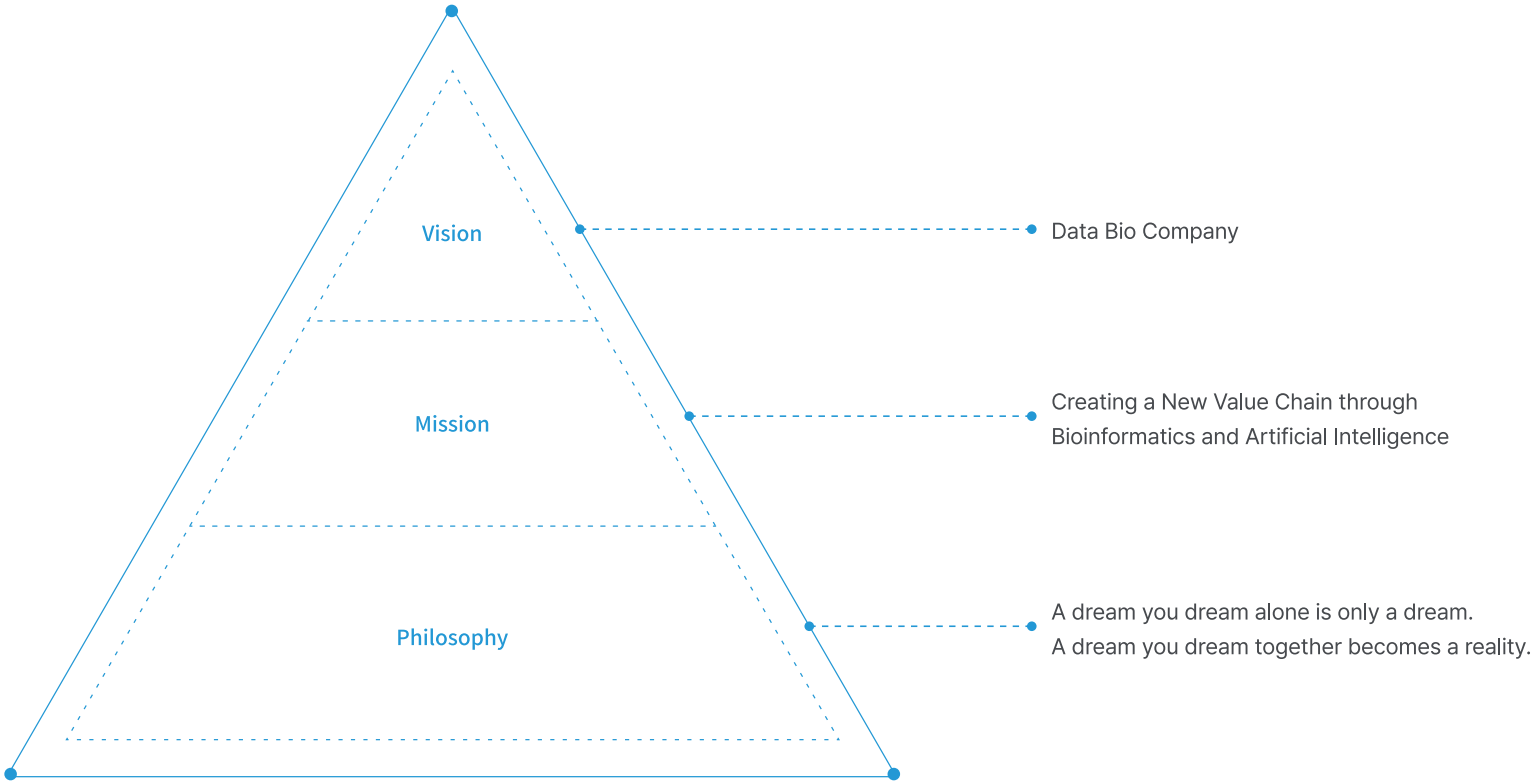
Building a database is an opportunity to understand where the original data is generated, how it is utilized, and uncover the deep meaning hidden within it.
While countries and companies continue to produce bio data,
data that is not standardized inevitably has limited usability.

At 人Co, we focus on standardizing these data, managing them systematically, and integrating AI and big data analysis technologies to create better research environments. Based on the accumulated experience in data production, archiving, modeling, and analysis over the past 20 years, we will build a more efficient and productive bio big data ecosystem and lay the foundation for the industry.

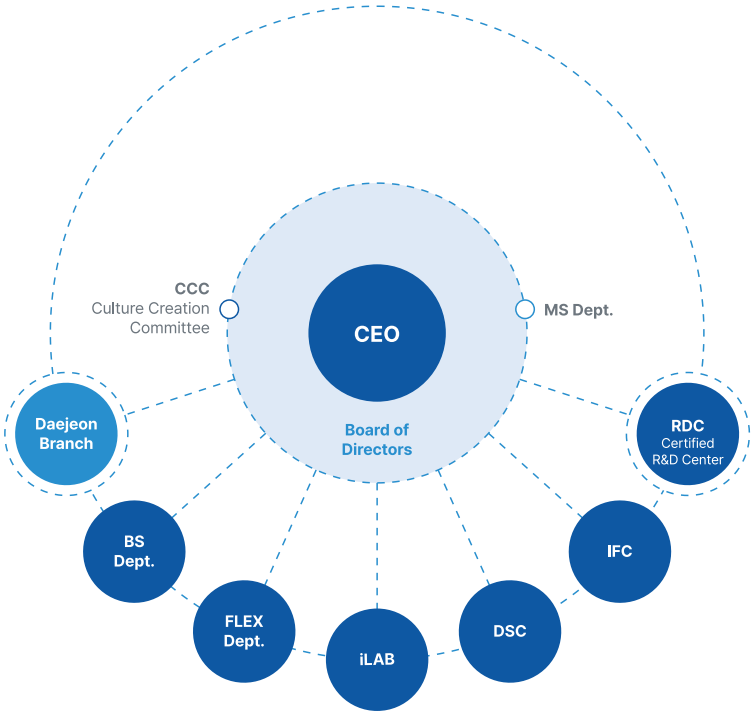
As always, Insilicogen, Inc. will continue to focus on placing people at the center and striving for technological advancement.
Your interest and support will be appreciated.

CEO of Insilicogen, Namwoo Choi

人Co is an Insilicogen's core brand value. It represents our aim to create our own corporate culture with the help of people, computer technology, and through considerate communication.



Horizontal communication and creative culture guarantee diversity



iLAB

insilico Lab

iLAB, your customized bioinformatics partner, provides everything you need in the lab using our techniques and know-how obtained from years of experience and consulting various solutions.

RDC

R&D Center

[Selected as an excellent corporation R&D Center by the Ministry of Science and ICT for two consecutive times]

Beyond the combination of coded biological data and algorithms, RDC is providing the consultation for the Bioinformatics analysis of NGS-related data for animals, plants, and microbes.

BS

Bioinformatics System Department

BS leads knowledge informatization by blowing life into information and putting it into the system.

FLEX

FLEX Department

FLEX will offer practical customer values utilizing a successful digital business model by integrating planning, marketing, UX/UI, Front-end and Back-end.

