

# Molecular Imaging New Drug development center



## Prof. Ho-Chun Song, MD, PhD

### Research Area

- Radiopharmaceutical Drug Development for Neurodegenerative Diseases
- Radiation safety and medical applications of nuclear imaging
- AI-driven analysis of multimodal medical data

### Projects

	Title	Funding
2013.11 ~ 2018.04	Medical Radiation Safety Research Center Project	Nuclear Safety and Security Commission
2017.03 ~ 2020.02	Medical Data Analysis Technology Development using Multi-type Complex Data Fusion	Ministry of Science and ICT
2019.03 ~ 2019.12	Research on Understanding Radiation in Daily Life using STS	Korea Institute of Radiological & Medical Sciences
2020.06 ~ 2023.05	Regional University Outstanding Scientist Support Program: AI-based Drug Development for Tau Imaging in Alzheimer's Disease Diagnosis	National Research Foundation
2022.04 ~ 2023.03	Cohort Study on Dementia and Cognitive Impairment in the Elderly	Korea Disease Control and Prevention Agency
2023.06 ~ 2024.12	Dementia Prevention and Management Research through Community-based Tracking of High-risk Elderly Groups	Korea Disease Control and Prevention Agency
2018.02 ~ 2024.12	Specialized Project for AI-based Medical Technology Development	Chonnam National University Hospital

# Molecular Imaging New Drug development center



## Prof. Jahae Kim, MD, PhD

### Research Area

- Medical AI, brain imaging, nuclear medicine, PET/CT, dementia PET imaging
- Basic research for brain disease using animal models

### Projects

	Title	Funding
2017.04.~2021.03.	Project for enhancement of basic research capacity for MD	National Research Foundation
2017.06.~2020.05.	Project of individual basic research	National Research Foundation
2020.09.~2021.02.	Project of data construction for artificial intelligence development	National Research Foundation
2020.09.~ing	Project of mid-career researcher	National Research Foundation
2020.09.~ing	BK21 (Brain Korea) 4 project: in the Department of AI Convergence of CNU graduate school	National Research Foundation
2023.07.~ing	AI convergence training center: in the Department of AI Convergence of CNU graduate school	National Research Foundation
2024.07.~ing	ICT research center: in the Department of AI Convergence of CNU graduate school	National Research Foundation

# Molecular Imaging New Drug development center



## Prof. Sang-Geon Cho, MD, PhD

### Research Area

- Quantitative dynamic/static PET and SPECT image analyses in animal disease models
- Dynamic Radionuclide cardiovascular imaging with compartment modeling

### Projects

	Title	Funding
2018.12 –2020.11	Evaluation of non-infarct-related arteries using C-11 acetate PET in acute myocardial infarction with multivessel disease	Korean Society of Cardiology
2020.06 – 2023.02	Optimization of angiotensin receptor-neprilysin inhibitor (ARNI) therapy in heart failure by myocardial sympathetic nerve imaging: preclinical and clinical validations	National Research Foundation, Republic of Korea
2022.01 – 2022.12	Development of imaging analysis technology for follow-up and prognostic stratification of renal trauma	Chonnam National University Hospital
2023.09– 2024.08	Molecular imaging of fibroblast activation and AI analyses in cardiovascular diseases	National Research Foundation, Republic of Korea
2024.04 –2025.03	Multimodal molecular imaging and analyses of peripheral artery disease: preclinical and clinical application	American Heart Association



# Prof. Ki-Seong Park, MD, PhD

## Research Area

- Development and validation of AI-driven medical technologies in healthcare
- Integration of AI with nuclear medicine for advanced medicine
- AI-based drug discovery and design for novel therapeutics

## Projects

	Title	Funding
2025.01 ~ing	Development of Retrieval-Augmented Generation (RAG) Technology Based on Multimodal Data Input	Ministry of Science and ICT
2020.05 ~ing	Specialized Project for AI-based Medical Technology Development	Chonnam National University Hospital
2024.03 ~ing	Chonnam National University Hospital Academic Research Project (Multi-Year Collaborative)	Chonnam National University Hospital

