Korea Medical AI Nexus,
K-MAIN

KMAIN
RESEARCH & DEVELOPMENT CENTER

K-MAIN
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K-MAIN CATALOG

Portable AI Fluorescense Probe for Monitoring Lesion

Development of a portable AI uorescense diagnostic device for observing tumors and lymph nodes

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COMPANY OVERVIEW

Kwang Gi Kim
KMAIN CEO

Kwang Gi Kim, CEO

- **CEO. K-MAIN Co., Ltd**
- Current Professor, Department of Biomedical Engineering. Gachon University
- Currently Director of Medical Device R&D Center. Gachon University Gil Medical Center
- Director of National Cancer Center (NCC)
- 2023 Minister of Health and Welfare Excellence Award
- 2023 President of the Medical Science Academy
- 2021 Medical Informatics Society Academic Award
- SCIE Journals in Medical Devices and AI : 400 Journals
- **SCIE Paper last three years** : 150 Journals
- **Patents** : 50 cases
- **Technology transfer** : 30 cases

Greetings!

K-MAIN corporation was founded in 2023 with the passion and responsibility of the employees.

The company strives to create a healthier world by consistently providing high-quality and innovative solutions with responsibility and trust for customers, partners, employees, and society. Together, we will move forward and grow, contributing to a well-crafted future for everyone.

Company Logo

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K-MAIN corp tries to connect and integrate various experts, technologies, and ideas based on AI technology in the medical field. Also, it is a corporation that plays role as a pivot where interactions between medical service providers, researchers and patients are stimulated.

Certifications & History

ISO 9001 · ISO 14001 · ISO 45001

2023

- 01. **K-MAIN corp founded**
- 04. **Certificated Venture Company**
  Company-Affiliated Research Institute founded
- 05. **Seleted as a Supported Company for the Early Start-up Package**
  (Ministry of SMEs and StartUps)
- 06. **Technology Evaluation by the Incheon Technology Innovation Center**
  Selected for BioCore Business Start-up Team (Biocore Business team)
- 07. **Selected as move in company at Gachon University Start-up Incubation Center**
  Selected for the Hyehwa ALL-SET Customized Defile Technical Collaboration Project (Daejeon University LINK Bussiness group)
  Selcted for Market Expansion-Type (Post Paid) Project under the Small and Medium Business Innovation Development Program
- 08. **Specialized Researching Business Registration**
  Selected as an Institution for the development of an automated care plan model for AI-based cardiovascular disease management
- 09. **Selected as Start-up improvement technology development project Stepping Stone Service R&D task**

2024

- 01. **Selected for the Early Startup Package**
  (Korea Institute of Startup & Entrepreneurship Development)
- 02. **Adoption of AI-based digital pathology solution for MMRd classification in endometrial cancer**
- 03. **Adoption of AI-based body composition analysis and sarcopenia diagnosis support solution**
- 04. **Selected for the High-Growth Startup Commercialization Support Program**
  (Seongnam Industry Promotion Agency)
  Selected for the AI-Integrated Product Development Program
  (Seongnam Industry Promotion Agency)
  Selected for the AI Voucher Program
  (AI-based digital pathology solution for MMRd classification in endometrial cancer)
- 05. **Adoption of AI-based solution for breast lesion detection and diagnostic support**
- 07. **Selected for the Deep-Tech TIPS Program** (Ministry of SMEs and Startups)
- 08. **Selected for the Startup Growth Technology Development Program** (Ministry of SMEs and Startups)
- 10. **Selected for the Eum-Growth Support Program** (Gunpo Industry Promotion Agency)
  Adoption of AI-based precision spinal analysis and diagnostic support solution
- 11. **Selected for the AI Voucher Program**
  (AI-based solution for breast lesion detection and diagnostic support)