DSC

Data Science Center

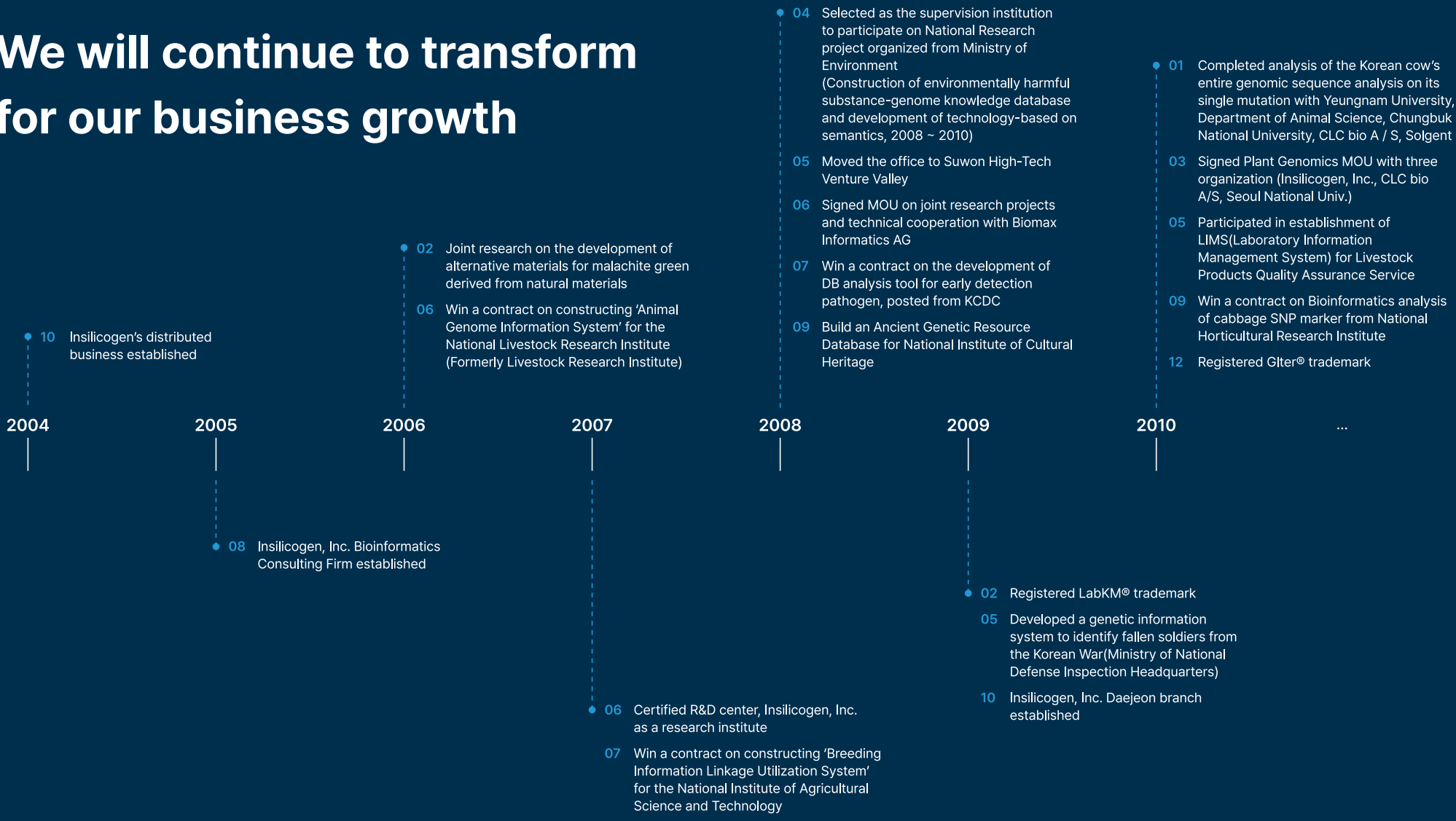
DSC provides practical values for the basic science, medical science, plant/animal breeding and microbiome. DSC provides integrated data science services from professional consulting to data analysis and platform development.

IFC

insilico Food Center

IFC offers FoodTech services integrated with Artificial Intelligence (AI) and Internet of Things (IoT) by developing technology that provides personalized diet recommendations and tailored food suggestions utilizing bio-food big data.

We will continue to transform for our business growth



2011

- 01 Ontle™(Web-based Ontology Editing), international patent registered
- 01 Signed MOU on cultivating prospective bioinformaticians(School of Life Systems, Soongsil Univ.)
- 06 Selected as a Management Innovation Certification Company
- 12 Selected as a technology innovation business by Ministry of Knowledge Economy(2011~2016)

2012

- 01 Patent for Ontle™(Web-based Ontology Editing) registered
- 11 Signed academic exchange agreement with 6 Universities(Yeungnam, Hanyang, Chungbuk, Chonbuk, Sungkyunkwan, Sangmyung)

2013

- 07 Patent for KinMatch™ (DNA search method) registered
- 10 Selected as a special research center from military manpower administration for those who need alternative military service
- 11 Executed ICT fusion contents utilization system and information standardization project based on traditional food history of KFRI and scientific evidences (Bio Big Data Business)

2014

- 01 Joint registered pepper gene sequencing analysis on 'Nature Genetics'(The Next Generation Bio-Green 21, organized by the RDA)
- 03 Registered as a research and development service
- 08 Selected as a prospective public data providing company
- 12 Moved to Heungdeok IT Valley

2015

- 01 Certified as a small-giant company by Ministry of Employment and labor
- 09 Incorporated Insilicogen's Daejeon branch
- 10 Organized Hanwoo Genome Symposium (sponsored by the Ministry of Agriculture, Forestry and Fisheries Technology Planning and Evaluation, Gyeongsangbuk-do)
- 11 Increased capital to 200 million won
- 12 Opened 人CoFLEX

2016

- 02 Selected as an excellent management company designated by the Military Manpower Administration (Awarded from Small and Medium Business Administration in Gyeonggi province)
- 07 Registered a domestic patent on developing traitchemical network-based model for providing personalized trait-specific dietary information

2017

- 03 Selected as a sincere taxpayer in the year of 2017
- 08 Selected as the best-service company by Korean Credit Guarantee Fund
- 11 Registered trademark iF(insilico Food)

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2018

- 01 Selected as a youth-friendly small company in the year 2018(Ministry of Employment and Labor)
- 03 Signed MOU on building a big-data based, customized service platform(Kwangdong Pharmaceutical Co.,Ltd.)
- 12 Received a certified award from Ministry of Oceans and Fisheries(Business on building National Fisheries Biointegration System)

2019

- 01 Signed MOU on building the ecosystem of healthcare healing convergence business((Re)GSIPA)
- 04 Proceeded a workshop on animal genetic big data platform based on IncoGWAS at the RDA & NIAS (Opened Event)
- 11 Registered domestic patent for a target gene screening method and device for multi-omics data and survival analysis
- 12 Received a certified award from Ministry of Oceans and Fisheries

2020

- 01 Selected as a youth-friendly small company(Excellence in work life balance)
- 03 Registered a domestic patent for human body type and metabolic susceptibility SNP marker and diagnostic information provision method
- 12 Received a minister award (Ministry of Agriculture, Food and Rural Affairs)

2021

- 01 Selected as a youth-friendly company (Above-average Salaries in the industry/ Excellence in Work-life Balance)
- 06 Selected as an excellent corporation R&D Center by the Ministry of Science and ICT
- 06 Selected as an outstanding small and medium sized company in 2021 (Contributing to the growth of the industry)

2022

- 01 Selected as a youth-friendly company (Above-average Salaries in the industry)
- 04 Signed a contract on digital breeding technology development business with Korea Institute of Planning and Evaluation for Technology in Food (Ministry of Agriculture, Food and Rural Affairs)

2023

- 01 Selected as a youth-friendly company (Above-average Salaries in the industry)
- 07 Registered a domestic patent on developing camera-integrated tenderloin imaging device
- 11 The 28th Agricultural Day : Presidential Commendation Award

2024

- 01 Selected as Youth-Friendly Small and Medium Enterprise (Outstanding Work-Life Balance)
- 06 Selected as an excellent corporation R&D Center by the Ministry of Science and ICT for two consecutive times
- 06 Appointed as a member of the Presidential Committee on Agriculture, Fisheries and Rural Policy – special committee on bioeconomy
- 08 Registered a domestic patent for system for selection of genetic markers and method for breed identification
- 12 Selected as a 2024 truly excellent SME ("Cham! Enterprise")

Beyond collaboration, we build partnership for mutual growth!