# MIND - Equipment



**MIND Center**



**Hot Lab**



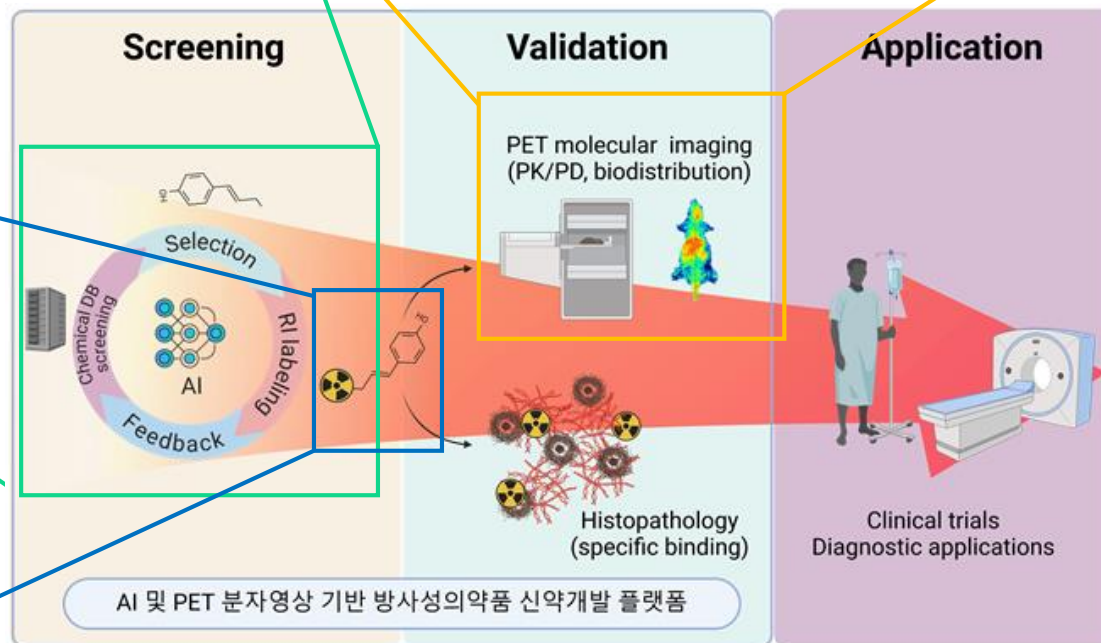
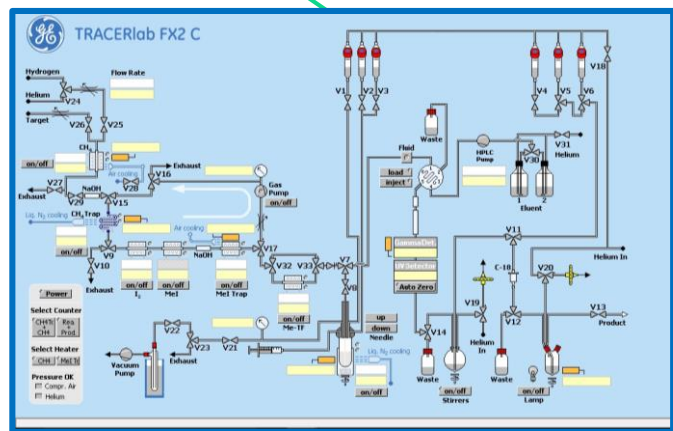
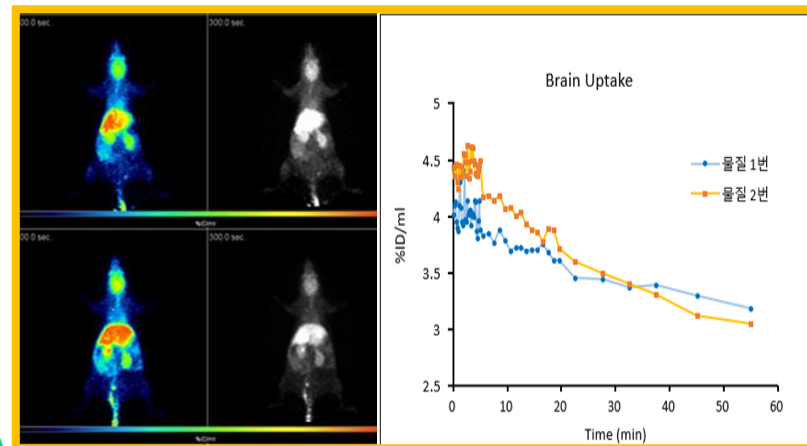
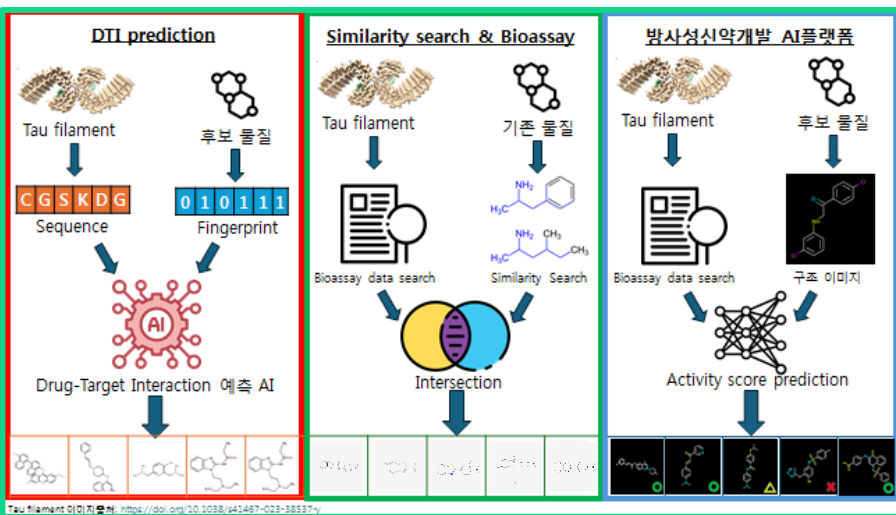
**Cyclotron**



