ISTR2019

International Symposium on Trends in Radiopharmaceuticals

PROGRAMME

28 October – 1 November 2019
Vienna, Austria

IAEA
International Atomic Energy Agency
Atoms for Peace and Development

International Symposium on

Trends in Radiopharmaceuticals

28 October–1 November 2019

Vienna, Austria

SCIENTIFIC COMMITTEE

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Miguel Ávila Rodríguez	Mexico
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Mouldi Saidi	Tunisia
Oscar Pozzi	Argentina
Philip Elsinga	The Netherlands
Raisa Krasikova	Russian Federation
Renata Mikolajczak	Poland
Rene Leyva Montana	Cuba
Sabine Kopp	World Health Organization
Salah Eddine Bouyoucef	Algeria
Serge Lyashchenko	United States of America
Sietske Rubow	South Africa
Suzanne Lapi	United States of America
Syed M. Qaim	Germany
Tamer Sakr	Egypt
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Names are listed alphabetically

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TIMETABLE

ISTR 2019 - DRAFT PROGRAMME AT A GLANCE						
	Monday 28-10-2019	Tuesday 29-10-2019	Wednesday 30-10-2019		Thursday 31-10-2019		Friday 1-11-2019
09:00 – 10:30	Registration (8:00 -9:30) Opening Session (9:30-10:30)	S4. Production of Radiopharmaceuticals: Theranostic	S7-A. Production of Radiopharmaceuticals: PET	S7-B. Parallel Session: Clinical Advances in Nuclear Medicine	S11-A. Production of Alpha Emitters and Radiopharmaceuticals	S11-B. Parallel Session: Technical Cooperation Success Stories	S15. Education in Radiopharmacy
10:30 11:00	Morning Coffee Break						
11:00 12:30	S1. Production of medical radioisotopes: Research Reactor	S5. Production of Radiopharmaceuticals: SPECT	S8. QA/QC/Pre-clinical		S12. Emerging Radioisotopes for Radiopharmacy		WNU Olympiad Finals
12:30 14:00	Lunch	Working Lunch: MILabs (12:45-13:45)	Lunch (12:30-14:00)				
14:00 15:30	S2. Production of Medical Radioisotopes: Accelerators	Poster Session I	S9. Health Regulations: Production of Radiopharmaceuticals		Poster Session II		Closing Session/Awards Ceremony
15:30 16:00	Coffee Break						
16:00 17:30	S3. Production of Medical Radioisotopes: Generators (Focus on Mo-99)	S6. Production of Radiopharmaceuticals: Therapy	S10. New Trends in Radiopharmaceuticals: Chemistry		S13. Radiopharmacy Installations		
18:00 20:00	Welcome Reception	Side Event: India	Side Event: Women in Radiopharmaceutical Sciences: Challenges and Opportunities		S14. Databases and Apps (17:30-18:30)		

Boardroom B/M1 | M2 | MO2

Monday 28 October 2019

REG 08:00-9:30 Symposium Registration

Venue Entrance M–Building

OS 09:30-10:30 Opening Session

Venue Board Room B/M1

T.Sec J. Osso Junior

Time	ID	Presenter	Country/Org	Title
09:30	OS-01	C. Feruta	IAEA	Opening Remarks by Acting Director General
09:40	OS-02	N. Mokhtar	IAEA	Welcome by Deputy Director General, Head of Department of Nuclear Sciences and Applications
09:50	OS-03	M. Abdel-Wahab	IAEA	Welcome by Director, Division of Human Health
09:55	OS-04	M. Denecke	IAEA	Welcome by Director, Division of Physical and Chemical Sciences
10:00	OS-05	S. Lapi	United States of America	From isotopes to images: radioactive materials as tools in medicine

S1 11:00-12:30 Production of medical radioisotopes: Research Reactor

Venue Board Room B/M1

Chair: S. Lapi

T.Sec: A. Jalilian

Time	ID	Presenter	Country/Org	Title
11:00	S1-01	M. Venkatesh	India	Production of reactor-based radioisotopes: an international scenario
11:25	S1-02	R. Mikolajczak	Poland	Production and supply of medical radioisotopes: a Polish experience
11:45	S1-03	J.L. Crudo	Argentina	Laboratory scale production of medium specific activity ^{177}Lu (carrier added) through the [^{176}Lu (n,γ) ^{177}Lu] nuclear reaction under standardized conditions
12:00	S1-04	B. Ocampo-García	Mexico	Synthesis and neutron activation of Lu_2O_3 nanoparticles functionalized with target specific peptides
12:15	S1-05	T. Tielens	The Netherlands	Towards a robust supply chain for medical radioisotopes

S2 14:00-15:30 Production of medical radioisotopes: Accelerators

Venue Board Room B/M1
Chair: M. Venkatesh
T.Sec: A. Korde

Time	ID	Presenter	Country/Org	Title
14:00	S2-01	S.M. Qaim	Germany	Accelerator based production of non-standard positron emitters and therapeutic radionuclides
14:25	S2-02	S. Lapi	United States of America	Production of radiometals using a medical 24MeV cyclotron
14:45	S2-03	A. Abrunhosa	Portugal	Production of radiometals using liquid targets: status and perspectives
15:00	S2-04	J. H. Park	Republic of Korea	Radioisotope production and development with 30MeV cyclotron
15:15	S2-05	V. Radchenko	Canada	Production and application of ^{225}Ac/^{213}Bi: TRIUMF experience and perspectives