Through real-time business cooperation, Insilicogen, Inc. improves the product development and services with the leading bioinformatics and IT group.

Data Production

DNA Link
LabGenomics
Macrogen
BioCore
Seoul Clinical Laboratories
Celemics
Seasun Biomaterials
CJ Bioscience
Ajou University Medical Center
Weedahm Oriental Hospital
SFC

Database & Hardware

Mutecsoft
Daewon CTS
ThinkTek
Zinion
Misoinfo
Naver
Dell Korea
Oracle Korea
Intel Korea
IBM Korea
Lenovo Korea
Amazon Korea

Data Analysis

Biobase(QIAGEN)
BioBam Bioinformatics S.L.
Biomax Informatics AG
CLC bio(QIAGEN)
Gene Codes Corporation
geneXplain GmbH
Ingenuity(QIAGEN)
OmicSoft Corporation(QIAGEN)
Petagene
ThermoFisher Scientific Korea
Agilent Technologies Korea

Sales & Marketing

Qiagen Korea
ThermoFisher Scientific Korea
HanDok
Bioplus
Ventech Science
Dawinbio
Pigenomics
Eloombio
Hanall
Bion-tech

Education

Gachon Univ.
Kangwon National Univ.
Konkuk Univ.
Kyung Hee Univ.
Sangmyung Univ.
Sungkyunkwan Univ.
Sejong Univ.
Sookmyung Women's Univ.
Soonchunhyang Univ.
Soongsil Univ.
Ajou Univ.
Yeungnam Univ.
Chung-Ang Univ.
Chonnam National Univ.
Jeonbuk National Univ.
Chungnam National Univ.
Chungbuk Univ.
Hanyang Univ.

We provide integrated bioinformatics services that support researchers in effectively utilizing data, from production, analysis, and management to training.

We support researchers in analyzing and utilizing data more precisely and efficiently based on bioinformatics technology. We offer multi-omics data analysis services, including NGS-based genomics, transcriptomics, and proteomics, and enhance the precision of bioinformatics research through customized services tailored to research objectives.

Additionally, we provide an integrated solution combining bioinformatics software, consulting, and training, enabling researchers to directly analyze and utilize data.

By integrating bioinformatics, big data, and AI technologies, we will continue to support researchers in building the optimal analysis environment and conducting more accurate bio research.

Analysis | Solution | Education | SI

Analysis

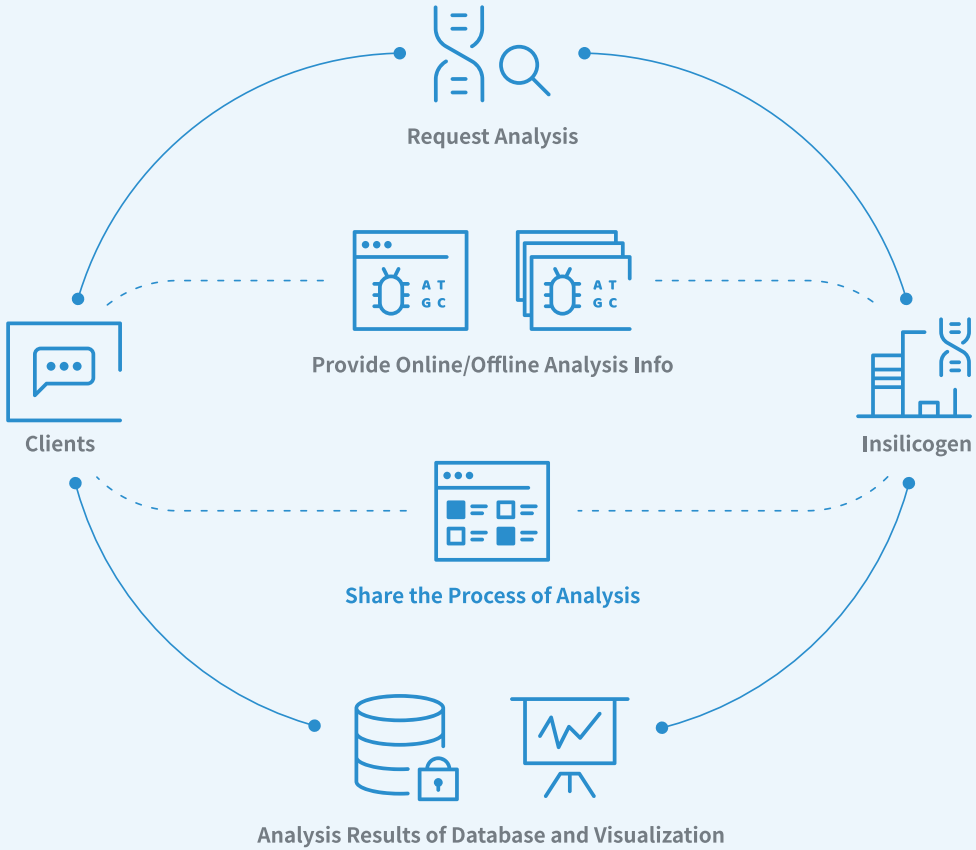
Domestic and overseas experts provide fast and reliable customized bioinformatics analysis services.

We provide bioinformatics analysis services based on NGS (Next-Generation Sequencing), covering all areas of life sciences, including genomics, transcriptomics, and variant analysis. We propose methodologies tailored to the client's needs and objectives, and engage in discussions with the client based on the results.

With over 60 bioinformatics specialists and collaboration with international partners, we offer services optimized for the client's goals through bioinformatics analysis pipelines and knowledge built over many years. Experience a comprehensive service, from interpreting complex existing data to exploring specialized new research areas.

Analysis of 500TB raw data in decoding 70 genomes

Korean beef, abalone, flatfish, rockfish, red pepper, sweet potato, cucumber, red seabream, mushroom, etc.



HUMAN

Human disease association analysis, gene network and molecular mechanism research

ANIMAL & PLANT

Gene variation and expression analysis related to useful traits

MICROBIOME

Genomics projects, gene structure and function analysis, metagenome analysis

Transcriptome

01 Differentially expressed gene network analysis in human muscle for identifying intervention markers to prevent sarcopenia caused by aging
02 Initial response on protein medicine in human PBMC
03 Transcriptome profiling for human sepsis
04 Human brain tumor & senescence transcriptional association study
05 Transcriptome and Pathway analysis on the 'Korean beef'
06 Genetically modified mouse(GEM) RNA-sequencing
07 Discovery marker from Equus ferus caballus Transcriptome analysis
08 Comparative transcriptomics between two Haliotis discus subspecies
09 De novo transcriptome assembly of Frankliniella occidentalis
10 piRNA/miRNA/small RNA Expression profile of Chicken
11 Establishment of the EST information of Korean domestic canine
12 Transcriptome analysis and discovery of novel AMP on Scolopendra subspinipes
13 Discovery novel AMP and transcriptome analysis on the cockroach
14 De novo transcriptome and DEG/pathway analysis on Valeriana fauriei
15 Transcriptome profiling for marine fish with bacterial infection
16 De novo transcriptome and functional DEGs/pathway analysis on the grass
17 Leaf color gene expression profile on the rice
18 Gene expression profile of the radiation effect on Arabidopsis thaliana
19 Panax ginseng ESTs analysis
20 De novo transcriptome assembly and DEG analysis on the Bostrychia
21 Gene expression profile of Pleurotus ostreatus by developmental stage
22 Gene expression difference between asexsual and sexual reproduction of the Fusarium sp

Single Cell Analysis

01 Single-cell transcriptomic analysis of LPS-induced acute lung injury alleviation mediated by low-dose radiation therapy