**Animal PET/CT**



# MIND – Research Area

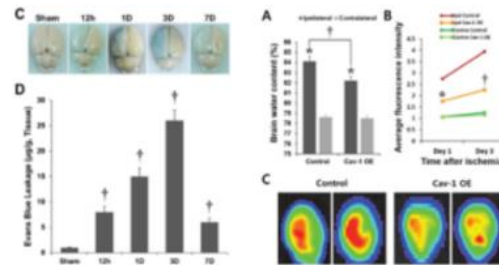


# MIND – Research Area

초창기:

형광영상을  
활용한 연구

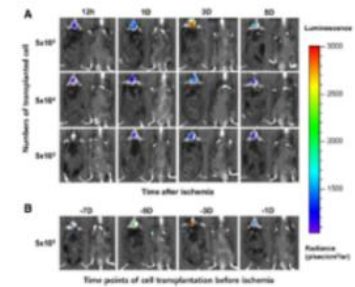
Oncotarget 2016



초창기:

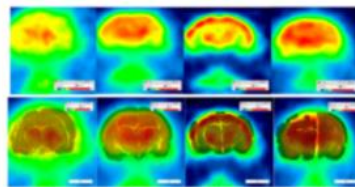
생체발광영상을  
활용한 연구

Stroke 2016

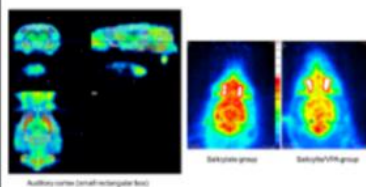


중반기:

