

PROGRAM

7TH INTERNATIONAL SYMPOSIUM ON RADIOHALOGENS

Saturday, September 15, 2012

18:00-20:00 **Registration and Reception**

Sunday, September 16, 2012

07:30-08:30 **Breakfast, Valley Foyer**

08:30 *Welcome*
M. Adam, TRIUMF/UBC, Vancouver, B.C., Canada

SESSION I: HISTORICAL OVERVIEW

Chairperson: M. Adam

08:45 **Invited Talk (IS1)**
**Radiohalogens Then and Now: Seven International
Symposia on Radiohalogens**
L.I. Wiebe
Department of Oncology, Faculty of Medicine & Dentistry
University of Alberta, Edmonton, Canada

Discussion

SESSION II: ADVANCES IN DRUG DEVELOPMENT

09:45 **Invited Talk (IS2)**
**Use of Exploratory IND for Early Phase Clinical Trials
Using PET or SPECT Imaging**
G. Tamagnan
Institute for Neurodegenerative Diseases, New Haven, CT,
USA

Discussion

10:45 *Mid-Morning Break*

11:00 **Invited Talk (IS3)**
TBA
J. Babich, Molecular Insight

Discussion

12:00 *Lunch Break Fitzsimmons Room*

SESSION II Continued:

Chairperson: M. Adam

13:15 **Invited Talk (IS4)**
Diapeutic Radioiodinated Phospholipid Ether Analogs for Imaging and Treatment of Cancer and Cancer Stem Cells
J. Weichert
University of Wisconsin Radiology and Novelos Therapeutics

Discussion

14:15 **Invited Talk (IS5)**
Development of Radioimmunotherapy-Based Conditioning Regimens for Hematopoietic Cell Transplantation (HCT) Using Alpha-Emitter

B. Sandmaier^{1,2}, B.T. Kornblit¹, D.K. Hamlin³, E.B. Santos¹,
M-K Chyan³, and D. S. Wilbur³,

¹Clinica Research, Fred Hutchinson Cancer Research Center, Seattle, WA; ²Dept. of Medicine, University of Washington, Seattle, WA; ³Dept. of Radiation Oncology, University of Washington, Seattle, WA.

Discussion

15:15 *Mid- Afternoon Break*

SESSION III: ISOTOPE PRODUCTION

Chairperson: H. Coenen

15:30 **Invited Talk (IS6)**
New Developments in the Production of Radiohalogens.
I. Spahn
Institut für Neurowissenschaften und Medizin, INM-5:
Nuklearchemie, Forschungszentrum Jülich, D-52425 Jülich, Germany

- 16:15 **Discussion**
- 16:30 CS1 **Production of Radioactive Bromine Isotopes by Deuteron induced Reactions**
K. Breunig, I. Spahn, D. Bier, M. Holschbach, S. Spellerberg, B. Scholten, H.H. Coenen
Institut für Neurowissenschaften und Medizin, INM-5:
Nuklearchemie, Forschungszentrum Jülich, Germany
- 16:45 CS2 **Production of Electrophilic ^{34m}Cl For Use In PET Imaging**
J.W. Engle¹, P.A. Ellison, T.E. Barnhart, D. Murali, O.T. DeJesus, R.J. Nickles
University of Wisconsin, Madison, USA. ¹Current address: Los Alamos National Laboratory, Chemistry Division-Isotopes, Inorganic and Actinides. Los Alamos, NM, USA.
- 17:00 CS3 **New Initiatives at TRIUMF For The Development of ^{211}At -Based Targeted Alpha Therapy**
J. Crawford¹ and T. Ruth²
¹Department of Physics and Astronomy, University of Victoria, BC, Canada; ²Nuclear Medicine Division, TRIUMF, Vancouver, BC, Canada

17:15 *Session Ends*

Monday, September 17, 2012

07:30-8:30 **Breakfast, Valley Foyer**

Session IV: FLUORINE/BASIC CHEMISTRY

Chair: H. Coenen

- 08:30 **Invited Talk (IS7)**
Fluorine-18 Radiochemistry: The Future is Now
M.R. Kilbourn
Division of Nuclear Medicine, Department of Radiology, University of Michigan Medical School, Ann Arbor, MI, 48109