Variation

01 Exploration of genetic variants associated with cerebrovascular diseases based on KoGES GWAS analysis
02 Discovery of the genetic factor and mechanism for Papaver petal color
03 Comparative genomics for HIV
04 Identification of prediction markers for Platycodon grandiflorus
05 Discovery of the early diagnostic markers of degenerative disease of a house dog
06 Korean breast cancer WES analysis
07 Discovery breed-classification markers of Chestnut
08 Haliotis discus hannai(abalone) population study
09 Undaria pinnatifida population study
10 Discovery of Functional Gene and variant on 'Korean beef'
11 Variant analysis among Traditional chicken strains
12 Coturnix japonica variant analysis among subspecies
13 Caenorhabditis elegans comparative genome analysis using variants
14 Methylation/mRNA/miRNA chip analysis on the breast and stomach cancer
15 Variant analysis on Rice strains and discovery novel gene discovery
16 Cabbage SNP marker selection
17 Variant analysis among Chili pepper strains
18 Discovery of the strain identification marker of Lettuce
19 Discovery of the origin identification marker of milk vetch root
20 Discovery of the species identification marker of Brucella

Comparative genomics

01 Genome-enabled discovery of anthraquinone biosynthesis in Senna tora
02 Expansion of alginate, ferredoxin, and transporter related gene families led to the evolution of brown algae in the Stramenopiles.
03 Chromosome-Scale Genome Assemblies of Two Korean Cucumber Inbred Lines.
04 Pangenome analysis with Enterococcus

Genome

01 Powdery mildew (fungus) genome analysis
02 Senna tora genome analysis
03 8 fishes genome project (Epinephelus akaara, Thamnaconus modestus, Misgurnus mizolepis, Anguilla japonica, Hypomesus nipponensis,Theragra Chalcogramma, Platichthys stellatus, and Amphiprioninae)
04 Development of liquid biopsy NGS pipelines and clinical reporting system
05 Seawater/Freshwater Bivalvia genome project
06 Haliotis discus hannai genome analysis
07 Trombiculidae, factor of Scrub typhus, genome analysis
08 Coturnix japonica genome analysis
09 Minke whale genome analysis
10 Analysis of the genomic sequence and variant of Chili pepper Cabbage genome analysis
11 Gracilariopsis chorda(red algae) genome analysis , Gelidium vagum(red algae) genome analysis , Undaria pinnatifida genome analysis
12 Xylaria(fungi) genome analysis
13 Cochliobolus miyabeanus(Brown spot disease) genome analysis
14 Phellinus linteus(Fungi) genome analysis
15 Genome analysis for Hansenula polymorpha
16 Comparative genomics among Fusarium subspecies
17 Oplegnathus fasciatus, Sebastes schlegelii, Pagrus major and Chelon haematocheilus genome analysis
18 Scolopendra subspinipes genome analysis

Epigenome

01 Epigenetic response for heat stress in Haliotis discus hannai
02 The multi-omics analysis on 'Korean beef' (RNA/MBD-seq)
03 The multi-omics analysis to discover a genetic effect of the Chinese medicine (RNA/Epic850k)
04 Cancer Stem Cell(CSC) Histone CHIP-seq analysis
05 Mouse WGBS analysis

Solution

We provide optimized analysis infrastructure for research, accelerating the research pace.

We provide infrastructure that allows researchers to perform analysis directly. We supply globally recognized bioinformatics solutions domestically and offer consulting and training to ensure easy utilization by researchers.

Serving 120 institutions and 100,000 customers

CLC Genomics Workbench · Omics Box · HGMD · Ingenuity Pathway Analysis · OmicSoft · QCII

SOFTWARE

Providing software consulting and solutions tailored to the researcher's goals

HARDWARE

Optimized hardware consulting and provision for research environments

Education

The educational program of 人Co is the driving force behind the advancement of bioinformatics.

We provide practical training tailored to the needs of domestic research institutions and companies, fostering talent to lead bio R&D. Experts in computational analysis, genomics, transcriptomics, and programming design customized curricula, offering hands-on training with the latest bioinformatics solutions.

Trained 10,000 professionals across 50 institutions

incoSEMINAR

Regular seminars for sharing the latest bioinformatics trends and technologies

incoWORKSHOP

Professional workshop to improve practical bioinformatics analysis capabilities

incoINTERNSHIP

A hands-on program for training bioinformatics professionals in bio R&D basics

incoEDU

An online bioinformatics education platform offering various courses from basics to advanced levels

KOBIC

Collaboration with Korea Bioinformation Center (KOBIC)

SI

Leading the informatization of knowledge that breathes life into information within the system

Based on over 20 years of experience, Insilicogen's system integration business offers platforms that maximize the utilization of research data, including genomics and omics data integration, bioinformatics analysis, and ontology-based archiving.

We collaborate with research institutions and companies to build bioinformatics platforms that enhance data quality and reliability, improving research productivity and efficiency through precise data management and systematic analysis.

과학기술정보통신부 · 농림축산검역본부 · 농촌진흥청 · 보건복지부 · 환경부
산업통상자원부 · 중소벤처기업부 · 통일부 · 해양수산부 · 행정안전부 · 질병관리본부 KCDC
농촌진흥청 국립농업과학원 · 환경부 국립생물자원관 · 해양수산부 국립수산과학원 · 경찰청 · 대한민국 국방부
국립해양생물자원관 · 국방부조사본부 · 보훈공단 중앙보훈병원 · 축산물품질평가원
KISTI 한국과학기술정보연구원 · 한국생명공학연구원 · KFRI 한국식품연구원 · KAERI 한국원자력연구원

Built 60 systems across 41 institutions

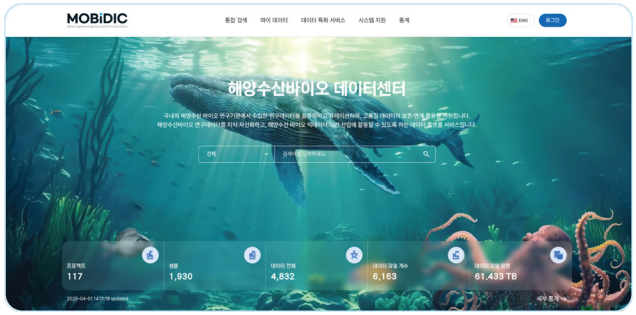
CODA, NABIC, MAGIC, the dementia big data platform AIzNAVi, and genetic information search systems for Korean War casualties and missing children

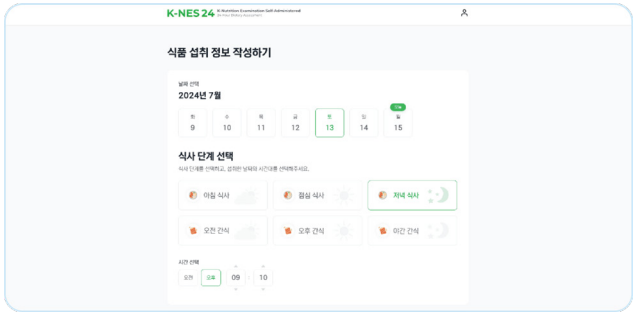
SI(SYSTEM INTEGRATION)

Genomics·omics Data Integration Platform

Standardizing and integrating diverse genomics and omics data to maximize research efficiency

- Ensuring data consistency through standardization
- Supporting data sharing and collaboration in large-scale projects
- Enhancing research efficiency through optimized analysis and search





Data Bioinformatics Analysis System

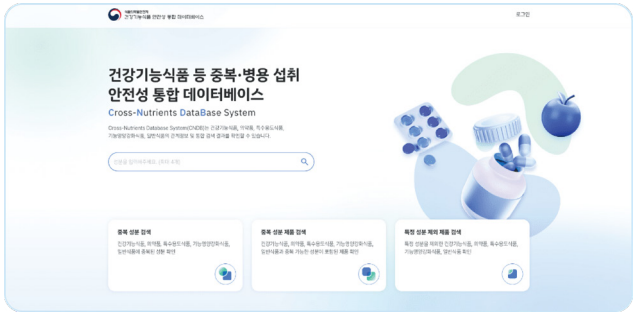
Building a research environment for analyzing integrated research data