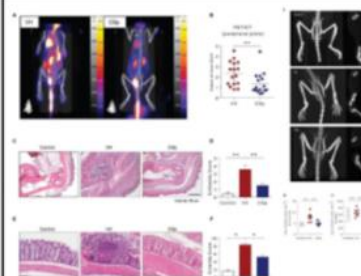
PET/CT를  
활용한 연구



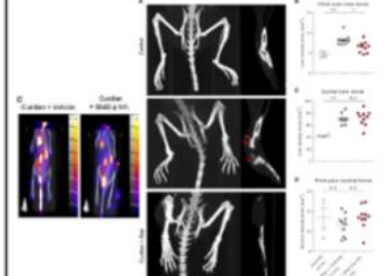
Brain Sci 2021



Int J Mol Sci 2021



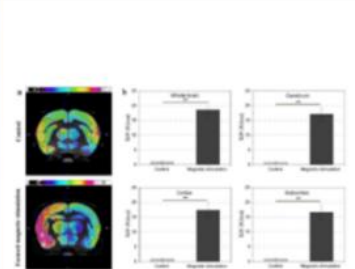
Front Rheumatol 2021



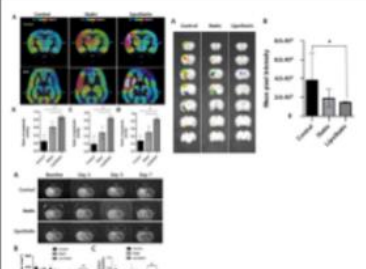
Rheumatol 2021

최근:

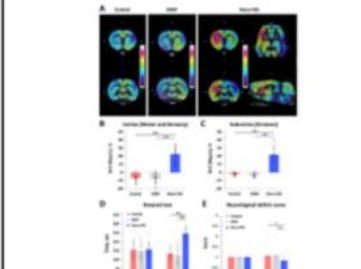
PET/형광/MR을  
다양하게 활용하여  
치료효과를  
평가한 연구들



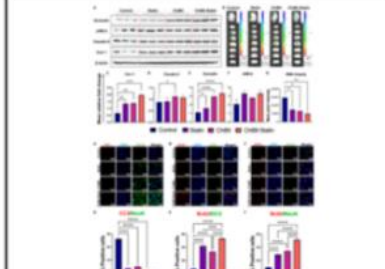
Sci Rep 2023



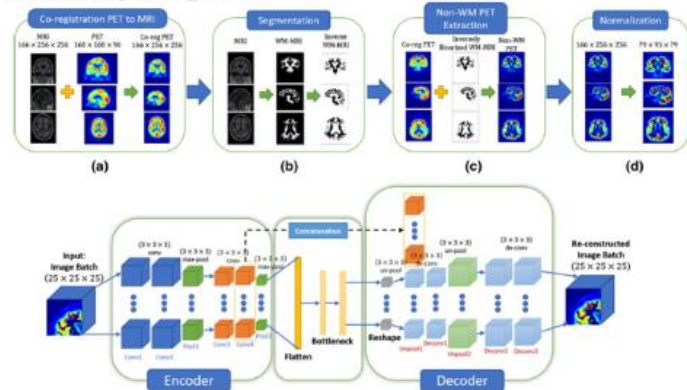
Transl Stroke Res 2023



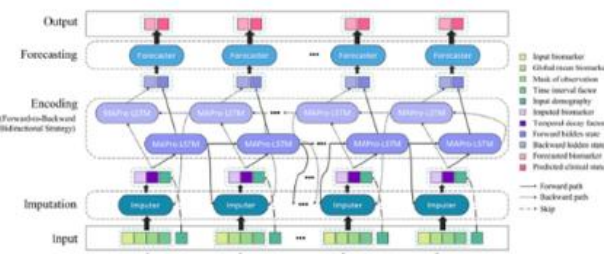
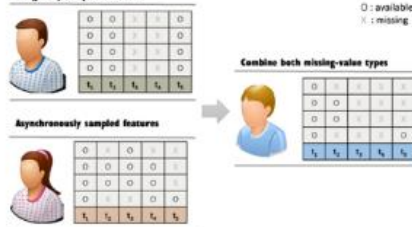
Brain Stimulation 2024