Discussion

- 09:30 CS4 **One Step and One-Pot-Two-Step ^{18}F -Labeling of Peptides and Other Large Molecules**
Y. Li¹, Z. Liu¹, K.S. Lin², F. Benard², D. Yapp², P. Schaffer³,
M. Adam³, T. Ruth³, D. M. Perrin¹
¹UBC, Chemistry Department, ²British Columbia Cancer Agency, ³TRIUMF, Vancouver BC, Canada
- 09:45 CS5 **Development of ^{18}F -labelled Aminosuberic Acid Derivatives For *in vivo* Analysis of Cystine Transporter Expression**
H. Yang¹, B.F. Johnson², M. Rishel², B.D. Lee², K. Kent²,
Q. Miao¹, F. Bénard³, D. Yapp³, J.M. Webster², P. Schaffer¹
¹TRIUMF, ²General Electric, Global Research, Niskayuna, NY, USA, ³The British Columbia Cancer Agency, Vancouver
- 10:00 CS6 **Palladium Catalyst Improves the Yield of Aromatic Nucleophilic Radiofluorination.**
F. Combe, T. Betzel, R. Schibli, P.A. Schubiger,
S.M. Ametamey, S.V. Selivanova
Center for Radiopharmaceutical Sciences, ETH Zurich, Zurich, Switzerland.
- 10:15 CS7 **[^{18}F]Fluorophenyl-L-Amino Acids by Isotopic Exchange on Carbonyl-activated Precursors**
J. Castillo Meleán, J. Ermert, H. H. Coenen
Institut für Neurowissenschaften und Medizin, INM-5:
Nuklearchemie, Forschungszentrum Jülich, Germany

10:30 *Mid-Morning Break*

SESSION V: FLUORINE/AUTOMATION CHEMISTRY

- 10:45 **Invited Talk (IS8)**
Radiofluorination Devices-Such As Synthesizers
M. Müller, ABX advanced biochemical compounds,
Radeberg GERMANY

Discussion

11:45 *Lunch Break Fitzsimmons Room*

SESSION VI: FLUORINE/APPLICATIONS

- 13:00 **Invited Talk (IS9)**
¹⁸F-Labeled Peptides: The Future is Bright
F. Wuest
Department of Oncology, University of Alberta, Edmonton, Canada
- Discussion**
- 14:00 CS8 [¹⁸F]FPyKYNE-Losartan: a New PET Tracer for Imaging AT₁ Receptors
N. Arksey, T. Hadizad¹, R.S. Beanlands and J.N. DaSilva*,
¹National Cardiac PET Centre, University of Ottawa Heart Institute, 40 Ruskin St., Ottawa, ON, Canada, K1Y 4W7;
²Division of Cardiology (Department of Medicine) and Department of Cellular and Molecular Medicine, University of Ottawa, Ottawa, ON, Canada
- 14:15 CS9 Radiosynthesis of Three Classes of GABA_A Radioligand, Transfer to GE FASTlab™ and *in vivo* Evaluation in Rats
A. Jackson, M. Battle, P.A. Jones, W-F Chau, A. Gaeta, D. O' Shea, P. Zheng, W. Trigg,
GE Healthcare, Medical Diagnostics, The Grove Centre, Little Chalfont, UK.
- 14:30 CS10 Synthesis and Evaluation of a (D4) Deuterium Analog of a Potential ¹⁸F PET Radioligand For Imaging PDE10A
D. Donnelly, P. Chow, K. Cao, T. Tran, J. Kim, A. Pena, L.Barreto, D. Kukral, S. Bonacorsi, D. Dischino, J. Bronson, S. Mercer
Radiochemical synthesis, Bristol-Myers Squibb, P.O. Box 4000, Princeton, NJ 08543, USA
- 14:45 CS11 Development of [¹⁸F]Flubatine, a Promising Radiotracer for the Imaging of α4β2 Nicotinic Acetylcholine Receptors (nAChRs)
A. Hoeping¹, R. Smits¹, S. Fischer², A. Hiller², U. Funke², W. Deuther-Conrad², B. Sattler³, J. Steinbach⁴, O. Sabri³, P. Brust²
¹ABX Advanced Biochemical Compounds, Radeberg, Germany
²Neuroradiopharmaceuticals, Helmholtz-Zentrum Dresden-Rossendorf, Research Site Leipzig, Leipzig, Germany,
³Department of Nuclear Medicine, University Hospital Leipzig, Germany⁴, Institute of Radiopharmacy, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany

