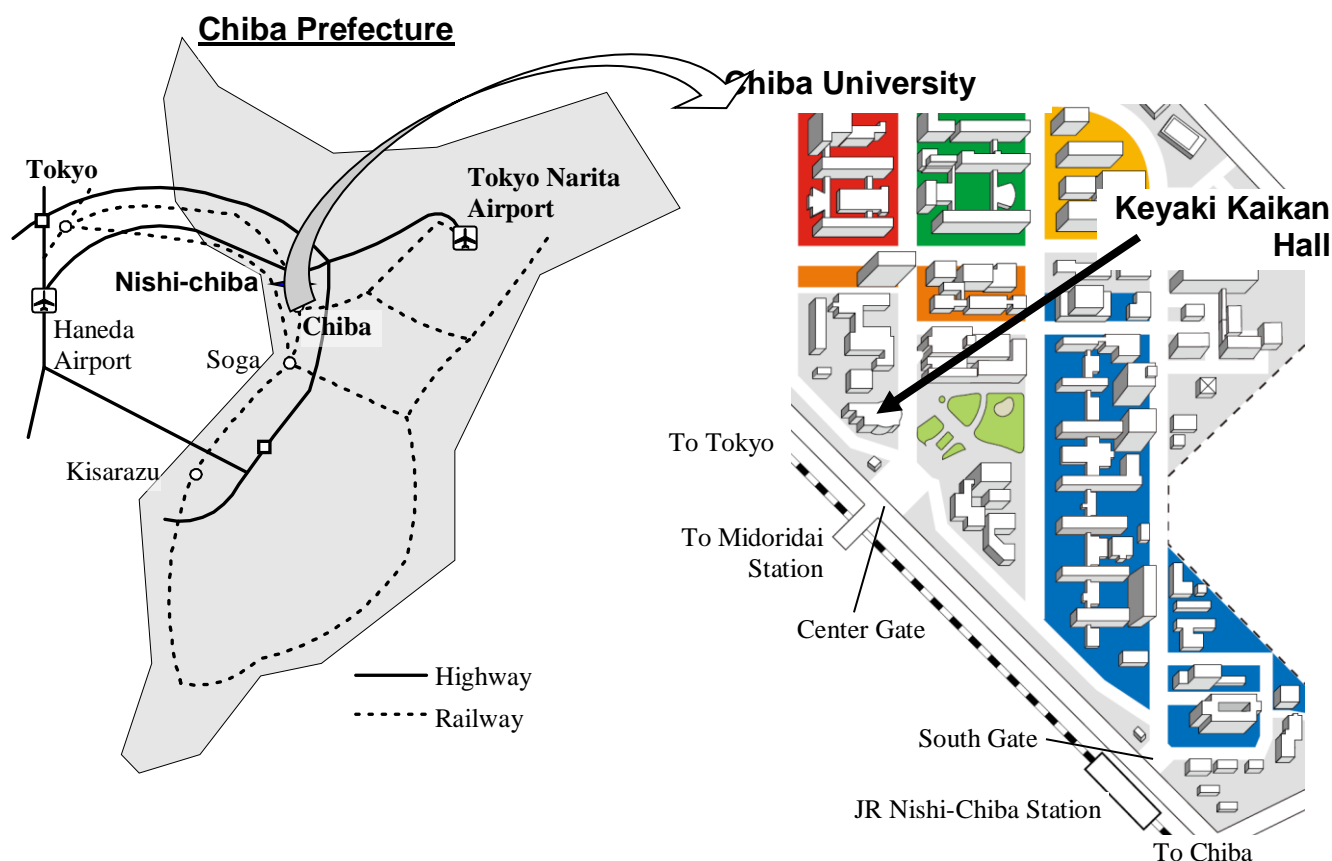


# The 21th Symposium on the Society of Iodine Science

September 14, 2018

Keyaki Kaikan Hall in Chiba University, Chiba, Japan



SPONSORED by **SIS** The Society of Iodine Science

COSPONSOR : The Chemical Society of Japan

Japan Iodine Industry Association

Chiba University

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## *General Information*

The 21th Symposium is organized under the Society of Iodine Science (**SIS**) and is co-sponsored by a number of Chemical Societies and Industries in Japan. Within the framework of the Symposium,

(a) Award lectures/Invited Lectures

(b) Poster Presentations, on original research and applications

(c) Banquet

will be involved.