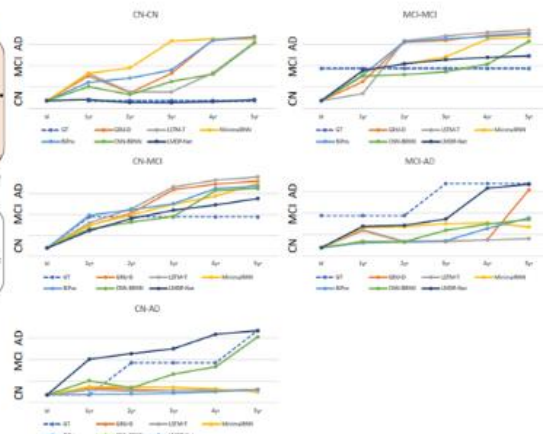
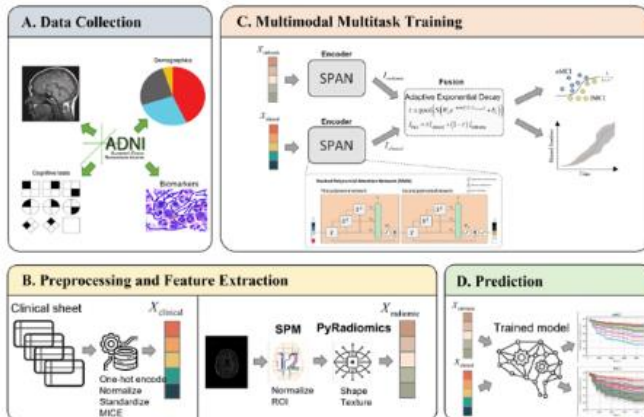
Biomaterials Res 2024

