

PROGRAM

5TH INTERNATIONAL SYMPOSIUM ON RADIOHALOGENS

Saturday, September 11, 2004

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

Sunday, September 12, 2004

07:30 *Registration Opens*

07:55 **INTRODUCTION**

Michael Adam, TRIUMF/UBC, Vancouver, BC, Canada

SESSION I: ISOTOPE PRODUCTION

Chairperson: T. Ruth

08:00 **Invited Talk (IS1)**

Production of Radiohalogens: Where's the Beef

Thomas J. Ruth, TRIUMF, Vancouver, BC, Canada

Contributed Talks

08:45 CS1 **New Nuclear Data for Production of ⁷⁶Br and ¹²⁴I**

H.H. Coenen¹, B. Scholten¹, H. E. Hassan¹, F. Tárkányi², N. van der Walt³, S. M. Qaim¹

¹Heinz Coenen, Institut für Nuklearchemie, Forschungszentrum, Jülich, Germany

²Institute of Nuclear Research, Hungarian Academy of Sciences, Debrecen, Hungary

³Radionuclide Prod, I Themba LABS, Somerset West, South Africa

09:00 CS2 **Production of ^{38,39}Cl for Botany Tracer Studies**

S. Lapi^{*1,2}, T. J. Ruth²

¹Simon Fraser University, Burnaby, BC, Canada

²TRIUMF, Vancouver, B.C., Canada

09:15 CS3 **Strategies in Choosing Binary Alloys for the Production of I-124: Proof-of-Principle studies using Al₂Te₃**

J.A. Nye and R.J. Nickles

Department of Medical Physics, University of Wisconsin, Madison, WI, USA

09:30 CS4 **Cyclotron Production of iodine-123**

Zhou Wei, Wang Yongxian, Yin Duanzhi

Shanghai Institute of Applied Physics, Chinese Academy of Sciences, Shanghai, P. R. China

09:45 CS5 **2-¹⁸F]FDG Production Using a High Intensity Laser-Induced Fluorine-18**
J M Gillies^{1*}, K.W.D Ledingham³, P.McKenna³, T.McCanny³,
S.Shimizu³, J.Yang³, L.Robson³, J. Bailey¹, G.N. Chimon², R.J.Clarke⁴,
P.A.Norreys⁴, J.Zweit^{1,2}
¹CR-UK/UMIST, Christie Hospital, Manchester
²Department of Instrumentation and Analytical Sciences, UMIST,
Manchester, UK
³University of Strathclyde, Glasgow, Scotland.
⁴Central Laser Facility, CLCR Rutherford Appleton Laboratory, UK

10:00 **Discussion**

10:15 *Break*

SESSION II: FLUORINE – BASIC CHEMISTRY

Chairperson: M.R. Kilbourn

10:30 **Invited Talk (IS2)**
Fluorine-18 Labelled Fluoropyridines: Advances in Radiopharmaceutical Design
Frederic Dolle, Service Hospitalier Frederic Joliot, Orsay, France

11:15 **Invited Talk (IS3)**
Improved NCA F-18 Fluorination of Electron Rich Arenes via Aryl-Heteroaryl-Iodonium Salts
T. Ross, Institut für Nuklearchemie, Forschungszentrum, Jülich, Germany

11:45 *Lunch Break*

SESSION III: FLUORINE CHEMISTRY AND APPLICATIONS

Chairperson: H.H. Coenen

13:00 **Invited Talk (IS4)**
Radiohalogenated Tropanes: Imaging Agents for the Serotonin Transporter
Mark Goodman, Emory University School of Medicine, Atlanta, GA, USA

Contributed Talks

13:45 CS6 **Fluorine-18 and Iodine-124 Radiohalogenation Using a polymer Micro-Reactor**
J M Gillies^{1*}, C. Prenant¹, J.Zweit^{1,2}
¹CR-UK/UMIST, Paterson Inst. for Cancer Research, Christie Hospital, Manchester
²UMIST, Manchester, UK