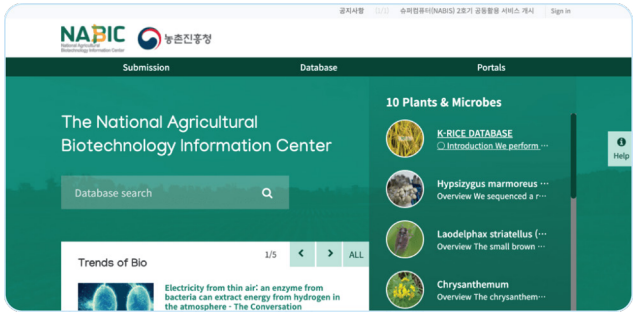
- Enhancing data reliability for accurate analysis results
- Improving data management efficiency through a systematic analysis environment
- Supporting intuitive interpretation through data visualization

Ontology-based Archiving Platform

Organizing and structuring research data semantically to enhance knowledge utilization

- Quick access to desired data through semantic search
- Supporting machine learning optimization and AI-based analysis
- Maximizing utilization by clearly defining data relationships





Construction of an Integrated Information System

[Korea Centers for Disease Control and Prevention] Establishment of Clinical Genetic Management System for Rare Diseases
[Korea Bioinformation Center] Establishment of Quality Management System for Bio data
[National Marine Biodiversity Institute of Korea] Development of Marine Bio Data Center Platform
[National Institute of Fisheries Science] Establishment of national fisheries biological zone integration system
[Korea Atomic Energy Research Institute] Standardization of food and quarantine radiation response data and establishment of management system
[Centers for Disease Control & Prevention] Clinical Omics Data Archive(CODA)
[National Institute of Agricultural Sciences] Agricultural biotechnology-information system(NABIC)
[National Research Institute of Cultural Heritage] Ancient genetic information system
[National Institute of Animal Science] Livestock genetic resource total management system
[National Institute of Animal Science] Animal genetic information system
[National Research Institute of Cultural Heritage] Ancient human bone traits integration information system

Omics Analysis and Management System Development

[Korea Centers for Disease Control and Prevention] Establishment of a multi-omics information analysis system for COVID-19 confirmed patients
[National Research Institute of Cultural Heritage] Ancient life genetics big data DB system
[KISTI - Korean Institute of Science and Technology Information] Web-based multi-omics integration analysis interface
[KISTI - Korean Institute of Science and Technology Information] Next-generation bio research analysis technology for International cooperation research support
[KISTI - Korean Institute of Science and Technology Information] User-customized next-generation genetics data integration analysis system

Genetic Resource Management and DB Development

[Gachon University Medical Campus] Establishment of a medical database for intermediary research related to COVID-19 rest
[Korea Bioinformation Center] Establishment of Genetic Registration and Management System
[Centers for Disease Control & Prevention] Integrated database construction of Kor-GLASS
[Ministry of Food and Drug Safety] Food poisoning bacteria integration information DB system
[Centers for Disease Control & Prevention] Virus gene DB acceleration
[Centers for Disease Control & Prevention] Food poisoning virus surveillance operation system and genetic analysis module development
[Centers for Disease Control & Prevention] Nervous system virus gene DB function improvement and extension
[Animal and Plant Quarantine Agency] Genetic variation management system
[National Institute of Fisheries Science] Marine life single nucleotide information management system
[Centers for Disease Control & Prevention] System for real-time acute diarrhea disease-causing agent DB operation
[Animal and Plant Quarantine Agency] Genetic analysis results and DB management system
[National Institute of Fisheries Science] Life resources integration DB
[National Research Institute of Cultural Heritage] Ancient human skeleton Y-SNP and ancient life genetic information DB system
[Korea Research Institute of Bioscience & Biotechnology] Genetically modified mouse data collecting computing system

Bio-bank System

[VHS Medical Center] Establishment of BioBank and genetic information management system

Record Management System Development

[Shinan-gun, Jeollanamdo] Production traceability management system for Shinan Bay salt prestige
[Namwon Environmentally-Friendly Black Pork Cluster Enterprise Organization] Environmentally-friendly Gowon black pork record management tracking system
[Hankyong National University] Evergreen Hongcheon Korean-beef RFID record information management system
[Korea Institute for Animal Products Quality Evaluation] Smart beef record system advancement
[Chonnam National University] Green Korean-beef population management system
[Hankyong National University] Jangsu country population management system

Analysis and Development of a Large Volume of DB

[KISTI - Korean Institute of Science and Technology Information] Integrated analysis system for biodegradable network big data
[Agency for Defense Development] Unknown agent integrated verification system
[KISTI - Korean Institute of Science and Technology Information] Alzheimer data network navigation program and integrated analysis platform
[KISTI - Korean Institute of Science and Technology Information] Astronomical space data analysis cloud user interface
[KISTI - Korean Institute of Science and Technology Information] Protein interaction and computer simulation integration management system
[KISTI - Korean Institute of Science and Technology Information] Interface for managing virtual cluster
[KISTI - Korean Institute of Science and Technology Information] Resource management portal system for brain imaging information extraction application analysis
[National Marine Biodiversity Institute of Korea] National marine fishery resources genetics information management system

Genetic Inspection System Development

[Ministry of the Interior and Safety] Compulsory mobilization victim DNA identity validation DB
[Ministry of Unification] Genetic information of separated families DB
[KISTI - Korean Institute of Science and Technology Information] Web-based multi-omics integrated analysis interface
[Korea Institute for Animal Products Quality Evaluation] Beef-record laboratory information management system
[Criminal Investigation Command] Genetic information identification system of fallen soldiers from the Korean War(6.25)
[National Forensic Service] Genetic information search system for finding missing children

Sample Management and Genetic Barcode

[National Institute of Biological Resources] Wildlife integrated genetic information system
[National Institute of Fisheries Sciences] Marine life sample-securing DB and management system
[Chungnam National University] Marine life resource donation registry agency Integration management system
[RDA-Genebank Information Center] Agricultural genetic resources barcoding system

In the process of transforming data into knowledge, our AI is here to assist you.

AI plays a key role in biology, with deep learning and large language models (LLMs) revolutionizing data interpretation and research efficiency. Bio big data, including multi-omics, literature, and medical imaging, is analyzed by AI to transform it into meaningful knowledge.

Insilicogen's AI technology supports time-series data, large-scale unstructured data in healthcare and pharmaceuticals, and image analysis, uncovering hidden patterns and insights through structuring and machine learning. Combining LLM and Retrieval-Augmented Generation (RAG) technologies maximizes research efficiency through real-time data interpretation and literature summarization.

We lead innovation in life sciences research with AI-based data analysis, providing optimal AI solutions for precise decision-making.