## Message from SIS Chairman

I am Takashi Fujino, the Chairman of the Society of Iodine Science (SIS). I would like to extend my warmest greetings to you on the occasion of this symposium.

Twenty years have passed since SIS was first established as the Forum of Iodine Utilization (FIU) in 1998. At the time, Japan's iodine production was the second highest in the world after Chile's, but the state of research on iodine utilization was not necessarily robust. Much of the iodine was exported as a simple substance and imported from Europe and the United States in the form of expensive pharmaceutical products. To remedy this situation, FIU was established by volunteers from industry and academia with support from Chiba Prefecture and other entities. The forum was reorganized and given its current name of SIS in 2007.

We believe SIS has achieved steady progress in the development of iodine chemistry and technology by continuing to conduct annual activities such as symposiums, research assistance, awards, and the publication of newsletters and journals.

As a result of the acceptance by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of the application for "Projects of Empirical Research Base for Regional Development" submitted by Chiba University and Chiba Prefecture in 2016, the opening ceremony for Chiba Iodine Resource Innovation Center (CIRIC) on the campus of Chiba University was held in June 2018. At CIRIC, Chiba University and four businesses will conclude a comprehensive partnership agreement to promote open innovation in noncompetitive areas while maintaining a closed environment in competitive areas. CIRIC is most likely the only research facility in the world to be established primarily for the purpose of iodine research. We have high expectations that CIRIC will have a major impact on the field.

SIS will continue to make a wide range of efforts so that everyone involved in iodine science and technology, including researchers and businesses that are not part of the current comprehensive partnership agreement, can enjoy the fruits of open innovation. We believe that the active exchanges of information and diverse discussions held at this symposium are certain to contribute to further progress in the field of iodine.

As in previous years, the symposium features a dense lineup of lectures, poster sessions, award lectures, and other presentations in a wide range of fields. We sincerely hope that each of you will discover something new here, and we look forward to your continued guidance and support for SIS.

Takashi Fujino, Chairman, The Society of Iodine Science  
(President and CEO, Ise Chemicals Corporation)

## Official Language

Official language is Japanese. No official simultaneous translation in English will be offered. Presentations for both the oral and the poster presentation welcome in English.

## Registration Fee

**Deadline Aug. 11, 2018**

Registration Fee (for **SIS** members, including 1 booklet of abstracts; transactions)

Reduced Registration Fee (before August 11, 2018):

|  |  |           |
|--|--|-----------|
| <b>SIS</b> -Members                          |  | 1,000 yen |
| Members of Co-Sponsored Society <sup>☆</sup> |  | 1,000 yen |
| Non-members <sup>☆</sup>                     |  | 3,000 yen |
| Students <sup>☆</sup>                        |  | Free      |

<sup>☆</sup>Non-**SIS** members who require the booklet need to pay 2,000yen.

※Everybody is welcome to join **SIS**. Membership fee is 2,000 yen/year. (Students are 1,000 yen/year)

**After Aug. 12, extra 1,000 yen is needed in every category. After registration by E-mail or Facsimile, you will pay the reduced registration fee at the symposium reception desk (On-site payment).**

Banquet (at KEYAKI Reception Hall, Chiba University):

|                    |           |
|--------------------|-----------|
| Every Participants | 4,000 yen |
| (Every Students)   | 2,000 yen |