- 14:00 CS7 **Initial Assessment of Different Methods of [¹⁸F]F⁻ Radiofluorination in a Small Volume: A Step Towards Miniaturization of Radiosynthesis**
 Andrei R. Studenov,* Kenneth R. Buckley, Michael J. Adam, Salma Jivan, Suzy Lapi, Wayne A. Sievers, Thomas J. Ruth
 TRIUMF, Vancouver, B.C, Canada
- 14:15 CS8 **An improved radiochemical synthesis of N-succinimidyl 4-¹⁸F-(fluoromethyl)benzoate and its application**
 Cheng Deng-Feng, Yin Duan-Zhi*, Zhou Wei, Li Jun-Ling, Wang Yong-Xian
 Radiopharmaceuticals Centre, Shanghai Institute of Applied Physics Research, the Chinese Academy of Science, Shanghai, PR China.
- 14:30 CS9 **Radiosynthesis of 3-(3-[¹⁸F] Fluoropropoxy)-4-(benzyloxy)-N-[(1-(dimethylamino)cyclopentyl)methyl]-5-methoxybenzamide, a PET Radiotracer for the Glycine Transporters GlyT-2**
 Haibin Tian, Ronald M. Baldwin*, Rebecca Vogel, Louis Amici, Gilles Tamagnan,
 Yale University School of Medicine, Yale VA, USA
 Veterans Affairs Medical Center, West Haven, CT, USA

14:45 *Break*

Contributed Talks

- 15:00 CS10 **Radiosynthesis and PET studies of ¹⁸F-EF5 as a hypoxia imaging agent in spontaneous canine tumours**
 Ametamey SM*, Wyss MT, Blagoev M, Allemann K¹, Evans SM², Koch CJ², Bruehlmeier M, Schubiger PA, Kaser-Hotz B¹
 *Center for Radiopharmaceutical Science, Villigen, Switzerland
¹Faculty of Veterinary Medicine, University Zurich, Switzerland
²School of Medicine, University of Pennsylvania, Philadelphia, PA USA
- 15:15 CS11 **Examining the Use of PET and ¹⁸F-EF5 to Evaluate Tumour Hypoxia**
 Donald Yapp^{1*}, Thomas Ruth², Michael Adam², Cameron Koch³, Martin Gleave⁴, Kirsten Skov¹
¹Advanced Therapeutics, BC Cancer Agency, Vancouver, BC, Canada
²TRIUMF, Vancouver, BC
³U of Pennsylvania (PA, USA), ⁴
⁴The Prostate Centre at VGH. Vancouver, BC, Canada
- 15:30 CS12 **[¹⁸F]Fluorine substitution at the 16 α -position of fulvestrant (Faslodex; ICI 182,780): Impact on estrogen receptor binding and target tissue uptake.**
 Y. Seimbille, F. Bénard, J. Rousseau, E. Pepin, A. Aliaga, G. Tessier and J. E. van Lier*
 Sherbrooke PET Center, Université de Sherbrooke, Sherbrooke, Québec, Canada

- 15:45 CS13 **Studies of Tumour Microenvironment and Metabolic Activity in Breast Cancer Xenografts by Non-Invasive Small Animal PET and MRI**
 Wieslawa H. Dragowska¹, Thomas J. Ruth², Michael J. Adam², Piotr Kozlowski³, Kirsten Skov¹, Marcel B. Bally¹ and Donald T.T. Yapp^{1*}
¹B.C. Cancer Agency; Vancouver, BC, Canada
²TRIUMF, Vancouver, BC, Canada
³The Prostate Center at VGH, Vancouver, BC, Canada
- 16:00 CS14 **¹⁸F-FESB: A novel ¹⁸F-labelled PET tracer for β -amyloid plaques, its synthesis and automated radiofluorination**
 Piyush Kumar^{1*}, Weizhong Zheng², Stephen A. McQuarrie^{1,2}, Jack H. Jhamandas² and Leonard I. Wiebe²
¹Cross Cancer Institute, Edmonton, Alberta, Canada
²University of Alberta, Edmonton, Alberta, Canada
- 16:15 CS15 **Fluorine-18 Labeling and Baboon PET Imaging of MCL322 and MCL301, Novel Tropane Dopamine Ligands**
 Ronald M. Baldwin,^{1,2} Kelly P. Cosgrove,^{1,2} Julie K. Staley,^{1,2} Rebecca S. Vogel,^{1,2} Louis Amici,^{1,2} Eric Brenner,^{1,2} Haibin Tian,^{1,2} Xuemei Peng,^{3,4} Ao Zhang,³ John L. Neumeyer,^{3,4} and Gilles D. Tamagnan^{1,2}
¹Yale University School of Medicine
²VAHCS West Haven CT
³ADARC, McLean Hospital, Harvard Medical School, MA
⁴NPI, McLean Hospital, Belmont MA.