Semantic Modeling

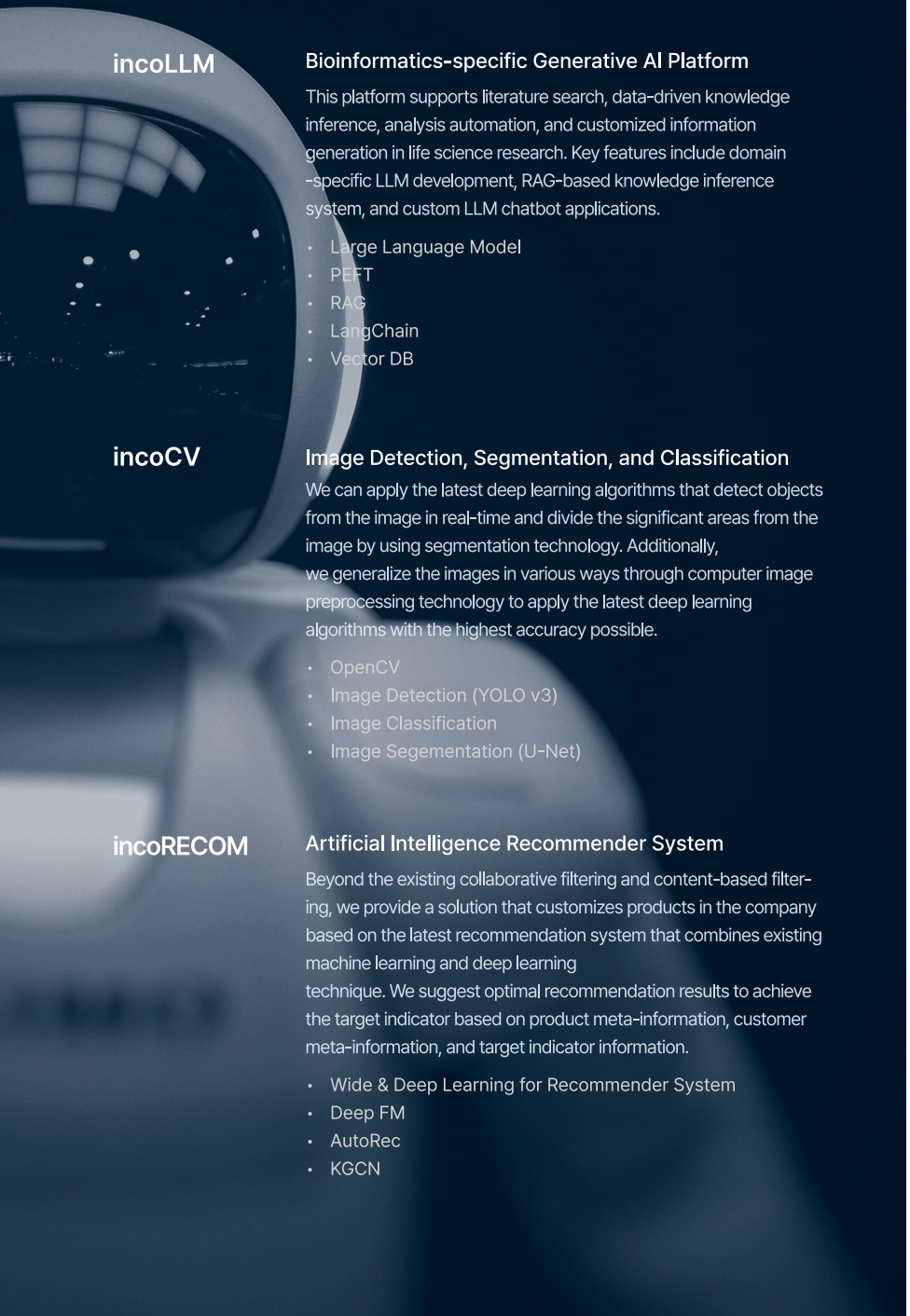
Maximize research efficiency by semantically structuring bioinformatics data and build a standardized data interpretation environment

Machine Learning

Analyze patterns and create predictive models by learning large-scale bioinformatics data such as genomes and transcriptomes

Deep Learning

Processing complex biological data and deriving gene functions using advanced analysis techniques based on neural networks



incoLLM

Bioinformatics-specific Generative AI Platform

This platform supports literature search, data-driven knowledge inference, analysis automation, and customized information generation in life science research. Key features include domain-specific LLM development, RAG-based knowledge inference system, and custom LLM chatbot applications.

- Large Language Model
- PEFT
- RAG
- LangChain
- Vector DB

incoCV

Image Detection, Segmentation, and Classification

We can apply the latest deep learning algorithms that detect objects from the image in real-time and divide the significant areas from the image by using segmentation technology. Additionally, we generalize the images in various ways through computer image preprocessing technology to apply the latest deep learning algorithms with the highest accuracy possible.

- OpenCV
- Image Detection (YOLO v3)
- Image Classification
- Image Segementation (U-Net)

incoRECOM

Artificial Intelligence Recommender System

Beyond the existing collaborative filtering and content-based filtering, we provide a solution that customizes products in the company based on the latest recommendation system that combines existing machine learning and deep learning technique. We suggest optimal recommendation results to achieve the target indicator based on product meta-information, customer meta-information, and target indicator information.

- Wide & Deep Learning for Recommender System
- Deep FM
- AutoRec
- KGCN

Research project

[Korea Disease Control and Prevention Agency] Building a large-scale computing-based AI pipeline and visualization
[Rowan] Establishment of a personalized content-based recommendation system for dementia
[National Institute of Fisheries Science] Establishment of flatfish growth prediction model based on machine learning
[Korea Institute for Animal Products Quality Evaluation] Establishment of a mechanized quality evaluation system for Korean beef based on artificial intelligence
[D.iF] Food object detection and classification by deep learning
[National Research Institute of Cultural Heritage] Establishment of machine learning model to predict termite damage of wooden cultural heritage
[Korea Institute for Animal Products Quality Evaluation] Beef quality estimation by image analysis (Deep Learning) and machine learning
[National Institute of Animal Science] Maker selection for degenerative disease by machine learning
[National Institute of Fisheries Science] Development of machine learning model for prediction of high temperature tolerance for abalone
[Ministry of Environment] Construction of environmentally hazardous material-genomics knowledge-based and Development of semantics-based technology
[Ministry of Environment] Excavation of indicators for heavy metal toxicology using toxicogenomics
[Food Industry Technology Support Center] Coordination analysis among health function, culture, excellence geographic location of Korean food and Korean food ingredient
[Korea Food Research Institute] Traditional food semantics database construction and analysis program
[Korea Food Research Institute] Construction of semantics database and korean food specialized ontology
[Pusan National University] Construction of anti-aging molecular network of aging Database
[Korea Food Research Institute] Development of InsilicoFood pilot system through the integrated analysis of food information
[Kwang Dong] Development of iF DB based dry complex system DB and h-pilot system

Patent and Program Registration

[Patent Registration 10-2021-0168283] System for risk prediction of osteoporosis
[Patent Registration 10-2118103] Method for measuring the fineness of marbling using ribeye image of Korean beef
[Patent Registration 10-2067076] Biomarker composition for prediction or diagnosis of canine patellar lunation
[Patent Registration 10-2018-0156903] Biomarker composition for prediction or diagnosis of canine patellar lunation
[Patent Application 10-2019-0023081] Biomarker composition for diagnosing lung cancer comprising peptide nucleic acid
[Patent Application 10-2019-0025109] High sensitive genetic variation detection and reporting system based on barcode sequence
[Patent Application 10-2019-0155754] Biomarker composition for prediction or diagnosis of canine degenerative Diseases
[Patent Registration 10-1107582] Web-based ontology editing operation system
[Program Registration 2011-01-121-005389] Smart-TGM heavy metals toxicity-index excavating tools
[Program Registration 2011-01-129-001569] WeightViz by weight visualization tool
[Program Registration C-2014-030421] Personal genomics-based obesity risk computing program
[PCT Application pct110125] Web-based ontology editing operation system
[Patent Application 10-2014-0163505] Customized personal traits dietary ingredients for information character-chemical agent network system and providing methods
[Patent Application 10-2014-0170397] Personal genomics-based obesity risk analysis system and method
[Patent Application 10-2015-0156844] Customized food information recommendation system considering personal genotype and phenotype information

An innovative food solution providing data-driven, personalized food information using AI and big data

It recommends optimized nutritional components based on data and supports personalized health management.
Over the past decade, we have collected reliable scientific information from trusted sources like the Rural Development Administration, the Ministry of Food and Drug Safety, and the NIH, using 28 million bio-food big data entries based on domain-specific standards to provide accurate information.