**Soft computing 2018**

## Irregularly sampled intervals



### A. Data Collection





# MIND – Symposium

## 2019 MIND

Molecular Imaging and New drug Development center

### 분자영상신약개발센터 개소식 및 기념 심포지엄

12.  
23. 월

전남대학교  
의과대학  
덕재홀

08:40	09:00	등록	사회: 김순철(전남대학교병원)
09:00	09:20	분자영상신약개발센터 경과보고 및 GMP-certified cyclotron 소개	송호천(전남대학교병원)
09:20	09:30	분자영상신약개발센터 개소식 축하	이성용(전남대학교병원)
09:30	10:00	분자영상신약개발센터 커텐식 및 투어	
10:00	10:20	Coffee Break	사회: 김지혜(전남대학교병원)
10:20	10:25	개회사	송호천(전남대학교병원)
10:25	10:30	심포지엄 축하	김병채(전남대학교병원 외생명연구소장)
<b>Session 1. Radiopharmaceuticals for Molecular Imaging</b>			
		좌장: 봉복순(화순전남대학교병원)	
10:30	11:00	Molecular imaging in cyclotron facility	이재성(서울대학교병원)
11:00	11:30	Drug developments for molecular imaging	오승준(서울아산병원)
11:30	12:00	패널토의	김경민(전남대학교병원), 김동연(화순전남대학교병원), 박정호(한국원자력연구원), 강세영(화순전남대학교병원)
12:00	13:00	Lunch	사회: 조상건(전남대학교병원)
<b>Session 2. Preclinical Research in Molecular Imaging</b>			
		좌장: 안영근(전남대학교병원)	
13:00	13:30	New medical RI and its labeling techniques for molecular imaging	김정영(한국원자력연구원)
13:30	14:00	Cardiovascular research in porcine model	김장기(전남대학교병원)
14:00	14:15	패널토의	김민철(전남대학교병원), 김희원(전남대학교병원), 이신영(전남대학교병원), 유수영(화순전남대학교병원)
14:15	14:30	Coffee Break and Photo	
<b>Session 3. Basic and Clinical Research in Molecular Imaging</b>			
		좌장: 김윤환(전남대학교병원)	
14:30	15:00	Molecular thyroid imaging	안병철(경북대학교병원)
15:00	15:30	Molecular cardiovascular imaging	윤은정(영남대학교병원)
15:30	16:00	Molecular brain imaging	오민영(서울아산병원)
16:00	16:15	패널토의	유영재(화순전남대학교병원), 정인식(전남대학교병원), 최성민(전남대학교병원), 정아리(조선대학교병원)
16:15	16:30	Coffee Break	
<b>Session 4. Experience of PET/CT in Clinical Research</b>			
		좌장: 박창환(전남대학교병원)	
16:30	16:45	Experience of PET/CT in oncology	권성영(화순전남대학교병원)
16:45	17:00	Experience of PET/CT in neurology	김지혜(전남대학교병원)
17:00	17:15	Experience of PET/CT in cardiology	조상건(전남대학교병원)
17:15	17:30	패널토의	조은(전남대학교병원), 김형운(전남대학교병원), 황의형(화순전남대학교병원), 김호식(전남대학교병원)
17:30	18:00	폐회사	송호천(전남대학교병원)
18:00		Dinner	

## 2021 MIND

### 분자영상 신약개발 센터

Molecular  
Imaging  
New Drug  
Development Center

### 심포지엄

SYMPOSIUM

New Horizon of  
nuclear imaging and  
theranostics

일시  
2021년 11월 29일 (월)

장소  
전남대학교병원  
5동 1층 대강당  
On-Line (Zoom meeting)

#### PROGRAM

08:30-08:50	등록	사회: 김지혜(전남대학교병원)
08:50-08:55	개회사	송호천(전남대학교병원)
08:55-09:00	심포지엄 축하	안영근(전남대학교병원)
	<b>Plenary Lecture</b>	좌장: 송호천(전남대학교병원)
09:00-09:40	Nuclear imaging and theranostics 성공을 위한 노력	오승준(서울아산병원)
09:40-10:00	온라인 질의 및 패널토의	김정연(전남대학교병원), 김병채(전남대학교병원)
	<b>Session 1</b> Clinical implication & Future perspective of Neurology	좌장: 김병채(전남대학교병원)
10:00-10:20	F-18 Florbetaben	강도영(동아대학교병원)
10:20-10:40	F-18 FP-CIT	오민영(서울아산병원)
10:40-11:00	온라인 질의 및 패널토의	최성민(전남대학교병원), 송민근(전남대학교병원)
	<b>Session 2</b> Clinical implication & Future perspective of Cardiology	좌장: 정병호(전남대학교병원)
11:00-11:20	N-13 Ammonia	이주영(삼성서울병원)
11:20-11:40	C-11 Acetate	조상건(전남대학교병원)
11:40-12:00	F-18 NaF	황진철(서울대학교병원)
12:00-12:20	온라인 질의 및 패널토의	심두선(전남대학교병원), 이승현(전남대학교병원)
12:20-12:30	Photo and Lunch	사회: 조상건(전남대학교병원)
	<b>Session 3</b> Clinical implication & Future perspective of Prostate cancer	좌장: 김병채(전남대학교병원)
13:30-13:50	Ga-68 PSMA	윤미진(세브란스병원)
13:50-14:10	Lu-177 PSMA	강건욱(서울대학교병원)
14:10-14:30	온라인 질의 및 패널토의	유성철(전남대학교병원), 김지혜(전남대학교병원)
	<b>Session 4</b> Clinical implication & Future perspective of Neuroendocrine tumor	좌장: 김현수(전남대학교병원)
14:30-14:50	Ga-68 DOTATATE	변병환(한국원자력의학원)
14:50-15:10	Lu-177 DOTATATE	오도연(서울대학교병원)
15:10-15:30	온라인 질의 및 패널토의	김호균(전남대학교병원), 박선영(전남대학교병원)
15:30-16:00	Coffee Break	
	<b>Session 5</b> Clinical implication & Future perspective of HCC	좌장: 박창환(전남대학교병원)
16:00-16:20	Updates in PET/CT for HCC	최준영(삼성서울병원)
16:20-16:40	Y-90 TARE	송요성(연세대학교병원)
16:40-17:00	온라인 질의 및 패널토의	윤재현(전남대학교병원), 김효진(전남대학교병원)
	<b>Session 6</b> Clinical implication & Future perspective of parathyroid disease	좌장: 정동진(전남대학교병원)
17:00-17:20	F-18 Fluorocholine	조영석(삼성서울병원)
17:20-17:40	C-11 methionine	박기성(전남대학교병원)
17:40-18:00	온라인 질의 및 패널토의	김민서(전남대학교병원), 조동혁(전남대학교병원)
18:00-18:10	폐회사	송호천(전남대학교병원)