2025

- 04. **Selected for the AI Commercialization Support Program** (Incheon Technopark)
  Selected for the Biohealth R&D Project
  (Development of on-device AI-based digital healthcare products using unstructured medical data and synthetic data) (Ministry of Trade, Industry and Energy)
- 06. **Selected for the Medical Device Development Support Program**
  (Gyeonggi Institute of Science and Technology Promotion)
  Selected for the NGS-Based Precision Medicine R&D Project
  (Development of a clinical decision support system (CDSS) for gastrointestinal and genitourinary cancer using NGS-clinical data and AI models) (Ministry of Health and Welfare)
- 07. **Selected for the KTL Software-Based Medical Device Quality Management System Program**
  Selected for the Hyperscale AI Ecosystem Expansion Project
  (Stroke imaging synthetic data) (NIA – National Information Society Agency)

MAIN TECHNOLOGY

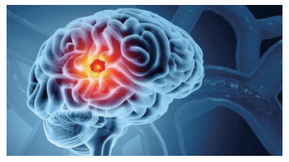
Challenge

innovation

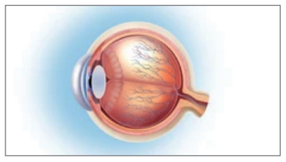
Product Equivalent Specificatior

⬅ Price 1/100 cheaper ➡

Dual Sources
(780mm, 405mm)
Various Diseases

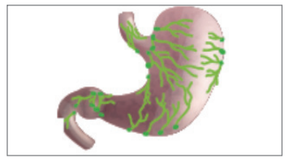


Brain Tumors

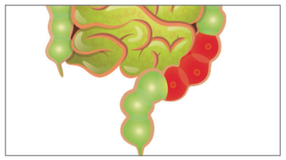


Retinal

Ultra-Compact Size and Weight
Rapid Eiagnostics without Site Restrictions

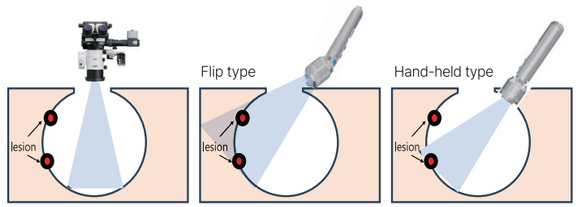


Stomach Cancer



Colon Cancer

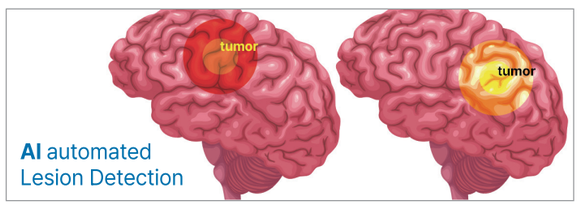
Wireless Operation
Eliminated Blind Spots



Existing Product

Our product

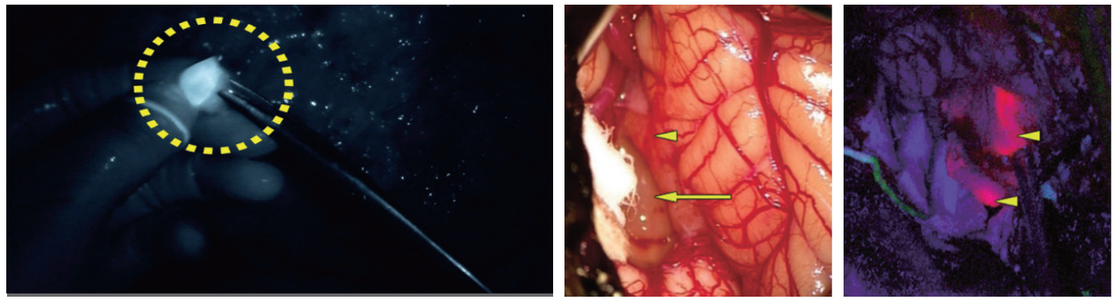
AI lesion Detection
Improve accuracy



with 5-ALA

with yellow dye

ADVANCED TECHNOLOGY



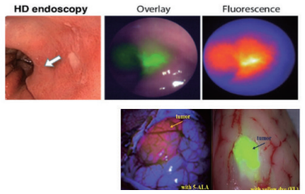
Various Indication

Indication

- Gastrointestinal
- Cardiovascular
- Cancer
- Plastic/Reconstructive Sugeries

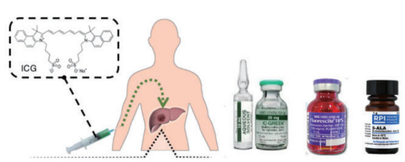
Can use various Fluorescent contrast agent at once