*Time Table (September 14th)*

|  |  |
|--|--|
| 9:20~9:25  | <Opening Address > TAKASHI FUJINO ( Chairman of SIS )  |
| Chair : T. Kaiho   |  |
| 9:25~10:05   | <Invited Lecture> HIROYUKI ABE (Japan Tobacco INC.)<br>“Discovery of a MEK Inhibitor: Trametinib DMSO(Mekinist®)”  |
| Chair : A. Itoh  |  |
| 10:05~10:20  | <Oral Presentation> TAKAHIRO HORIBE, S. OHMURA, K. ISHIHARA<br>(Nagoya University)<br>“Selenium-iodine cooperative catalysts for chlorocyclization of tryptamine derivatives”  |
| 10:20~10:35  | <Oral Presentation> SOICHIRO MITA <sup>1</sup> , C. DONG <sup>1</sup> , K. NAKAMURA <sup>1</sup> , T. TANIGUCHI <sup>2</sup> ,<br>S. KODAMA <sup>1</sup> , S. KAWAGUCHI <sup>3</sup> , A. NOMOTO <sup>1</sup> , T. MIZUNO <sup>4</sup> , A. OGAWA <sup>1</sup><br>( <sup>1</sup> Graduate School of Engineering, Osaka Prefecture University, <sup>2</sup> Seika Corporation; <sup>3</sup> Faculty of<br>Agriculture, Saga University, <sup>4</sup> Osaka Research Institute of Industrial Science and Technology)<br>“Aryl Iodide Synthesis Using Aryl Hydrazines and Iodine” |
| 10:35~10:50  | <Oral Presentation> RYOSUKE HARAGUCHI, S. HOSHINO, M. SAKAI, S. TANAZAWA,<br>J. HAMANO, Y. HIRAISHI, K. ENDO, K. TORITA, S. FUKUZAWA<br>(Department of Applied Chemistry, Institute of Science and Engineering, Chuo University)<br>“Development of Highly Active Halogen-Bonding-Donor Catalysts Based on Bulky Cationic<br>Heterocycle”  |
| 10:50~11:05  | <Oral Presentation> KATSUHIKO MORIYAMA, T. HAMADA, K. ISHIDA, H. TOGO<br>(Graduate School of Science, Chiba University)<br>“1,3-Iodo-amination of 2-Methyl Indoles with Electrophilic Iodination Reagents”   |
| Chair : K. Ishihara  |  |
| 11:05~11:45  | <Invited Lecture> WENBO LIU, LU LI, CHAO-JUN LI (McGill University)<br>“Iodine Effect in Transition-Metal Free Photo-Enabled Reaction of Aryl and Alkyl Halides”   |
| 11:50~12:45  | <Short Speeches on Poster Presentations>   |
| <b>POSTER PRESENTATIONS KEYAKI Reception Hall (3F)</b>     |  |
| 12:00~14:55  | Display 12:00~14:55, Presentation, question and answer 13:40~14:55   |
| <b>COMMENDATION CEREMONY and LECTURES KEYAKI Hall (1F)</b> |  |
| 15:05~15:10  | Commendation ceremony  |
| Chair : S. Takahara  |  |
| 15:10~15:45  | <Award Lecture> TORU MIYAJIMA <sup>1</sup> , YUSUKE MATSUBARA <sup>1</sup> , MICHIIHIKO MIYAMOTO <sup>2</sup> ,<br>HIROTO KOMATSU <sup>2</sup> ( <sup>1</sup> SDP Global Co., Ltd, <sup>2</sup> Godō Shigen Co., Ltd)<br>“Development of New Organoiodine Transfer Agent for Iodine Transfer Polymerization in Aqueous<br>Media and Its Application to Superabsorbent Polymer”   |
| Chair : S. Matsumoto                                       |  |
| 15:45~16:00  | <Oral Presentation> TOMOKO YAJIMA <sup>1</sup> , S. NAKAMURA <sup>1</sup> , M. SANO <sup>1</sup> , M. UENO <sup>1</sup> , T. KANBARA <sup>2</sup><br>( <sup>1</sup> Faculty of Science, Ochanomizu University; <sup>2</sup> Daikin Industry Ltd.)<br>“Synthesis of Alkyl Iodide Initiators based on the photoinduced iodo-perfluoroalkylation”   |
| 16:00~16:15  | <Oral Presentation> Y. MATSUI <sup>1,2</sup> , A. SAKAI <sup>1</sup> , S. NISHIDA <sup>1</sup> , T. ARI <sup>3</sup> , E. OHTA <sup>1,2</sup> ,<br>HIROSHI IKEDA <sup>1,2</sup><br>( <sup>1</sup> Grad. Sch. of Eng., Osaka Pref. Univ.; <sup>2</sup> RIMED, Osaka Pref. Univ.; <sup>3</sup> Sch. of Eng., Osaka Pref. Univ.)<br>“Creation of Room-temperature Phosphorescent Crystals Employing Heavy Atom Effect of Iodine”  |
| 16:15~16:30  | <Oral Presentation> SHOZO YANAGIDA, O. YOSHIKAWA, T. KIDA (Osaka Univ. and M3 Inc)<br>“DFT-based Verification and prediction of hypervalent and halogen-bonding in iodine derivative”  |
| Chair : T. Imakubo   |  |
| 16:30~17:10  | <Invited Lecture> FRANCK MEYER (Université Libre de Bruxelles)<br>“Halogen Bonding: A Reliable Tool in Crystal Engineering and Materials Science”  |
| 17:30~19:00  | <b>BANQUET KEYAKI Reception Hall (3F)</b>  |

An introduction by the chairman and a five minute question-and-answer period are included for the every lecture.