# MIND – Symposium

## 2022 분자영상 신약개발 센터 심포지엄

Molecular  
Imaging  
New Drug  
Development Center  
SYMPOSIUM

일시 2022. 11. 14 (월)  
장소 · 전남대학교  
의학박물관 문석홀  
· 온라인

주관 : 전남대학교병원 핵의학과  
후원 : 전남대학교병원 의생명연구원



## Drug Discovery and Development

8:30~8:45 등록 사회: 김지혜 전남대학교병원  
8:45~8:55 개회사 송호천 전남대학교병원  
8:55~9:00 심포지엄 축하 안영근 전남대학교병원장

### Session 1 Synthetic Biology in Drug Discovery

9:00~9:30 What is Synthetic Biology? 좌장: 염수진 전남대학교  
9:30~10:00 Synthetic Biology for the Development of Living Medicines 이대희 한국생명공학연구원  
10:00~10:20 온라인 질의 및 패넬토의 김근호 전남대학교병원  
10:20~10:30 Coffee and Break 조상건 전남대학교병원

### Session 2 Current Status and Prospects of AI-based Drug Discovery

10:30~10:50 AI 신약개발 최신 동향 좌장: 남호정 GIST  
10:50~11:10 인공지능 활용 신약개발: 김우연 KAIST  
신규표적 및 신규물질 발굴 사례 중심으로 송상욱 스벤디칼  
11:10~11:30 전사체학 데이터 기반의 AI 신약개발의 김지훈 은코크로스  
실제 사례 김철환 송북대학교병원  
11:30~11:50 온라인 질의 및 패넬토의 서영덕 송북대학교병원  
박기성 전남대학교병원

### Session 3 Applications of Click Chemistry in Drug Discovery

11:50~12:30 Photo and Lunch 사회: 조상건 전남대학교병원  
12:30~14:00 Click Chemistry for Drug Development 좌장: 임영준 전남대학교  
이선우 전남대학교  
14:00~14:30 Click Bioorthogonal F-18 Labeling 김동욱 인하대학교  
Chemistry for PET Molecular Imaging  
14:30~14:50 온라인 질의 및 패넬토의 김강민 전남대학교병원  
표이영 경상대학교  
김지혜 전남대학교병원

### Session 4 The Role of Molecular Imaging in Drug Discovery

14:50~15:00 Coffee and Break 좌장: 강건욱 서울대학교  
15:00~15:30 분자영상을 이용한 신약개발 가속화 박현수 서울대학교  
15:30~16:00 원자력의학원에서의 방사성의약품 임일환 원자력연구원  
신약개발 경험 이대현 단국대학교  
김세형 호산전남대학교병원  
유수종 호산전남대학교병원  
16:00~16:20 온라인 질의 및 패넬토의 김지혜 전남대학교병원  
16:20~16:30 폐회사