S3 16:00-17:30 Production of medical radioisotopes: Generators

Venue Board Room B/M1
Chair: R. Mikolajczak
T.Sec: V. Starovoitova

Time	ID	Presenter	Country/Org	Title
16:00	S3-01	J. Osso Junior	IAEA	The role of the IAEA on the supply of ^{99}Mo
16:15	S3-02	B. Grimshaw	IAEA	Nuclear safeguards in radiopharmaceutical facilities
16:30	S3-03	C. Cutler	United States of America	Supply of ^{99}Mo: focus on US
16:55	S3-04	B. Zhuikov	Russian Federation	Radionuclide production at high energy accelerators: the new possibilities for radioisotope generators
17:15	S3-05	R. Walczak	Poland	Cyclotron production of ^{47}Ca for ^{47}Ca/^{47}Sc generator

18:00-20:00 Welcome Reception

Venue MOE

Tuesday 29 October 2019

S4 09:00-10:30 Production of radiopharmaceuticals: Theranostic

Venue Board Room B/M1
Chair: A. Duatti
T.Sec: J. Osso Junior

Time	ID	Presenter	Country/Org	Title
09:00	S4-01	J. Lewis	United States of America	Development and application of monoclonal antibody-based radiopharmaceuticals
09:25	S4-02	C. Decristoforo	Austria	Theranostic radiopharmacy
09:45	S4-03	V. Gadelshin	Germany	Innovative medical radioisotopes for theranostic application, and how they are produced
10:00	S4-04	B. Alirezapour	Islamic Republic of Iran	Preparation and preclinical evaluation of ^{64}Cu-NOTA-anti MUC1 as a radioimmunoconjugate for diagnosis of MUC1+ breast cancer by PET
10:15	S4-05	L. Melendez-Alafort	Italy	Development of a new prostate cancer theranostic radiopharmaceutical

S5 11:00-12:30 Production of radiopharmaceuticals: SPECT

Venue Board Room B/M1
Chair: J. Lewis
T.Sec: A. Korde

Time	ID	Presenter	Country/Org	Title
11:00	S5-01	A. Duatti	Italy	Revisiting ^{99m}Tc radiopharmaceuticals with recent advances in chemistry & imaging tools
11:25	S5-02	G. Ferro-Flores	Mexico	Production of radiolabelled peptides for SPECT-based theranostics
11:45	S5-03	S. Bouyoucef	Algeria	Radiopharmacy and growth of nuclear medicine in developing countries
12:00	S5-04	C. Bolzati	Italy	Selective αvβ3 integrin detection using [^{99m}Tc(N)PNP43]-tagged RGDechi peptides: synthesis and pharmacological studies
12:15	S5-05	E. Araujo Perini	Brazil	The past, present and future trends in radiopharmaceuticals production in Brazil

12:45:13:45 Working Lunch: MILabs

Venue Board Room M2

PS1 14:00-15:30 Poster Session 1

Venue MO2

ID	Name	Country	Title
Track	*Production of PET- and SPECT-based diagnostic, therapeutic, and theranostic radiopharmaceuticals*		
PS1-01	M. Agolti	Argentina	Tc-99m octreotide in Neuroendocrine tumours: a different radiotracer from traditional ^{111}In: our experience
PS1-02	B. Alirezapour	Islamic Republic of Iran	Preparation and biological assessment of ^{64}Cu-NOTA-anti ROR1 as a radioimmunoconjugate for diagnosis of ROR1+ breast cancer by PET
PS1-03	T. Assaad	Syrian Arab Republic	In house preparation and biodistribution of ^{64}Cu-ATSM, ^{64}Cu-PTSM and ^{64}Cu-DOTATATE for theranostic application
PS1-04	M. Avila Rodriguez	Mexico	Trends and perspectives in prostate-specific membrane antigen based radiopharmaceuticals in Mexico: the experience of the National University
PS1-05	J. Bhatt Mitra	India	Membrane interacting peptides as positron emission tomography (PET) based infection imaging probes
PS1-06	C. Bolzati	Italy	[^{99m}Tc(N)(DASD)(PNPn)]+ (DASD=1,4-dioxa-8-azaspiro[4,5]decandithiocarbamate, PNPn=bisphosphinoamine) for myocardial imaging
PS1-07	S. Bouyoucef	Algeria	Clinical indications and labelling procedures influencing in vitro stability and early myocardial uptake of ^{99m}Tc-tetrofosmin
PS1-08	M. Cardoso Moreno	Uruguay	Development, characterisation and in vivo evaluation of two ^{68}Ga-labelled NPY analogues as potential tracers for breast cancer imaging
PS1-09	E. Cazzola	Italy	[^{89}Zr]ZrOx/Cl preparation based on commercial cassette base, synthesis module.
PS1-10	E. Cazzola	Italy	[^{18}F]-FPSMA1007 synthesis HPLC free on fastlab platform qc evolution
PS1-11	A. Chakrabotry	India	Preparation of single patient dose of Lu-177-DOTA-Rituximab – using low specific activity Lu-177-Chloride
PS1-12	A. Charef	Algeria	Synthesis of m-Iodobenzylguanidine (m-IBG) by solid phase method and its evaluation
PS1-13	P. Charoenphun	Thailand	In-house radiocolloid development for sentinel lymph node detection
PS1-14	E. Chilug	Romania	Comparative preclinical evaluation of ^{68}Ga-labelled Neuromedin N and B for targeting glioblastoma malignant tissues
PS1-15	V. Chouthkanthiwa	India	Development of ready-to-use ^{177}Lu-PSMA-617 formulation for treatment of inoperable metastatic prostate cancer
PS1-16	J. Costes	Switzerland	Impact of hospital production vs commercial kits purchase of ^{68}Ga-DOTA peptides
PS1-17	I. Daruwati	Indonesia	Optimization of labeling α,γ-mangosteen isolated from mangosteen cortex fructus (garcinia mangostana l) with radionuclide technetium-99m for cancer detection