15:00 *Mid-Afternoon Break*

15:15 **Invited Talk (IS10)**

Glutamine for Imaging Tumor Metabolism

H.F. Kung

Departments of Radiology and Pharmacology, University of Pennsylvania, 3700 Market St., Philadelphia, PA 1910

16:00 CS12 **Biological Evaluation of 3-[18F]Fluoro- α -Methyl-D-Tyrosine (D-[18F]FAMT) as a Novel Amino Acid Tracer for Positron Emission Tomography**

Y. Ohshima¹, H. Hanaoka², H. Tominaga³, Y. Kanai⁴,
K. Kaira³, A. Yamaguchi³, S. Nagamori⁴, N. Oriuchi³,
Y. Tsushima³, K. Endo³, N.S. Ishioka¹

¹Development Quantum Beam Science Directorate, Japan Atomic Energy Agency, Watanuki, Takasaki, Gunma 370-1292, Japan, ²Graduate School of Pharmaceutical Sciences, Chiba University, Inohana, Chuo-ku, Chiba 260-8675, Japan, ³Graduate School of Medicine, Gunma University, Showa-machi, Maebashi, Gunma 371-8511, Japan, ⁴Graduate School of Medicine, Osaka University, Suita, Osaka 565-0871, Japan

16:15 CS13 **Further Development of PET-[¹⁸F]FPyKYNE, a PEG2 Derivative of [¹⁸F]FPyKYNE and [¹⁸F]FPy5yne**

J. Inkster^{1,2}, S. Gosslein³, K-S Lin⁴, M. Pourghiasian⁴,
P. Schaffer¹, F. Benard⁴, B. Guerin³, T. Ruth^{1,4}, and T. Storr²
¹TRIUMF, Nuclear Medicine, Vancouver, BC, ²SFU, Dept. of Chemistry, 8888 University, Burnaby, BC., ³Department of Nuclear Medicine and Radiobiology, CIMS, Universite de Sherbrooke, Sherbrooke, QB, ⁴BC Cancer Agency, Vancouver, BC.

16:30 CS14 **Iodine(III)-Precursors for N.C.A. Radiofluorination of Electron Rich Arenes**

H.H. Coenen, J. Cardinale, F. Kügler, A. Helfer, J. Ermer
Institut für Neurowissenschaften und Medizin, INM-5:
Nuklearchemie, Forschungszentrum Jülich, Germany.

Tuesday, September 18, 2012

07:30-08:30 **Breakfast, Valley Foyer**

SESSION VII BROMINE CHEMISTRY/APPLICATIONS

Chairperson: S. Wilbur

08:30 **Invited Talk (IS11)**
Synthesis and Biological Evaluation of Radiobrominated Compounds for Tumor Imaging.
S. Watanabe
Quantum Beam Science Directorate, Japan Atomic Energy Agency (JAEA), Gunma, Takasaki 370-1292, Japan

09:15 **CS15 Synthesis of a Biologically Active Peptide Containing Radiohalogenated Phenylalanine by Electrophilic Destannylation Reaction**
Sh. Watanabe¹, I. Nishinaka², I. Sasaki¹, K. Yamada³, Sa. Watanabe¹, Y. Sugo¹, H. Hanaoka⁴, K. Hashimoto¹, and N.S. Ishioka¹
¹Quantum Beam Science Directorate, and ²Advanced Science Research Center, Japan Atomic Energy Agency, ³Department of Chemistry and Chemical Biology, Gunma University Graduate School of Engineering, ⁴Department of Molecular Imaging and Radiotherapy, Chiba University Graduate School of Pharmaceutical Science

09:30 **Invited Talk (IS12)**
Syntheses, Structures, and Radiolabeling of Commercially Significant Iodinated Species
Dennis Wester, Nordion Inc.

