

“¹⁷O Labeled Stable Isotope Water Imaging Symposium”

Program

Date and Time : March 9, 2024 (Sat), 13:00~18:50(JST)

Venue: (Hybrid Format)

(Onsite) School of Medicine Centennial Hall,

Graduate School of Medicine, Hokkaido University

(Online) Zoom

Admission: Free of Charge

¹⁷O Labeled Stable Isotope Water Imaging Symposium

March 9th
Sat 2024
13:00 to 18:50

Admission Free of Charge

Format : Hybrid
School of Medicine Centennial Hall,
Graduate School of Medicine,
Hokkaido University
URL / <https://forms.gle/Nc19qPvCTl5Vy2Dh6>

Pre-registration Online
https://u09web.kuopu.ac.jp/webinar/register/WN_Qr2at8bGh07YUGJYtA

Pre-registration Onsite

Lectures will be broadcast on YouTube after March 9th

Sponsored by TAIYO NIPPON SANCO
Nonprofit organization Medical Image Lab.

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Schedule (JST)

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| Opening Remarks | 13:00- |
| ¹⁷ O Labeled Stable Isotope Water MR Imaging and Aquaporin-4 | 13:10- |
| Water Movement in AQP4-knockout Mouse Brain after MCA Occlusion National Institutes for Quantum Science and Technology / Takayuki OSATA | |
| Functional Analysis of AQP-4 Using Water and Solute Tracers in MRI Radiology, Hokkaido University Hospital / Daisuke KATO | |
| Modulation of Brain Water Dynamics through AQP-4 Regulation and Its Implications for Disease Treatment Strategies Brain Research Institute, Niigata University / Hirotsuka IGARASHI | |
| Intermission | 14:10-14:25 |
| Attempt to Visualize Neurofluid Using Oxygen- ¹⁷ O Labeled Stable Isotope Water | 14:25- |
| Neurofluid MR Imaging using CSF Tracers in Rat Models Radiology, Hokkaido University Hospital / Naoya KINOTA | |
| Analysis of Brain Water Dynamics using H ¹⁷ O MRI in ALS Model Mice Administered ¹⁷ O Labeled Water Central Institute for Experimental Animals / Yui KOMAKI | |
| Cerebrospinal Fluid Dynamics using ¹⁷ O-Labeled Water in <i>Macaca fascicularis</i> Radiology, Shiga University of Medical Science / Yoshiyuki WATANABE | |
| MR Imaging of Neurofluid in Humans using ¹⁷ O-Labeled Water Radiology, Hokkaido University Hospital / Hiroyuki KAMEDA | |
| Intermission | 15:45-16:00 |
| Application of ¹⁷ O Labeled Stable Isotope Water in Human | 16:00- |
| Visualization of Human Intraocular Water Dynamics using 1H-MRI with ¹⁷ O Labeled Water National Institutes for Quantum Science and Technology / Moyoaki TOMIYASU | |
| MR Imaging of Intracranially Administered ¹⁷ O Labeled Water in the Human Inner Ear: Insight into Lymphatic Dynamics and Vestibular Function Department of Radiology Nagoya University, Graduate School of Medicine / Shiroji NAGANAWA | |
| Development of MRI Evaluation Modalities for the Diagnosis of Articular Cartilage Lesions Department of Orthopedic Surgery, Hokkaido University Graduate School of Medicine / Tomohiro ONODERA | |
| Intermission | 17:00-17:15 |
| Integration with Other Fields | 17:15- |
| D ₂ O Containing Organ Preservation Solution Suppresses Cold Storage and Reperfusion Injury: Emerging Needs to Assess Solvent Isotope Effect of D ₂ O Inside and Outside the Body Department of Gastroenterological Surgery 1, Hokkaido University Graduate School of Medicine / Motoi RUMAI | |
| Cryogenic Isotope Microscope from Stars to Life Creative Research Institution, Hokkaido University / Naoya SAKAMOTO | |
| Intermission | 17:55-18:10 |
| Special Lecture | 18:10- |
| Physiological and Pathological Roles of Aquaporin-4 in Glymphatic System Department of Pharmacology, Keio University School of Medicine / Masato YASUI | |
| Closing Remarks | 18:40- |