PS1-18	N. Delgado Lopez	Colombia	Radiopharmaceutical production of ^{68}Ga-PSMA at the National Cancer Institute, Bogotá, Colombia
PS1-19	B. Egorova	Russian Federation	Complexes of copper and bismuth cations with acyclic and macrocyclic polyamines bearing picolinic pendant arms
PS1-20	G. Ferro-Flores	Mexico	Synthesis and preclinical evaluation of ^{64}Cu-NOTA-HYNIC-iPSMA
PS1-21	W. Gawęda	Poland	Bioconjugates of barium ferrite as a Ra-223 carriers in alpha-radioimmunotherapy
PS1-22	R. George	India	Comparison of ^{68}Ga-NOTA-Bisphophonate with ^{99m}Tc-MDP in 34 patients with skeletal metastases in various type of cancers
PS1-23	S. George	India	Methods of integration of radio Cu-64 label in luminescent copper nanoclusters for pre and intra operative imaging and therapy of pancreatic cancer
PS1-24	N. Gomzina	Russian Federation	Potential radiotracers based on the 4'-O-methylhonokiol structure for PET visualization of neuroinflammation
PS1-25	B. Guérin	Canada	Direct production of ^{68}Ga using ^{68}Zn-pressed target
PS1-26	M. Guleria	India	Preparation of ^{177}Lu-DOTA-Trastuzumab: an insight into the in-house optimized radiochemistry procedures employed for patient dose preparation
PS1-27	P. Halik	Poland	In vitro NK1R affinity evaluation of novel radioconjugates based on peptide antagonist SPANTIDE I and Ga-68/Lu-177 theranostic-like isotopes for glioma cancer
PS1-28	W. Hamouda	Egypt	Synthesis, characterization and radiolabeling of iminodiacetic acid derivative with technetium-99m
PS1-29	S. Kar	India	Radiosynthesis of 1-{4-[4-(2-[18F] Fluoroethoxy)-phenyl] Piperazine-1-yl} ethenone and its evaluation in animal models bearing C57BL6 melanoma xenograft
PS1-30	K. Kolevska	North Macedonia	Correlation between the yield of produced [^{18}F]FDG and the activity retained during synthesis
PS1-31	R. Krasikova	Russian Federation	Nucleophilic synthesis of 6-[^{18}F]fluoro-L-DOPA via copper mediated radiofluorination
PS1-32	A. M. K	India	Evaluation of oxygen-18 water enriched for the production of fluorine-18 in a medical cyclotron
PS1-33	D. Kumar	India	Radiolabeled TATE functionalized gold nanoparticles for potential use in imaging and therapy of neuroendocrine tumours
PS1-34	V. Kumar	Australia	Recent advances in Ga-68 radiopharmaceuticals and Ga-68 bisphosphonates for the theranostic management of neuroendocrine tumours.
PS1-35	J. Le Roux	South Africa	An automated synthesis method for Ga-68 labelled ubiquicidin 29-41
PS1-36	W. Lestari	Indonesia	Formulation and radiolabelling of ethambutol with technetium-99m for detection of extrapulmonary tuberculosis
PS1-37	R. Leyva Montaña	Cuba	Radioconjugates based on the monoclonal antibody Nimotuzumab® for use in radioimmunotherapy.