## Poster Presentation

All posters should be posted between 12:00 and 14:55.

Presenters are requested to be at their papers for discussions:

**“S” mark before the poster number shows to give a short speech on poster presentation.**

| No. | “Title”<br><u>Author</u> , Co-authors (Affiliation)   |
|-----|---|
| S01 | <b>“Hypervalent Iodine(III)-Mediated Decarboxylative Acetoxylation at Tertiary and Benzylic Carbon Centers”</b><br><u>DAICHI OKUMATSU</u> , K. KIYOKAWA, S. MINAKATA<br>(Graduate School of Engineering, Osaka University)  |
| S02 | <b>“Decarboxylative Esterification of <math>\alpha</math>-Ketoacids Mediated by Hypervalent Iodine”</b><br>T. NANJO, <u>NATSUKI KATO</u> , Y. TAKEMOTO<br>(Graduate School of Pharmaceutical Science, Kyoto University)   |
| S03 | <b>“Direct ester introduction method to active methylene compounds using hypervalent iodine compounds”</b><br><u>TSUKINA KINOMURA</u> , N. TADA, E. YAMAGUCHI, A. ITOH<br>(Gifu Pharmaceutical University)  |
| S04 | <b>“Synthesis of ethynyl-1,2-benziodoxol-3(1H)-one (EBX) and N-ethynylation of sulfonamide”</b><br><u>MASAHARU YUDASAKA</u> , N. TADA, E. YAMAGUCHI, A. ITOH<br>(Gifu Pharmaceutical University)  |
| S05 | <b>“Development of Catalytic Cyanation Reagents by Using Hypervalent Iodine Compounds”</b><br><u>GAKU MATSUSHITA</u> , D. TSUJI, S. NAMEKAWA, K. OKAMOTO, K. OHE<br>(Graduate School of Engineering, Kyoto University)  |
| S06 | <b>“Catalytic 3-Amination of Indoles Using Indolyl(aryl)iodonium Imides”</b><br><u>KAZUHIRO WATANABE</u> , K. MORIYAMA<br>(Graduate School of Science, Chiba University)  |
| S07 | <b>“Additive-Free Generation Method of Iminoiodane and Its Application to <math>\alpha</math>-Amination Reaction”</b><br><u>FUMIYA MORISAKI</u> <sup>1</sup> , T. BABA <sup>1</sup> , K. MIYAMOTO <sup>2</sup> , M. UCHIYAMA <sup>2,3</sup> , A. SAITO <sup>1</sup><br>( <sup>1</sup> Graduate School of Engineering, Tokyo University of Agriculture and Technology, <sup>2</sup> Graduate School of Pharmaceutical Sciences, The University of Tokyo, <sup>3</sup> RIKEN) |
| S08 | <b>“Dehydroxymethyl Bromination of Methoxybenzyl Alcohol Using Hypervalent Iodine Reagent”</b><br>A. SHIBATA <sup>1</sup> , S. KITAMOTO <sup>1</sup> , K. FUJIMURA <sup>1</sup> , H. HAMAMOTO <sup>2</sup> , A. NAKAMURA <sup>1</sup> , Y. MIKI <sup>1</sup> , <u>TOMOHIRO MAEGAWA</u> <sup>1</sup><br>( <sup>1</sup> School of Pharmaceutical Sciences, Kindai University; <sup>2</sup> Faculty of Agriculture, Meijo University)  |
| S09 | <b>“Synthesis of Dihydroquinoxalinones via N-H/C-H Coupling with Hypervalent Iodine Reagents”</b><br><u>MASASHI HORIUCHI</u> , K. S. KANYIVA, T. SHIBATA<br>(School of Advanced Science and Engineering, Waseda University)   |
| S10 | <b>“Studies on application of new synthetic method of furooxazole skeleton and development to PPAR ligand synthesis”</b><br><u>HIROAKI ISHIDA</u> , R. KASUGA, T. ITOH, K. YAMAMOTO<br>(Showa Pharmaceutical University)  |
| S11 | <b>“Development of Hypervalent Iodine(III) Induced Glucuronidation Reaction”</b><br>K. MORIMOTO <sup>1,2</sup> , <u>KANA YANASE</u> <sup>1</sup> , I. ODAKA <sup>1</sup> , T. KAJIMOTO <sup>1,2</sup> , Y. KITA <sup>2</sup><br>( <sup>1</sup> College of Pharmaceutical Sciences, Ritsumeikan University, <sup>2</sup> Research Organization of Science and Technology, Ritsumeikan University.)   |
| S12 | <b>“Fluorination Reaction of Chalcones by Hypervalent Iodine/HF Reagents”</b><br><u>KENTO YOSHIDA</u> , J. OYAMADA, T. KITAMURA<br>(Department of Chemistry and Applied Chemistry, Saga University)   |
| 13  | <b>“Bis(aminoimino)binaphthol-Zinc complex catalyzed intermolecular asymmetric iodoesterification”</b><br><u>KODAI HORIGANE</u> , T. ARAI<br>(Graduate School of Science, Chiba University)   |
| S14 | <b>“Asymmetric <math>\alpha</math>-Azidation of <math>\beta</math>-Ketoesters Using Chiral Tin Alkoxide Catalysts”</b><br><u>TORU EBIHARA</u> , M. G. RUSSELL, M. HORIGUCHI, A. YANAGISAWA<br>(Faculty of Science, Graduate School of Science, Chiba University)  |
| S15 | <b>“Thiourea Lewis Base–Halogen-Based Lewis Acid Cooperative Catalysts for Iodochlorination of Alkenes with Using In-situ Generated Iodine Monochloride”</b><br><u>YASUTAKA TSUJI</u> , T. HORIBE, K. ISHIHARA<br>(Nagoya University)   |