Precision Nutrition and Healthcare

We provide information to prevent diseases and promote a healthy life through personalized nutrition management.

Customized Health Supplements and Diet

We provide information on health supplement development and customized diets.

Dietary Management for the Elderly and SpecialGroups

We provide personalized food solutions for individuals with chronic diseases like diabetes and hypertension, as well as the elderly.

SOLUTIONS

Personalized Food Recommendation Solution

- Provide personalized meal information (main dishes, sides, soups, snacks) based on surveys and health goals
- Tailored food recommendations based on individual health data
- Provide metabolic component information of recommended foods and meals

Personalized Meal Plan Solution

- AI-driven meal recommendations in collaboration with nutritionists
- Personalized meal plans based on location, environment, ingredient costs, and other factors

AI Meal Prescription Solution

- Allergy-restricted meal prescriptions and management for each patient
- Review AI-generated meal plans for nutrition
- Dietary feedback for patients on prescribed meal plans
- Database of meal plans, foods, ingredients, nutrients, and allergies

OUR SERVICES

Customized food/meal recommendation API

API service providing personalized nutrition information by linking food and health data

Exploring bioactive compounds in biomaterials

Exploring and listing bioactive compounds from agricultural and marine biomaterials

Discovering health supplement ingredients

Deep data-driven database of health supplement ingredients and efficacy prediction

ifood

Korea's No.1 data-driven food recommendation app

ifood is an app service for working moms or housewives with children aged 6-11, recommending foods and products tailored to them and their kids.

ifoodplan

AI-driven customized group meal solution

ifoodplan supports nutritionists nationwide based on expertise gained from providing various food recommendation services.

The Future of the seed industry lies within the data generated through digital breeding technologies.

Insilicogen will harness data breeding to uncover high-value resources in the fields of pharmaceuticals, bioproducts, and energy, extending beyond "seeds," which are the fundamental source of sustenance. We are dedicated to integrating biological information, big data, and AI technology to discover novel seeds in silico, relentlessly seeking the foundational value for the future bio-industry.

Download Digital Breeding Casebook(Vol.1)

Download Digital Breeding Casebook(Vol.2)

Agriculture

Effective Selective Breeding is feasible through data breeding.

Fishery

Time to acquire economic trait will be reduced.

Animal Husbandry

Optimal characteristics will be maintained through the simulation of crossbreeding.

SOLUTIONS

Phenotype-genotype integrated data analysis

- Genotyping and SNP chip development
- RIL population variant exploration
- Elite lineage variant exploration and inter-lineage relatedness estimation
- Group analysis - PCA, STRUCTURE, Phylogeny
- MABC marker discovery and construction of phenotype-genotype database

Machine learning for trait prediction

- Genotype-phenotype association marker search (GWAS/FST)
- Calculation of heritability index for each marker
- Establishment of a machine learning phenotype prediction model

Breeding simulation

- Calculation of breeding value (GBLUP, ssBLUP, rrBLUP)
- Calculation of valid group
- Mating simulation and mating efficiency test

OUR SERVICES

Phenotype-Genotype customized database construction

Standardized phenotype and genotype big data design and development

Phenotypic Prediction Modeling

Machine learning modeling for selection of superior individuals based on data breeding

Phenotypic Prediction

Genotype-based phenotypic prediction using machine learning models

Breeding Efficiency Prediction

Breeding guidelines for superior trait preservation

Customized Data Analysis

De novo decoding and beneficial gene discovery based on bioinformatics

Genotyping

Customized genotype analysis services for breeding optimization

Molecular Detection Kit

Development of rapid and economical molecular detection kits for economically important traits (quantitative traits, disease resistance, etc.)

AI-driven precision analysis enables the rapid discovery of stable and effective peptides.

Based on multi-omics research, we select millions of natural peptides from biological sources.
We predict not only efficacy but also potential side effects, eliminating risks in advance.
By considering binding affinity with target proteins, we identify peptides with the highest success potential,
accelerating the development of safer, more reliable peptides and revolutionizing the value of biological materials.

Eco-friendly Bio Materials

Biologically derived safe peptides can be used in various fields, including antibiotic alternatives, biocompatible cosmetic ingredients, and eco-friendly pest control.

Personalized Treatment

We analyze individual patient data to design personalized peptides and provide optimized treatment solutions.

Functional Ingredients for Dietary Supplements

We select functional peptides for use as active ingredients in various health supplements, including immune support, antioxidants, and anti-inflammatory products.

SOLUTIONS

ipep

- Biochemical activation module
- Machine learning module
- Molecular docking module

OUR SERVICES

New Drug Candidates

Select bioactive peptides with antimicrobial, anticancer, antiviral, and anti-inflammatory properties for efficient new drug candidate discovery

Customized Treatment

Analyze individual genetic and immune data to design personalized peptide treatments

Functional Food Ingredients

Research on functional peptides with effects like immune boost, antioxidant, and gut health improvement

Biological Pesticide

Design and use of species-specific binding peptides for eco-friendly pest and disease control

Bio Cosmetics

Discover peptide ingredients with various skin benefits, including antioxidant, acne, and dermatitis treatment

Biosensors / Diagnostics

Development of high-sensitivity diagnostic sensors using biomarker peptides for rapid and accurate diagnosis

Biological Environmental Remediation

Research on peptide materials that degrade pollutants like microplastics, heavy metals, and toxins

Certifications

01 Certified youth-friendly small and medium sized company From Ministry of Employment and Labor 2024.01.01 / 2026.12.31

02 Certificate of professional research business operator (order research: engineering research and development business) From Ministry of Science and ICT 2022.06.27 / 2024.10.20

03 Certified youth-friendly small and medium sized company(excellent wage) From Ministry of Employment and Labor 2022.01.01 / 2023.12.31

04 Designated excellent corporate research institute From Ministry of Science and ICT 2021.06.22 / 2024.06.21

05 Direct production certificate(Big-data analysis) From Korea Federation of SMEs 2021.03.17 / 2023.03.16

06 Direct production certificate(Software development) From Ministry of Employment and Labor 2021.03.17 / 2023.03.16

07 Certified youth-friendly small and medium sized company(excellent wage/outstanding work-life balance) From Ministry of Employment and Labor 2021.01.01 / 2021.12.31

08 Confirmation of Innovative business management in small and medium sized company(MAIN-BIZ) From Small and Medium Business Administration 2020.06.27 / 2023.06.26

09 Certified youth-friendly small and medium sized company (outstanding work-life balance) From Ministry of Employment and Labor 2020.01.01 / 2020.12.31

10 Certified youth-friendly small and medium sized company (occupational safety) From Ministry of Employment and Labor 2018.01.01 / 2018.12.31

11 Selected as the best service company From Korea Credit Guarantee Fund 2017.08.04

12 Approved as a research Institute From KOITA 2007.06.18

Patent Registration

01 System for selection of genetic markers and method for breed identification (10-269735) 2024.08.16

02 Camera-integrated tenderloin imaging device (10-2554362) 2023.07.06

03 Human body type and metabolic susceptibility SNP marker and diagnostic information provision method (10-2093453) 2020.03.19

04 Prediction and diagnosis method of canine degenerative joint disease(10-2067076) 2020.01.10

05 Targeted gene screening method and device using multi-omics data and survival analysis(10-1107582) 2019.11.01

06 DNA search method(10-1287400) 2013.07.12

07 Web-based ontology editing operation system (10-1107582) 2012.01.12

Awards

01 Official commendation for contributions to advancement in agricultural technology From Presidential Award 2023.11

02 Official commendation for contributions to the advancement of the food industry From the Minister of Agriculture, Food and Rural Affairs 2020.12

03 Official commendation for contributions to the development of the marine and fisheries industry From the Minister of Oceans and Fisheries 2019.12

04 Official commendation on promoting experimental research of fishery From the Minister of Ocean and Fisheries 2018.12

05 Official commendation on excellence in management From the Gyeonggi Provincial Small and Medium Business Administration 2016.02

Registered Mark

01 iF®(INSILICO FOOD) 2017.11.01

Program Registration

01 Registered 76 programs including KinMatch (Birth related information search system)

Applied Patent

01 A device provides gene expression information and 6 others

Knowledge-based bioinformatics platform, 70,000 monthly users!