- Indocyanine green
- Fluorescein sodium
- 5-aminolevulinic acid

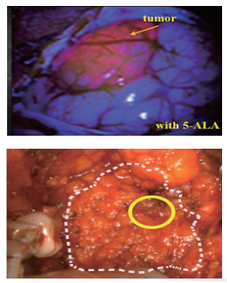


End-User

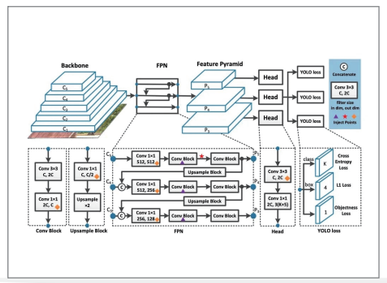
- Hospital & Clinics
- Research Labs
- Pharmaceutical Companies



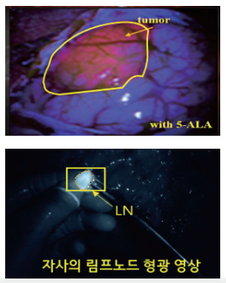
IMPROVEMENT OF DETECTION ABILITY USING AI AUTOMATED LESION DETECTION SYSTEM



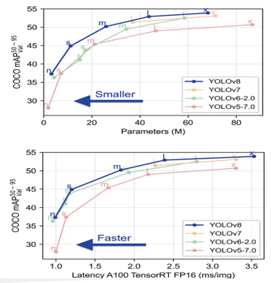
Input Images



YOLOv8



Output Masks



Performance

Minimized Size & Weight / Reduced Cost / Lower power consume & Eco-Friendly

COMPUTER ASSISTANCE DETECTION PROGRAM

Supported AI Service

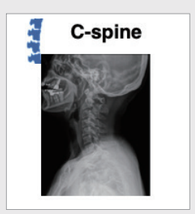
- **AI imaging processing solution**
- **X-ray spinal disease imaging automated analysis** (accurate diagnosis)
- **Scoliosis, Kyphosis, Lordosis, and Spinal compression**
- **PACS sync and accurate analysis result**

Spinal X-ray analysis
- Analysis of spine
  - Lumbar spine
  - Thoracic spine
  - Cervical spine

AI-based vertebral body automated segmentation
- Auto-segmentation of Anatomical Spine
  - Lumbar spine
  - Thoracic spine
  - Cervical spine

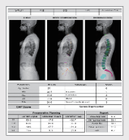
Spine malformation detection indication
- Accurate imaging angle measurment and analysis of Spinal Structure
- Measurement of scoliosis angle, kyphosis angle, and lordosis angle
- Automatic and semi-automatic angle measurement between desired vertebrae

Medical Data



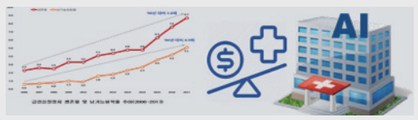
1 ANALYSIS

Provision of diagnostic indicators and analysis results reports of spine



2 Platform enhancement

Platform enhancement based on validation of clinical utility



3 PACS

Sync PACS and Solution

MAJOR COOPERATIVE NETWORK

Infrastructure
- Research Personnel
- Research Technology
- Facility

Research Facility
- Fundamental Research
- Applied research

Start Incubation Center Gachon University

Medical Institution Research Facility

가천대학교 Gachon University

가천대 길병원 Gachon University Gil Medical Center

Supporting
- Technology
- Entrpreneurship
- Growth

KMAIN RESEARCH & DEVELOPMENT CENTER

Supporting
- Technology
- Growth

Business Support Agencies

Related Agencies

Support
- Technical
- Financial
- Human resources
- Marketing

BMA (주)비엠에이

KMAIN RESEARCH & DEVELOPMENT CENTER

Agencies
- Policy
- Administrative