PS1-38	M. Luna-Gutiérrez	Mexico	Preclinical evaluation of the theranostic ^{68}Ga/^{177}Lu-[DOTA-CXCR4-L] pair
PS1-39	A. Majoul	Tunisia	Study of the physicochemical stability of HMPAO-Technetium (^{99m}Tc)
PS1-40	N. Malek	Tunisia	Synthesis and biodistribution of 1-((2-methoxyphenyl) piperazine)ferrocenecarboxamide labeled with technetium-99m as a potential brain receptor imaging ag
PS1-41	J. Manrique-Arias	Mexico	A practical method for the preparation of ^{18}F[TFB] labeled with sodium fluoride, using a ITG IQS fluidic labelling module
PS1-42	J. Manrique-Arias	Mexico	Radiation dosimetry in healthy subjects of ^{68}Ga-DOTA-BBN, a potential theranostic tracer in oncology
PS1-43	A.A. Marie	Ethiopia	Tc-99m labeled human immunoglobulin G polyclonal antibody – different approach for better results
PS1-44	K. Masłowska	Poland	Radiolabeled peptidomimetic inhibitor of the VEGF/NRP-1 complex for the imaging of malignant tumours - preliminary research
PS1-45	M. Maurin	Poland	The critical parameters of Ga-68 labelling of POLATOM's PSMA-11 kit
PS1-46	G. Mercanoglu	Turkey	Development of synthesis method for the automated production of ^{177}Lu-EDTMP with ml-eazy and pharmtracer modules
PS1-47	Z. Mohd Ashhar	Malaysia	Preparation, characterization and in-vitro studies of [^{68}Ga]NODAGA-Pamidronic acid for PET bone imaging
PS1-48	R. Nanabala	India	Nucleophilic synthesis of [^{18}F]FDOPA by using an automated module : a summary of the results of 18 batches
PS1-49	R. Nanabala	India	Synthesis of [^{18}F]PSMA-1007 for imaging prostate cancer by using an automated module and clinical studies
PS1-50	S. Nandy	India	Fully automated radiosynthesis of ^{18}F-16-α-Fluoroestradiol ([^{18}F]FES) with solid phase extraction cartridge purification by sep pak® plus alox n
PS1-51	S. Nandy	India	Development and evaluation of ^{18}F-radiolabeled acetaminophen (paracetamol) for tumour imaging based on COX-2 overexpression
PS1-52	N. Naseer Ahmed	Pakistan	Comparative evaluation of Tc-99m octreotide, synthesized by different labeling methods: for diagnostic accuracy assessment in neuro-endocrine tumours
PS1-53	N. Naseer Ahmed	Pakistan	Utility of gamma camera as an effective non-invasive imaging modality for docetaxel loaded liposomal chitosan nanoparticles: synthesis and the in-vivo trafficking in animal model
PS1-54	Y. Ng	Malaysia	Radiolabelling and preliminary biodistribution study of Samarium-153-Zoledronic Acid as a novel bone pain palliative agent
PS1-55	S. Okarvi	Saudi Arabia	Development and evaluation of a ^{68}Ga-labeled angiotensin peptide coupled to rhodamine for diagnostic imaging of heart
PS1-56	S. Okarvi	Saudi Arabia	Total solid-phase synthesis of DOTA-Functionalized tumour targeting peptides for PET imaging and therapy

PS1-57	V. Orlovskaya	Russian Federation	Use of tetrabutylammonium tosylate in conjunction with chiral NiII complex precursor for automated synthesis of [^{18}F]FET
PS1-58	M. Pereira	Uruguay	Optimization of the automatic synthesis of 16α-[^{18}F]fluoroestradiol in the SYNTHRA RNplus Research Module
PS1-59	M. Pino Peraza	Cuba	Labelling of anti-cd20 monoclonal antibody cimabior with ^{90}Y
PS1-60	S. Rubow	South Africa	Influence of the source of Lu-177 on radiopharmacy waste management – an estimate
PS1-61	M. Saidi	Tunisia	Synthesis and biodistribution study by rats of two new ^{99m}Tc-Tricarbonyl complexes as potential brain imaging agents
PS1-62	M. Sterjova Arev	North Macedonia	Freeze-dried kit formulation of ^{177}Lu- and ^{90}Y-labeled immunoconjugates of Trastuzumab – formulation and characterization
PS1-63	H. Shamseldin	Egypt	A novel therapeutic phthalimide derivative for cancer: Synthesis, radioiodination and biological evaluation
PS1-64	S. Shiratori	Thailand	The first proof-of-concept theranostic radiopharmaceutical in Thailand
PS1-65	J. Shukla	India	Exploring Ga-68 Trastuzumab Fab for noninvasive PET imaging to detect HER2 expressing lesions.
PS1-66	T. Siriprapa	Thailand	Improvement of synthesizing material and method for an in-house production of [^{18}F]-florbetapir PET tracer for imaging beta amyloid deposition in the brain
PS1-67	N. Tag	Oman	Evaluating quality control ^{18}F-FDG: experience in Sultan Qaboos University Hospital, Oman
PS1-68	M. Tejeria	Uruguay	Design, synthesis and evaluation of a family of ^{99m}Tc estradiol derivatives for breast cancer imaging
PS1-69	K. Urbanová	Czech Republic	Labeling of PSMA-11 with ^{68}Ga in $NaHCO_3$
PS1-70	K. Vats	India	Influence of ^{99m}Tc-chelation at N-terminal and/or C-terminal on receptor binding affinity of NGR peptides
PS1-71	A. Vukadinovic	Serbia	Development of automatic system for production of small batches of radioiodine capsules
PS1-72	F. Vultos	Portugal	^{111}In-labelled bifunctional agents for dual targeting of breast cancer cells
PS1-73	T. Wibawa	Indonesia	Cancer drugs and ^{99m}Tc-glutation radiopharmaceutical interaction to achieve optimal result of cancer diagnostics in nuclear medicine
PS1-74	E. Widyasari	Indonesia	In vivo study of radiolabeled flavonoid ^{99m}Tc-quercetin as cancer radiotracer on normal balb/c mice
PS1-75	B. Guerin	Canada	The synthesis and cytotoxicity of ^{64}Cu/NOTA-terpyridine platinum conjugate, as a novel theranostic agent
PS2-06	H. Elkhatib	Egypt	Studying and assessment of clean area for Tc-99m production in radioisotope production facility
PS2-33	H. Honarvar	Sweden	In vitro kinetics property evaluation of ^{11}C-acetate in real time
PS2-72	A. Kellerbauer	EU	Production of actinium-225 at JRC Karlsruhe

Surnames are listed alphabetically (exceptions for modifications made after the Programme was created).