## 2023 MIND

### 2023 Molecular Imaging New drug Development center Symposium

Theme The Present and Future of Nuclear Medicine Therapy

## 2023 분자영상신약개발센터심포지엄

핵의학 치료의 현재와 미래

2023. 11. 13(MON) 08:30~17:30

On-Line(Zoom Only)



**ZOOM LINK**  
ID 880 469 5502  
PW 123456

8:30-8:45 Registration Jahee Kim Chonnam National University Hospital  
8:45-8:55 Opening Ceremony Ho-Chun Song Chonnam National University Hospital  
8:55-9:00 Congratulatory Message Youngkeun Ahn President & CEO, Chonnam National University Hospital

### Plenary lecture

9:00-10:00 Immuno-PET in Ab Drug Discovery Kyung-Han Lee Samsung Medical Center  
10:00-10:20 On-Line Question & Panel discussion Jahee Kim Chonnam National University Hospital  
Sae-Ryung Kang Chonnam National University Hwasun Hospital

Break

### Session 1: Novel imaging tracer

10:30-10:50 Fibroblast Activation Protein-α (FAP): a New Theranostics Sunwoo Lee Chonnam National University  
Target Yun-Sang Lee Seoul National University Hospital  
10:50-11:10 In vivo imaging of invasive aspergillosis with 18F-fluorodeoxyisobutyl positron emission tomography Dong-Yeon Kim Gyeongsang National University  
11:10-11:30 Novel Imaging Tracer:[18F]FSPG Seung-Jun Oh Ulsan National University Hospital  
11:30-11:50 On-Line Question & Panel discussion Ayoung Pyo Gyeongsang National University  
Kangbin Kim Chonnam National University Hospital  
Ji-Yong Park Seoul National University Dental Research Institute  
11:50-14:00 Lunch Sang-Geon Cho Chonnam National University Hospital

### Special Talk : Alpha therapy

14:00-14:30 Alpha-particle based therapies in prostate cancer and NETs Keon Wook Kang Seoul National University Hospital  
14:30-15:00 Alpha-particle approved treatments and novel therapies Mike Sathekge University of Pretoria & Steve Biko Academic Hospital  
Andrew Scott Olivia Newton John Cancer Research Institute, Melbourne  
15:00-15:30 Production of alpha radioisotope and MEDICIS Thierry Stora CERN-MEDICIS, Switzerland  
15:30-15:50 On-Line Question & Panel discussion Seong Young Kwon Chonnam National University Hwasun Hospital  
Su Woong Yoo Chonnam National University Hwasun Hospital  
Kyungdon Choi CM DATA

### Session 2: TARE

16:00-16:20 The Role of TARE in Hepatocellular Carcinoma Treatment: Sun gyu Lee Incheon ST. Mary's Hospital  
Current Insights and Future Directions  
16:20-16:40 Role of TARE in the management of hepatocellular Dongho Hyun Samsung Medical Center  
carcinoma in a tertiary hospital in Korea  
16:40-17:00 Y-90 TARE: Where We Are Kisoo Park Korea University Anam Hospital  
- A Nuclear Medicine Physician's Perspective on Updated Guidelines  
17:00-17:20 On-Line Question & Panel discussion Yang seek Koh Chonnam National University Hwasun Hospital  
Chan Park Chonnam National University Hospital  
Sang-Geon Cho Chonnam National University Hospital  
17:20-17:30 Closing Address Ho-Chun Song Chonnam National University Hospital

Chonnam National University Hospital Nuclear Medicine  
Chonnam National University Hospital Biomedical Research Institute





## **Molecular Imaging New Drug development center**



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