Insilicogen's bioinformatics knowledge platform shares biological information, proceeds online and offline bioinformatics educational programs, and provides various contents for big-data search-based bioinformatics analysis that leads to online purchases.

incoDOM

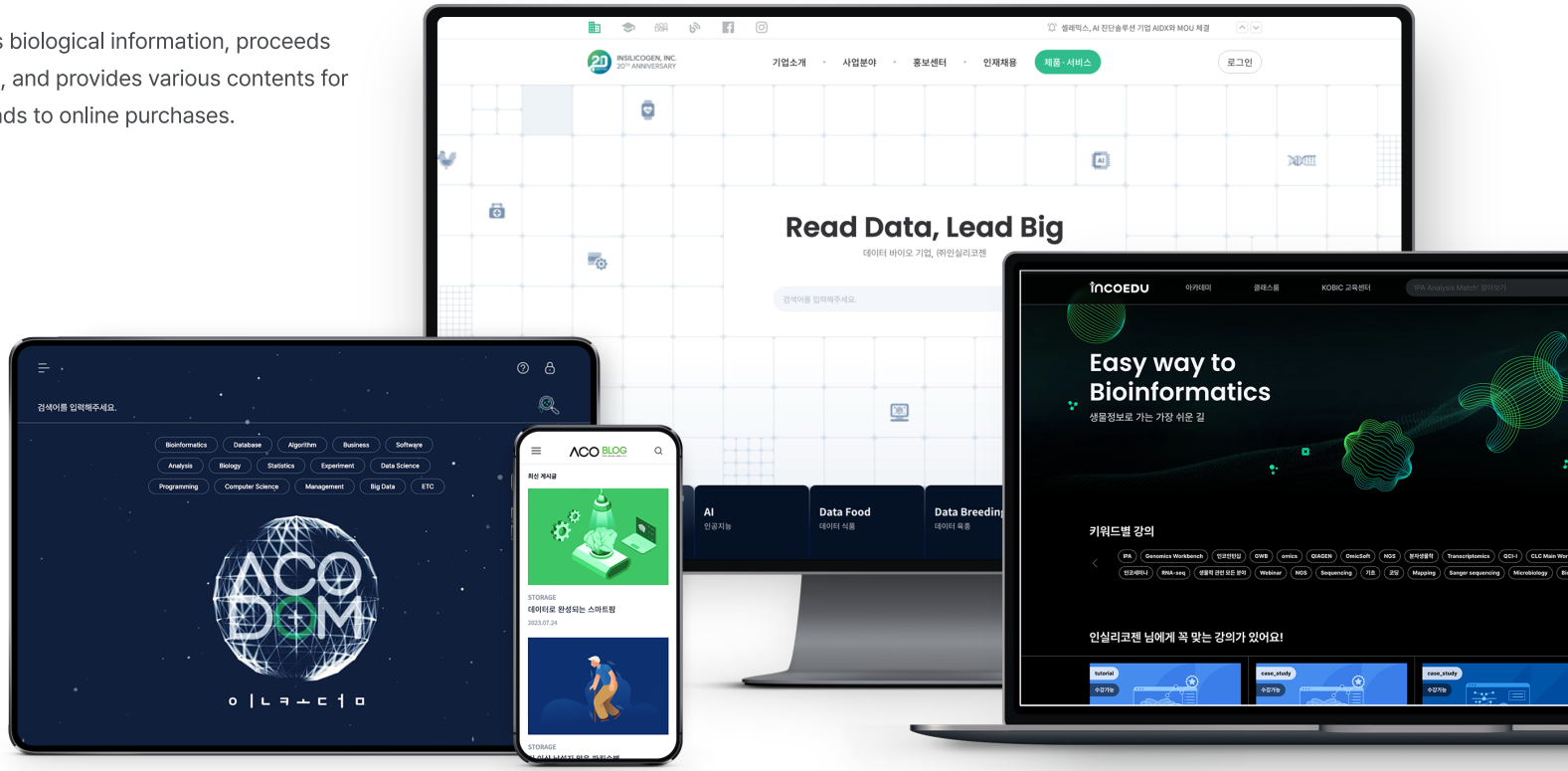
- Bioinformatics knowledge-sharing platform
- 2,500 professional articles

incoBLOG

- A platform for sharing research trends and insights in bioinformatics
- 500 blog posts

incoEDU

- Online educational platform
- Offers an integrated learning experience linked to hands-on offline training (includes registration, certificate issuance, pre-learning and review tools)



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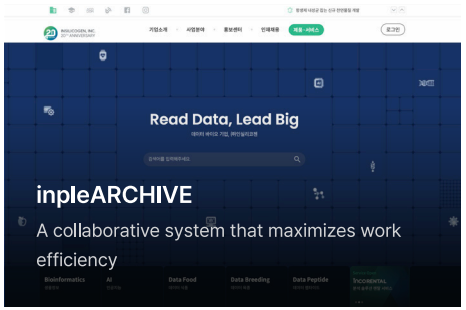

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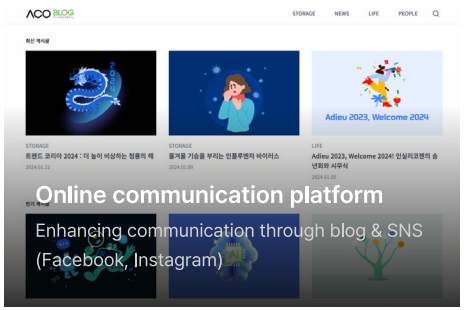
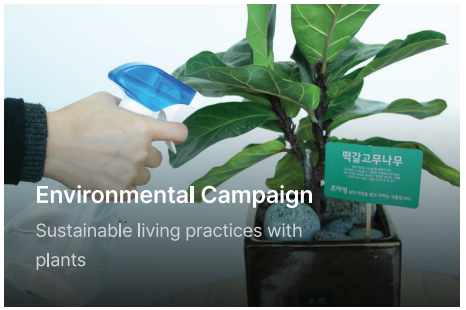


Online communication platform
Enhancing communication through blog & SNS (Facebook, Instagram)



Environmental Campaign
Sustainable living practices with plants

Culture Day
Cultural day for nurturing intellect and emotions

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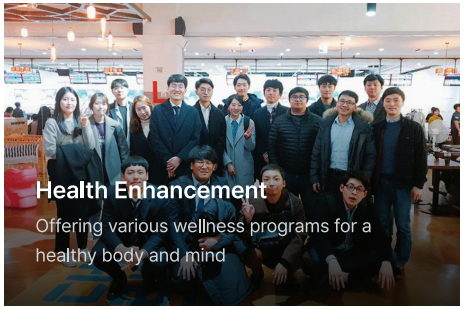
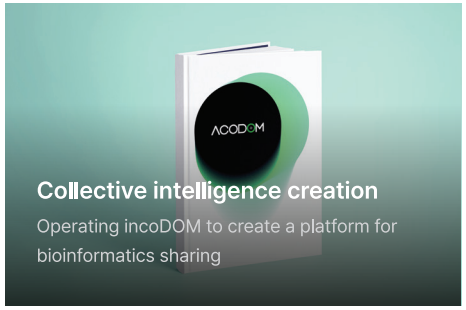
Team-building events and gatherings

Sustainable growth
Supporting continuous growth through seminars, blog series, and reading management



Health Enhancement
Offering various wellness programs for a healthy body and mind



Collective intelligence creation
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