S6 16:00-17:30 Production of radiopharmaceuticals: Therapy

Venue Board Room B/M1
Chair: C. Cutler
T.Sec: A. Jalilian

Time	ID	Presenter	Country/Org	Title
16:00	S6-01	M.R.A. Pillai	India	Production and quality control of beta emitters bone pain palliation agents using β-emitters
16:25	S6-02	J. Rijn Zeevaart	South Africa	Comparison of promising new short-range therapeutic radiopharmaceuticals using ^{225}Ac, ^{213}Bi and ^{161}Tb
16:45	S6-03	V. Chirayil	India	Freeze-dried kit for quick and efficient preparation of ^{188}Re-DEDC/lipiodol in hospital radiopharmacy
17:00	S6-04	C. H. Yeong	Malaysia	Production of theranostic ^{153}Sm labelled polystyrene microspheres for hepatic radioembolization
17:15	S6-05	A. Chakrabotry	India	Radiolabelling and pre-clinical evaluation of ^{90}Y-DOTATATE formulated using ^{90}Y-acetate from high level liquid waste

18:00-20:00 Side Event: India

Venue Board Room M2

Wednesday 30 October 2019

S7-A 09:00-10:30 Production of radiopharmaceuticals: PET

Venue Board Room B/M1
Chair: J. Smith
T.Sec: J. Osso Junior

Time	ID	Presenter	Country/Org	Title
09:00	S7-A1	P. Elsinga	The Netherlands	Recent advances in the development of ^{18}F and ^{11}C radiopharmaceuticals
09:25	S7-A2	C. Decristoforo	Austria	Recent advances in the development of ^{68}Ga radiopharmaceuticals
09:45	S7-A3	I. Aljammaz	Saudi Arabia	Synthesis and in vitro and in vivo evaluation of ^{124}I labelled PSMA peptides: potential theranostic radiopharmaceuticals for prostate cancer
10:00	S7-A4	V. Kumar	Australia	A radiocopper somatostatin anolog (Cu-Sartate) for NET theranostics
10:15	S7-A5	W. Chintawan	Thailand	Comparative study of [^{18}F]PSMA-1007 and [^{68}Ga]PSMA-11 for prostate cancer PET imaging in Thailand

S7-B 09:00-10:30 Clinical advances in nuclear medicine

Venue Board Room M2
Chair: E. Bombardieri
T.Sec: A. Jalilian

Time	ID	Presenter	Country/Org	Title
09:00	S7-B1	D. Paez	IAEA	IAEA activities related to nuclear medicine
09:30	S7-B2	H. Macapinlac	United States of America	Recent advances in nuclear medicine: diagnostic and therapy
10:00	S7-B3	D. Le	United States of America	Production and use of cyclotron-produced radiopharmaceuticals at MD Anderson Cancer Center

S8 11:00-12:30 QA/QC/Pre-clinical

Venue Board Room B/M1
Chair: C. Decristoforo
T.Sec: A. Korde

Time	ID	Presenter	Country/Org	Title
11:00	S8-01	S. Rubow	South Africa	Quality control of hospital-based radiopharmaceuticals
11:20	S8-02	J. Smith	United States of America	Development and preclinical evaluation of ^{64}Cu radiolabelled compounds
11:40	S8-03	B. Guérin	Canada	Preclinical evaluation of ^{68}Ga-PET tracers using ^{68}Ga produced by cyclotron, a Canadian experience
12:00	S8-04	E. Bombardieri	EANM	Ethics in animal experiments in nuclear medicine and the application of the directive 2010/63 EU
12:15	S8-05	R. Teodoro	Germany	PET for the imaging of cerebral α7 acetylcholine receptors: from tracer development to clinical application

S9 14:00-15:30 Health regulations: Production of radiopharmaceuticals

Venue Board Room B/M1
Chair P. Elsinga
T.Sec: J. Osso Junior

Time	ID	Presenter	Country/Org	Title
14:00	S9-01	S. Kopp	WHO	A move towards harmonization of GMP regulations in radiopharmacy
14:20	S9-02	C. Decristoforo	Austria	The status of radiopharmaceutical regulations in Europe
14:40	S9-03	S. Lyashchenko	United States of America	The status of radiopharmaceutical regulations in the US
15:00	S9-04	Y. Chakrova	Kazakhstan	GMP certification of a radiopharmaceutical production facility in Kazakhstan
15:15	S9-05	S. Nazarenko	Estonia	Compounding radiopharmaceuticals: any regulatory difference with extemporaneous preparation?

S10 16:00-17:30 New trends in radiopharmaceuticals: chemistry

Venue Board Room B/M1
Chair: M.R.A. Pillai
T.Sec: A. Jalilian

Time	ID	Presenter	Country/Org	Title
16:00	S10-01	B. Guérin	Canada	Development and evaluation of chelators for specific radiometals
16:20	S10-02	S. Lyashchenko	United States of America	Novel radiopharmaceuticals for clinical translation
16:40	S10-03	J. Smith	United States of America	Translation of new chelators for old pairs: Tc/Re NODAGA
17:00	S10-04	K. Katti	United States of America	Radioactive ^{198}Au nanoparticles in nanomedicine
17:15	S10-05	P. Brust	Germany	New strategies for imaging of brain cancer with radiopharmaceuticals

18:00-20:00 Side Event: Women in Radiopharmaceutical Sciences: Challenges and Opportunities