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|-----|---|
| S16 | <p><b>“Synthesis of 1,3-Diiodoalkanes by Radical Addition of Diiodomethyl <i>p</i>-Tolyl Sulfone (DMTS) to Alkenes”</b><br/> <u>MINORI TAKINO</u><sup>1</sup>, S. MATSUMOTO<sup>1</sup>, M. AKAZOME<sup>1</sup><br/> (Graduate School of Engineering, Chiba University, Mitsui Chemicals, Inc.)</p>   |
| S17 | <p><b>“Cyclopropanation Reaction of <math>\alpha,\beta</math>-Unsaturated Carbonyl Compounds with Diiodomethyl <i>p</i>-Tolyl Sulfone (DMTS) or Iodoform”</b><br/> <u>KAHORI TAMURA</u><sup>1</sup>, S. MATSUMOTO<sup>1</sup>, M. AKAZOME<sup>1</sup><br/> (Graduate School of Engineering, Chiba University, Mitsui Chemicals, Inc.)</p>   |
| 18  | <p><b>“One-Pot Preparation of Aromatic Amides, 4-Arylthiazoles and 4-Arylimidazoles via Friedel-Crafts Acylation”</b><br/> <u>TAKAHIRO YAMAMOTO</u>, H. TOGO<br/> (Graduate School of Science, Chiba University)</p>  |
| S19 | <p><b>“I<sub>2</sub>-Catalyzed Stereoselective Vicinal Diamination of Olefins”</b><br/> <u>KENYA YAMAMOTO</u>, S. MINAKATA<br/> (Graduate School of Engineering, Osaka University)</p>  |
| 20  | <p><b>“Synthesis of pyrano[3,4-<i>b</i>]pyrrol-7(<i>1H</i>)-one via iodine-mediated cyclization of 3-alkynylated 1<i>H</i>-pyrrole-2-carboxylates”</b><br/> M. KOMURE, <u>TSUTOMU FUKUDA</u>, G. ONODERA, M. KIMURA<br/> (Graduate School of Engineering, Nagasaki University)</p>  |
| 21  | <p><b>“Transition-Metal-Free One-Pot Preparation of Phenanthridines with Iodine and Potassium Carbonate”</b><br/> <u>ATSUHI KISHI</u>, K. MORIYAMA, H. TOGO<br/> (Graduate School of Science, Chiba University)</p>   |
| 22  | <p><b>“Metal-cyanide-free Transformation of Arenes to Aromatic Nitriles with Iodine and aq. Ammonia”</b><br/> <u>KOHEI IMAHASE</u>, H. TOGO<br/> (Graduate School of Science, Chiba University)</p>   |
| S23 | <p><b>“Additive Effect on the Formation of Internal Olefinic Trimer from <math>\alpha</math>-Methylstyrenes with Hydrogen Iodide”</b><br/> <u>TAKEHISA OSEKI</u><sup>1</sup>, M. AKAZOME<sup>1</sup>, Y. OTANI<sup>2</sup>, S. MATSUMOTO<sup>1</sup><br/> (Graduate School of Engineering, Chiba University, <sup>2</sup>Godo Shigen Co., Ltd.)</p>   |