| Session | Time Allocation | Title | Name | Affiliation |
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| Opening Remarks | 13 : 00~ 13 : 10 | Opening Remarks | Kohsuke KUDO | Department of Diagnostic Imaging, Hokkaido University Graduate School of Medicine |
| Session 1 “ ¹⁷ O Labeled Stable Isotope Water MR Imaging and Aquaporin-4” Chair : Yuji KOMAKI (Central Institute for Experimental Animals) | 13 : 10~ 13 : 30 | Water Movement in AQP-4-knockout Mouse Brain after MCA Occlusion | Takayuki OBATA | National Institutes for Quantum Science and Technology |
| | 13 : 30~ 13 : 50 | Functional Analysis of AQP-4 Using Water and Solute Tracers in MRI | Daisuke KATO | Radiology, Hokkaido University Hospital |
| | 13 : 50~ 14 : 10 | Modulation of Brain Water Dynamics through AQP-4 Regulation and Its Implications for Disease Treatment Strategies | Hironaka IGARASHI | Brain Research Institute, Niigata University |
| Intermission | 14 : 10~ 14 : 25 | | | |
| Session 2 “ Attempt to Visualize Neurofluid Using Oxygen-¹⁷O Labeled Stable Isotope Water ” Chair : Hiroyuki SUGIMORI (Faculty of Health Sciences, Hokkaido University) | 14 : 25~ 14 : 45 | Neurofluid MR Imaging using CSF Tracers in Rat Models | Naoya KINOTA | Radiology, Hokkaido University Hospital |
| | 14 : 45~ 15 : 05 | Analysis of Brain Water Dynamics using H ₂ ¹⁷ O MRI in ALS Model Mice Administered ¹⁷ O Labeled Water | Yuji KOMAKI | Central Institute for Experimental Animals |
| | 15 : 05~ 15 : 25 | Cerebrospinal Fluid Dynamics Using ¹⁷ O-Labeled Water in Macaca Fascicularis | yoshiyuki WATANABE | Radiology, Shiga University of Medical Science |
| | 15 : 25~ 15 : 45 | MR Imaging of Neurofluid in Humans Using ¹⁷ O-Labeled Water | Hiroyuki KAMEDA | Radiology, Hokkaido University Hospital |

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| Intermission 15 : 45~ 16 : 00 | | | | |
| Session 3 “Application of ¹⁷ O Labeled Stable Isotope Water in Human” Chair : Hiroyuki TAKASHIMA (Faculty of Health Sciences, Hokkaido University) | 16 : 00~ 16 : 20 | Visualization of Human Intraocular Water Dynamics using 1H-MRI with ¹⁷ O Labeled Water | Moyoko TOMIYASU | National Institutes for Quantum Science and Technology |
| | 16 : 20~ 16 : 40 | MR Imaging of Intrapympanically Administered ¹⁷ O Labeled Water in the Human Inner Ear: Insight into Lymphatic Dynamics and Vestibular Function | Shinji NAGANAWA | Department of Radiology Nagoya University, Graduate School of Medicine |
| | 16 : 40~ 17 : 00 | Development of MRI Evaluation Modalities for the Diagnosis of Articular Cartilage Lesions | Tomohiro ONODERA | Department of Orthopaedic Surgery, Hokkaido University Graduate School of Medicine |
| Intermission 17 : 00~ 17 : 15 | | | | |
| Session 4 “Integration with Other Fields” Chair : Hiroyuki KAMEDA (Radiology, Hokkaido University Hospital) | 17 : 15~ 17 : 35 | D ₂ O Containing Organ Preservation Solution Suppresses Cold Storage and Reperfusion Injury: Emerging Needs to Assess Solvent Isotope Effect of D ₂ O Inside and Outside the Body | Moto FUKAI | Department of Gastroenterological Surgery 1, Hokkaido University Graduate School of Medicine |
| | 17 : 35~ 17 : 55 | Cryogenic Isotope Microscope from Stars to Life | Naoya SAKAMOTO | Creative Research Institution, Hokkaido University |
| Intermission 17 : 55~ 18 : 10 | | | | |
| Special Lecture Chair : Kohsuke KUDO (Department of Diagnostic Imaging, | 18 : 10~ 18 : 40 | Physiological and Pathological Roles of Aquaporin-4 in Glymphatic System | Masato YASUI | Department of Pharmacology, Keio University School of Medicine |

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| Closing Remarks | 18 : 40~ 18 : 50 | Closing Remarks | Kohsuke KUDO | Department of Diagnostic Imaging, Hokkaido University Graduate School of Medicine |