Venue Board Room M2

Thursday 31 October 2019

S11-A 09:00-10:30 Production of alpha emitters and radiopharmaceuticals

Venue Board Room B/M1
Chair: M. Betti
T.Sec: V. Starovoitova

Time	ID	Presenter	Country/Org	Title
09:00	S11-A1	A. Morgenstern	Germany	Production and quality control of radiopharmaceuticals labelled with ^{225}Ac and ^{213}Bi
09:30	S11-A2	C. Cutler	United States of America	U.S. DOE Tri lab production effort to provide accelerator produced ^{225}Ac
10:00	S11-A3	M. Lesinki	Canada	Recent results of the joint CNL and TRIUMF project on the production of ^{225}Ac
10:15	S11-A4	O. Pozzi	Argentina	Argentinian project for developing production of ^{225}Ac and ^{213}Bi in cyclotrons for targeted therapy

S11-B 09:00-10:30 Technical cooperation success stories

Venue Board Room M2
Chair: U. Bhonsle
T.Sec: A. Elrefaei

Time	ID	Presenter	Country/Org	Title
09:00	S11-B0	D. Yang	IAEA-TC	Opening Remarks by Deputy Director General, Head of Department of Technical Cooperation
09:10	S11-B1	S. Abdulrazak	IAEA-TC	Technical cooperation programme: enhancing capacities in radiopharmacy in Africa
09:30	S11-B2	R. Montaña	Cuba	Sustainable production of ^{99m}Tc generators and radiopharmaceuticals an IAEA/Cuban experience
10:00	S11-B3	Y. Chakrova	Kazakhstan	Gel generator production project in Kazakhstan: IAEA support
10:15	S11-B4	A. Duran	Argentina	Strengthening capacities for the development of radiotracers labelled with ^{18}F, different from fluordesoxyglucose in the FCDN

S12 11:00-12:30 Emerging radioisotopes for radiopharmacy

Venue Board Room B/M1
Chair: A. Duatti
T.Sec: A. Jalilian

Time	ID	Presenter	Country/Org	Title
11:00	S12-01	V. Radchenko	Canada	Development of production strategies for new emerging research radionuclides using cyclotrons
11:25	S12-02	M. Avila Rodríguez	Mexico	Emerging clinical applications of [^{64}Cu]$CuCl_2$ radiopharmaceutical
11:45	S12-03	P. Martini	Italy	Towards large-scale ^{67}Cu cyclotron production
12:00	S12-04	I. Cieszykowska	Poland	Production of ^{47}Sc from ^{47}Ca: comparison of four separation methods

12:15	S12-05	G. Pupillo	Italy	Accelerator-based production of ^{47}Sc: results of the PASTA project

PS2 14:00-15:30 Poster Session 2

Venue MO2

ID	Name	Country	Title
Track	*Design of industrial, hospital and centralized radiopharmacy facilities*		
PS2-01	N. Ayachi	Tunisia	Creation of the first public PET unit at Sahloul hospital in Sousse, Tunisia
PS2-02	S. Bertrand	Belgium	A new compact high-power e-beam accelerator for radiotherapeutic production: a first evaluation
PS2-03	S. Bertrand	Belgium	Optimized non-conventional radioisotopes production with industrial mid-energy cyclotron
PS2-04	A. Bulos	Philippines	Research and development initiatives on radiopharmaceutical production in the Philippines
PS2-05	F. Ekoume	Cameroon	A comparative study of passive air sampling in different radiopharmacies
PS2-06	H. Elkhatib	Egypt	Studying and assessment of clean area for Tc-99m production in radioisotope production facility. (*Presenting on Tuesday 29 October*)
PS2-07	Y. Lagebo	Ethiopia	Survey on arduous challenges and possible tracks of heightening the radiopharmacy and nuclear medicine services in Africa
PS2-08	M. Maneiro	Argentina	Parametrical study for iodine plate out theoretical model in fission radioisotope production plant ventilation pipes
PS2-09	J. Norenberg	United States of America	An overview of commercial nuclear pharmacy in the US safely delivering 35,000 patient-ready radiopharmaceuticals doses each day
PS2-10	D. Schick-Martin	Canada	Saskatchewan centre for cyclotron sciences: a new multi-user research and production facility
PS2-11	M. Waheed	Bangladesh	Development of radiopharmaceutical production in Bangladesh
Track	*Education, including e-learning, certification and training methodologies for professionals involved in radiopharmacy*		
PS2-12	B. Darju	Liberia	Education/Awareness-2
PS2-13	E. Huanca Sardinas	Bolivia	Relevance of the study of radiopharmacy at San Francisco Xavier university
PS2-14	N. Mat Ail	Malaysia	Development of nuclear pharmacy training module in Malaysia
PS2-15	A. Rey Ríos	Uruguay	Diploma of radiopharmacy specialist in Uruguay: a flexible tool to achieve a certificated postgraduate education in radiopharmacy
PS2-16	O. Riabukhin	Russian Federation	Accelerators of Ural Federal University as a base for student education and stuff training
PS2-17	M. Siddig	Sudan	Status of radiopharmacy practices in Sudan
PS2-18	D. Wata	Kenya	Assessment of training needs for radiopharmacists in Africa