| 24  | <p><b>“Onepot Synthesis of 2,2-Disubstituted 4-Quinazolinones via Vinyl Iodides”</b><br/> <u>SHIN-ICHI KAWAGUCHI</u><sup>1</sup>, K. YAMAGUCHI<sup>2</sup>, M. SONODA<sup>3</sup>, A. OGAWA<sup>2</sup><br/> (<sup>1</sup>Faculty of Agriculture, Saga Univ.; <sup>2</sup>Graduate School of Engineering, Osaka Prefecture Univ.; <sup>3</sup>Graduate School of Life and Environmental Sciences, Osaka Prefecture Univ.)</p>   |
| S25 | <p><b>“Crystal Structures and Halogen Bonds of Thiazoloisoquinolinium Salts”</b><br/> <u>RYUTA SUMIDA</u>, M. AKAZOME, S. MATSUMOTO<br/> (Graduate School of Engineering, Chiba University)</p>   |
| S26 | <p><b>“Synthesis and properties of novel iodine-bonded <math>\pi</math>-donor DIEDO-TSeF”</b><br/> <u>MIDORI YAMANOBE</u>, K. NISHIKAWA, T. IMAKUBO<br/> (Department of Materials Science and Technology, Nagaoka University of Technology)</p>   |
| S27 | <p><b>“Elucidation of adsorption phenomena of halide ions onto carbon materials”</b><br/> <u>YURI HIRANO</u>, T. OHKUBO, Y. KURODA<br/> (Graduate School of Natural Science and Technology, Okayama University)</p>   |
| 28  | <p><b>“The effect of iodine adsorption on magnetism of silicon nanomagnets”</b><br/> <u>TOMOAKI TAKAMATSU</u>, H. KANO<br/> (Graduate School of Science, Chiba University)</p>  |
| S29 | <p><b>“Study of Silver-Iodide Fine-Grain Photographic Materials”</b><br/> KEN-ICHI KUGE<br/> (RI center, Chiba University)</p>  |
| S30 | <p><b>“Reversible 3D radiochromic gel dosimeter based on polyvinyl alcohol-iodine complex(II)”</b><br/> <u>SHIN-ICHIRO HAYASHI</u><sup>1,2</sup>, J.Taño<sup>2</sup>, K. ONO<sup>3</sup>, K. FUJINO<sup>3</sup>, H. YASUDA<sup>2</sup>,<br/> G. WAKABAYASHI<sup>4</sup><br/> (<sup>1</sup>Hiroshima Int. Univ.; <sup>2</sup>Hiroshima Univ.; <sup>3</sup>Hiroshima Heiwa Clinic; <sup>4</sup>Kindai Univ.)</p>  |
| 31  | <p><b>“The history of industrial production of iodide in Japan”</b><br/> <u>YOZEN FUSE</u><sup>1,2</sup>, H. KURUMAZUKA<sup>3</sup>, N. SASAKI<sup>4</sup>, Y. ITO<sup>5</sup>, T. KAIHO<sup>6</sup>, Y. SHISHIBA<sup>2</sup>,<br/> M. IRIE<sup>2</sup><br/> (<sup>1</sup>Department of Pediatrics, Teikyo University School of Medicine;<br/> <sup>2</sup>Foundation for Growth Science; <sup>3</sup>Akkeshi Maritime Memorial; <sup>4</sup>Akkeshi-town Hospital;<br/> <sup>5</sup>Japanese Red Cross Hokkaido College of Nursing; <sup>6</sup>Godo Shigen Co., LTD )</p> |

## *Correspondence*

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