16:30 **WORKSHOP I - Fluorine**
 Chairperson: M. Kilbourn

17:30 *Session Ends*

Monday, September 13, 2004

SESSION IV: IODINE CHEMISTRY AND APPLICATIONS

Chairpersons: H. Kung and G. Kabalka

- 08:15 **Invited Talk (IS5)**
Synthesis of I-124 Labeled Imaging Agents
 Hank Kung, University of Pennsylvania, Philadelphia PA, USA
- 09:00 **Invited Talk (IS6)**
Development of Facile No-Carrier Added Radioiodination Procedures
 George Kabalka, University of Tennessee, Knoxville, TN, USA

Contributed Talks

- 09:45 CS16 **A Polymer-Supported Stannyl Propenyl Mesylate: A Platform for Radiohalogenation of Amines**
M.K.J. Gagnon, D.H. Hunter
The University of Western Ontario, London, Ontario, Canada
- 10:00 CS17 **Custom Labelling with Radioiodines and Custom Synthesis of Precursors for Medical Imaging**
S.Lu, JML Biopharm Inc., Vancouver, BC, Canada
- 10:15 CS18 **A Method for Direct Radioiodination of Boron Cage Pendant Groups on Proteins**
Donald K. Hamlin, Ming-Kuan Chyan, and D. Scott Wilbur
University of Washington, Seattle, WA, USA

10:30 **Discussion**

10:45 Break

SESSION V: IODINE CHEMISTRY AND APPLICATIONS

Chairperson: H. VanBrocklin

11:00 **Invited Talk (IS7)**

Radioiodines: Versatile Radionuclides for Molecular Medicine Applications

Henry VanBrocklin, Lawrence Berkeley National Laboratory, Berkeley, CA, USA

Contributed Talks

- 11:45 CS19 **Synthesis and in vitro evaluation of O⁶-3[¹³¹/¹²⁵I]iodobenzyl-2'-deoxyguanosine ([¹³¹/¹²⁵I]IBdG), a potential agent for the quantification of alkylguanine-DNA alkyltransferase (AGT)**
S. Shankar*, D.J. Affleck, P.C. Welsh, M.R. Zalutsky[†], and G. Vaidyanathan[†].
[†] Duke University Medical Center, Durham, NC, USA
- 12:00 CS20 **Radioiodination of high specific activity β-CIT with ¹²³I**
Sami S. Zoghbi,^{1,2,3*} Gilles D. Tamagnan,^{1,2} Yolanda Zea-Ponce,^{1,2}
Robert B. Innis,^{1,2,3} Ronald M. Baldwin^{1,2}
¹Yale University School of Medicine, USA
²VAHCS, West Haven, CT, USA
³MIB/NIMH, Bethesda, MD, USA