Track	*Health regulatory aspects related to the production of radiopharmaceuticals*		
PS2-19	M. Baracaldo Cortes	Colombia	Regulatory aspects related to good practices of preparation of radiopharmaceuticals in Colombia
PS2-20	J. Giglio	Uruguay	Optimization of ^{18}F-radiopharmaceutical production with a new platform, in accordance with GMP
PS2-21	S. Marques de Carvalho	Brazil	Current status of radiopharmaceuticals production in Brazil: Licensing and radioprotection aspects
PS2-22	L. Pozzo	Brazil	[^{68}Ga]PSMA PET/CT: which HTA tools can be used in local or regional reimbursement decision?
PS2-23	R. Ssekajjugo	Uganda	Regulation of radiopharmaceuticals in Uganda: current situation
Track	*Nanosized radiopharmaceuticals*		
PS2-24	F. Bin Madin	Malaysia	Synthesis of radioactive gold nanoparticles and bimetallic gold nanoparticles for cancer therapeutic application
PS2-25	A. Heitor Ferreira	Brazil	Radiation crosslinked protein-based nanoparticles as delivery system for radiopharmaceuticals
PS2-26	A. Majkowska-Pilip	Poland	Multimodal radiobioconjugate Octreotide-PEG-^{198}AuNPs-PEG-DOX for targeted cancer therapy
PS2-27	M. Żuk	Poland	Gold-198 coated Superparamagnetic iron oxide nanoparticles (SPION) for cancer radiotherapy and magnetic hyperthermia
Track	*Pre-clinical evaluation of radiopharmaceuticals*		
PS2-28	E. Azorin-Vega	Mexico	Dosimetric model based on the distribution of PSMA targeted radiopharmaceuticals to bone metastasis
PS2-29	A. Chakraborty	India	In-vitro and in vivo pre-clinical evaluation for Lu-177, Y-90 and Ga-68-DOTATATE in SSTRII positive AR42J cell line and negative HCT116 and MCF7 cell line
PS2-30	T. Dallagi	Tunisia	Evaluation of Rhenium and ^{99m}Technetium of tamoxifen derivatives as potential breast cancer radiopharmaceuticals
PS2-31	A. Escudero-Castellanos	Mexico	Biological evaluation of ^{177}Lu-DOTA-PSMA(inhibitor)-RGD in LNCaP and PC_3 prostate cancer cells
PS2-32	L. Fernández	Uruguay	[^{99m}Tc]Tc labelled levonorgestrel derivative as potential ER+/PR+ imaging agent
PS2-33	H. Honarvar	Sweden	In vitro kinetics property evaluation of ^{11}C-acetate in real time *(Presenting on Tuesday 29 October)*
PS2-34	N. Jiménez-Mancilla	Mexico	Application of the Cerenkov radiation produced by ^{177}Lu-radiopharmaceuticals in preclinical studies
PS2-35	M. Maurin	Poland	Evaluation of biological properties of radiolabelled nanogel-bombesin conjugates
PS2-36	D. Niculae	Romania	Comparative radiobiological evaluation of intracellular effects induced by $^{64}CuCl_2$ in different tumour cells
PS2-37	L. Ondrák	Czech Republic	In-vitro study of therapeutic radionuclides' impact on selected tissue and tumour cell lines
PS2-38	G. Rabiller	Argentina	Factors and drug interactions that cause altered biodistribution of radiopharmaceuticals
PS2-39	C. Santos-Cuevas	Mexico	^{99m}Tc-CXCR4-L: Biokinetics and radiation dosimetry in humans

PS2-40	M. Silindir Gunay	Turkey	In vitro cell binding detection of novel radiopharmaceuticals: a radionuclidic evaluation
PS2-41	S. Treiger Borborema	Brazil	The advantage of using radiotracers for pre-clinical assays with conventional drugs: the case of meglumine antimoniate
Track	*Quality control and quality assurance of medical radioisotopes and radiopharmaceuticals*		
PS2-42	A. Ahmad Zikrileh	Malaysia	An experimental study on radiochemical purity (RCP) of ^{99m}Tc-Tetrofosmin compounded outside manufacturer's guideline using TEC-Control™ chromatography system
PS2-43	A. Aiboud	Morocco	Development of a new method for the microbiological analysis of Iodine-131
PS2-44	C. Arjun	India	User-friendly sterility testing method for injectable radiopharmaceuticals – feasibility study and validation
PS2-45	C. Arjun	India	Feasibility of a green analytical method for radiochemical purity determination of sodium [^{99m}Tc] pertechnetate
PS2-46	C. Arjun	India	Bacterial endotoxin testing of injectable radiopharmaceuticals: BRIT experience
PS2-47	M. Bricha	Morocco	"^{99}Mo/^{99m}Tc radionuclide generators" optimization: new quality control standards of alumina columns and kinetic study of Molybdenum adsorption on α alumina
PS2-48	A. Duran	Argentina	Effect of autoclaving, activity concentration and ethanol on the stability of [^{18}F] -FDG
PS2-49	O. Fedorova	Russian Federation	Enantiomeric purity of radiolabelled amino acids is influenced by the type of chiral column
PS2-50	A. Larenkov	Russian Federation	Quality control of ^{68}Ga radiopharmaceuticals: pitfalls and solutions
PS2-51	L. Piola	Argentina	^{89}Sr and ^{90}Sr/^{90}Y activity by cherenkov counting in medical ^{99}Mo quality control
PS2-52	K. Skovorodko	Lithuania	Implementation of a quality assurance program and quality control results of radiopharmaceuticals
Track	*Production of radionuclide generators*		
PS2-53	A. Alberti Ramírez	Cuba	Production of radionuclide generators: Cuban experience
PS2-54	E. Aliaga	Peru	Design and development of an automated mini-plant for ^{99m}Tc production
PS2-55	S. Chattopadhyay	India	Recovery of highly pure ^{99m}Tc from low specific activity (n,g)^{99}Mo using activated charcoal column
PS2-56	K. Fialová	Czech Republic	Development of Ge-68/Ga-68 radionuclide generator for nuclear medicine
PS2-57	M. El-Gizawy	Egypt	Selective separation of no carrier added Sc-47 from reactor irradiated Ca using zirconium vanadate gel for nuclear medical applications
PS2-58	M. V. Gonzalez	Argentina	Evaluation of alternatives for the removal of heat within the Mo-99 production cell by fission from the estimation of the radionuclidic composition and power of filters with uranium precipitate