10:15 **Discussion**

10:30 *Break*

SESSION VIII IODINE-BORON

10:45 **Invited Talk (IS13)**
Boron-Based and Microfluidics Radiohalogenation Reactions
G.W. Kabalka
Department of Chemistry and Radiology, University of Tennessee, Knoxville, TN 37996-1600, USA

11:30 **Discussion**

- 11:45 **CS16 Isotope Exchange Yield Optimization of ^{124}I -NM404 for Clinical Trials**
M. Dawson, M. Longino, A. Pinchuk, N. Stehle, and
J. Weichert
Novelos Therapeutics and the University of Wisconsin
Radiology Department, Madison Wisconsin
- 12:00 **CS17 ^{123}I An Ideal Radionuclide for Pharmacokinetic Studies of Coral Snake Neurotoxin by SPECT/CT**
I. Vergara¹, L.A. Medina^{2,3}, A. Alagon¹
¹Department of Molecular Medicine and Bioprocess, Instituto de Biotecnologia UNAM, Cuernavaca, Mor. Mexico,
²Dosimetry and Medical Physics Group, Instituto de Fisica, UNAM, Mexico D.F., Mexico, ³Medical Physics Laboratory, Unidad, de Investigacion Biomedica en Cancer INCan-UNAM, Insituto Nacional de Cancerologia, Mexico, DF, Mexico
- 12:15 **CS18 Radiolabeling Short Peptides That Have a Potencial as Imaging Radiotracers.**
M. Al-Qahtani and Y. Al-Malki
Cyclotron and Radiopharmaceuticals Department, King Faisal Specialist Hospital and Research Center-Riyadh, Saudi Arabia
- 12:45 **MEET AT GONDOLA FOR PICTURES**
- 13:15 **BBQ LUNCH ON MOUNTAIN**

Wednesday, September 19, 2012

07:30-08:30 **Breakfast, Valley Foyer**

SESSION IX: ASTATINE CHEMISTRY

Chairperson: S. Wilbur

08:30 **Invited Talk (IS14)**
Aspects of Astatine Chemistry: New Methods to Solve Old Problems
G-J. Meyer
Clinic F. Nuclear Medicine, Hannover Medical School, Germany

09:15 **Discussion**

- 09:30 **Invited Talk (IS15)**
Wet Chemistry Isolation of Na[²¹¹At]At: An Overview of the Isolation Process and Subsequent Labelling Reactions
D.S. Wilbur, D.K. Hamlin, M-K Chyan, and E.R. Balkin,
Department of Radiation Oncology, University of Washington,
Seattle, WA
- 10:15 **Discussion**
- 10:30 *Mid-Morning Break*
- 10:45 **CS19 Perils and Pitfalls of Developing a Semi-Automated System for the Isolation and Purification of Na[²¹¹At]At**
E.R. Balkin, D. Dadochov, D.K. Hamlin, S. Pal and
D.S. Wilbur
Department of Radiation Oncology, University of Washington,
Seattle, WA
- 11:00 **CS20 Synthesis and Radioiodination of Branched-Chain Polyethylene Glycol Derivatives of Biotin**
M-K Chyan¹, D.K. Hamlin¹, P.D. Davis⁴, J.M. Pagel^{2,3},
O.W. Press^{2,3}, and D.S. Wilbur¹.
¹Department of Radiation Oncology and ²Medicine, University
of Washington, Seattle, WA, ³Fred Hutchinson Cancer
Research Center, Seattle, WA, ⁴Quanta BioDesign, Powell,
Ohio, 43065.
- 11:15 **CS21 Direct Labeling of Antibodies with ²¹¹At: Scale-up in Preparation of Future Clinical Studies**
D.K. Hamlin¹, M-K Chyan¹, E.R. Balkin¹, B.M. Sandmaier^{2,3},
O.W. Press^{2,3}, J.M. Pagel^{2,3}, and D.S. Wilbur¹
¹Department of Radiation Oncology and ²Medicine, University
of Washington, Seattle, WA; ³Fred Hutchinson Cancer
Research Center, Seattle, WA.
- 11:30 *Closing Remarks*