12:15 *Lunch Break*

SESSION VI: IODINE CHEMISTRY AND APPLICATIONS

Chairperson: H. VanBrocklin

Contributed Talks

- 13:30 CS21 **Small Molecule Inhibition of Viral Fusion of Respiratory Syncytial Virus (RSV) -Targeting the Binding Pocket within the Trimer-of-Hairpins**
C. Cianci, D.R. Langley, D.D. Dischino*, Y. Sun, K.-L. Yu¹, A. Stanley, J Roach, Z. Li, R. Dalterio, R. Colonno, N. Meanwell, and M. Krystal
Bristol-Myers Squibb, Wallingford, CT, USA
- 13:45 CS22 **Radioiodination of 3-Hydroxy-4-pyridinones**
M. Bowen, T. Storr, D. Green, K. Böhmerle, M. Adam and C. Orvig
UBC & TRIUMF, Vancouver, BC, Canada
- 14:00 CS23 **A Comparison of the Synthesis, Iodination, and Biodistribution of Compounds Which Contain a Decaborate(2-) or Dodecaborate(2-) Functional Group**
Ming-Kuan Chyan, Donald K. Hamlin, and D. Scott Wilbur
University of Washington, Seattle, WA, USA
- 14:15 CS24 **¹²³IJYP428, First SPECT Imaging Agent of mGluR5 Receptors. Evaluation in Nonhuman Primate**
David Alagille¹, Kelly Cosgrove¹, Ronald Baldwin¹, Louis Amici¹, Julie Staley¹, Gilles Tamagnan^{1,2*}.
¹Yale University and VA CT HCS, West Haven, CT, USA.
²Institute for Neurodegenerative Disorders, New Haven, CT, USA.
- 14:30 CS25 **A Flexible Strategy for Radiolabelling Insulin with Radiohalogens**
K. J. Guenther^a, P. Schaffer^a, S. Yoganathan^a, R. Chirakal^a, M. Dolovich^a, J. Zubieta^b, S. R. Banerjee^b, J. W. Babich^c, J. F. Valliant^a
^aMcMaster University, Hamilton, ON, Canada
^bSyracuse University, Syracuse, NY, USA
^cMolecular Insight Pharmaceuticals Inc., Cambridge, MA, USA
- 14:45 CS26 **New Approach of Using Artificial Neural Networks for Crosstalk Correction in Simultaneous Dual-Radionuclide SPECT: A Monte Carlo Study**
Huofa Chen[†], Xiaoming Zheng
Charles Sturt University, Wagga Wagga, NSW, Australia

15:00 *Break*

15:15 **Discusson**

15:30 **WORKSHOP II - Iodine**

Chairperson: Henry VanBrocklin

16:45 Session ends

Tuesday, September 14, 2004

SESSION VII: BROMINE CHEMISTRY AND APPLICATIONS

Chairpersons: D.S. Wilbur and M. Welch

- 08:30 **Invited Talk (IS8)**
**Progress in the Development and Evaluation of New
Radiopharmaceuticals Labeled with Iodine-124 and Bromine-76 at
Washington University**
Michael J. Welch, Washington University School of Medicine, St. Louis, MO,
USA
- 09:15 **Contributed Talk**
CS27 **A Comparison of Distillation Methods for the Recovery of
Bromine-76**
D.H. Sultan, D.J. Rowland, R. Laforest, M.J. Welch
Washington University School of Medicine, St. Louis, MO, USA
- 09:30 **Invited Talk (IS9)**
**Astatinated Molecule Stability In-Vivo: The Challenge of Obtaining High
Stability Without Affection the Carrier Molecule.**
Scott Wilbur, University of Washington, Seattle, WA, USA
- 10:15 **Invited Talk (IS10)**
Clinical Use of At-211
Ganesan Vaidyanathan, Duke University Medical Center, Durham, NC, USA
- 11:00 **Discussion**
- 11:15 *Break*
- 11:30 **WORKSHOP III - At and Br**
Chairpersons: G. Vaidyanathan, M. Welch
- 12:45 MEET AT GONDOLA FOR PICTURES
- 13:15 *BBQ on Mountain*

Wednesday, September 15, 2004

SESSION VIII: THERAPY

Chairperson: B. Abeysekera

08:45 **Invited Talk (IS11)**

Radiohalogen-Based Targeted Therapies

Amin Kassis, Harvard Medical School, Boston, MA, USA

Contributed Talks

09:30

CS28 **Auger therapy for prostate cancer**

Matthew N. Fedoruk¹, Hayes Dougan², Charles M. Ludgate³, and
Colleen C. Nelson¹

¹The Prostate Centre at VGH, UBC, Vancouver, BC, Canada

²TRIUMF, UBC, Vancouver, BC, Canada

³BC Cancer Agency, Victoria, BC, Canada

09:45

CS29 **Preliminary Clinical Imaging and Pharmacokinetic Results with
NM404 in Non-Small Cell Lung Cancer**

M.A. Longino*¹, J.H. Schiller², R.R. Hovey-Anderson¹, S.B. Perlman¹,
A.N. Pinchuk¹ and J.P. Weichert¹

The University of Wisconsin, Madison, WI, USA

10:00

Discussion

10:15

Break

SESSION IX: DRUG DEVELOPMENT

Chairperson: T. Hamill

10:30

Invited Talk (IS12)

PET in Drug Discovery and Development: A Pharmaceutical Company's Perspective

T. Hamill, Merck Research Laboratories, West Point, PA, USA

11:15

WORKSHOP IV – Industrial Issues

Chairperson: Brian Abeysekera

12:30

Closing Remarks