PS2-59	D. Kottuparamban	India	Fluorine-18 Production Yield in an 11 MeV Medical Cyclotron: Comparison of Theoretical and Practical Yields
PS2-60	K. Kushwaha	India	Production, Separation and Purification of In-111 from Irradiated Natural Cd: Produced In-111 Quality Evaluated after Radiolabeling with Pentetreotide
PS2-61	P. Martini	Italy	Worldwide ten-year trend analysis of the scientific literature on therapeutic radiometals (2008-2018)
PS2-62	O. Odintsov	Ukraine	Preparation of zirconium molybdate gel as material for ^{99}Mo/^{99m}Tc chromatographic column generator
PS2-63	A. Tsechanski	Israel	Photonuclear production of ^{67}Cu radionuclide using “one-stage” setup
Track	*Production of PET- and SPECT-based diagnostic, therapeutic and theranostic medical radioisotopes*		
PS2-64	A. Abrunhosa	Portugal	Fully automated liquid target production of [^{68}Ga]$GaCl_3$ in line with GMP requirements
PS2-65	N. Bentaleb	Morocco	Study of the optimization of the use of the reducing agent in the formulation and production of sodium iodide-131 oral solution
PS2-66	S. Brinkevich	Belarus	Long-lived radionuclidic impurities in the production of ^{18}F labeled radiopharmaceuticals
PS2-67	S. Campos	Argentina	Analysis and model of radioactive noble gases and iodine emissions from a fission Mo-99 production process
PS2-68	L. Canton	Italy	Nuclear reaction calculations applied to cyclotron production of emerging radiopharmaceuticals
PS2-69	J. Červenák	Czech Republic	Measurement of excitation functions of proton-induced nuclear reactions on gold
PS2-70	I. Cieszykowska	Poland	Separation of ^{99m}Tc from low specific activity ^{99}Mo
PS2-71	S. Cisternino	Italy	Yttrium cyclotron solid target preparation for zirconium-89 production
PS2-72	A. Kellerbauer	EU	Production of actinium-225 at JRC Karlsruhe (*Presenting on Tuesday 29 October*)
PS2-73	A. Boschi	Italy	Technetium-99m production by medical cyclotron
PS2-74	L. Melendez-Alafort	Italy	Assessment of dose increase after administration of radiopharmaceuticals prepared with cyclotron-produced ^{99m}Tc
PS2-75	J. Merino	Argentina	Development of a copper oxide reactor to convert hydrogen to water in the dissolution of radioisotopes production targets
PS2-76	L. Mou	Italy	The LARAMED project at INFN-LNL: Laboratory of Radionuclides for Medicine
PS2-77	F.L. Navarro Marques	Brazil	Production of ^{89}Zr and radiolabeling of phosphatidylserine liposome
PS2-78	M. Pasquali	Italy	Towards multimodal PET/MRI imaging with cyclotron-produced 52/51 min
PS2-79	O. Pozzi	Argentina	Effect of the radiolysis produced by the high levels of radiation dose (Gy) delivered by alpha particles on the production and supply of Ac-225, and the labeling of radiopharmaceutical for therapy

PS2-80	H. Skliarova	Italy	High energy vibrational powder plating for cyclotron solid target preparation for radiopharmaceuticals production
PS2-81	V. Uvarov	Ukraine	The yield of ^{47}Sc at photonuclear production
PS2-82	W. Wojdowska	Poland	Cyclotron production of scandium-44
PS2-83	B. Zhang	China	Biodistribution of nanoradiopharmaceuticals in internal organs

Surnames are listed alphabetically (exceptions for modifications made after the Programme was created).

S13 16:00-17:30 Radiopharmacy installations

Venue Board Room B/M1
Chair: B. Guerin
T.Sec: A. Jalilian

Time	ID	Presenter	Country/Org	Title
16:00	S13-01	A. Duatti	Italy	How to set up a medium size ^{99m}Tc generator facility: IAEA experience
16:25	S13-02	V. Kumar	Australia	Design and successful operation of a SPECT hospital radiopharmacy
16:45	S13-03	M.R.A Pillai	India	Cyclotron and PET radiopharmacy installation: experience in setting up in a commercial centre
17:00	S13-04	U. Bhonsle	United Arab Emirates	How to set up a PET radiopharmaceutical facility: IAEA experiences
17:15	S13-05	K. Washiyama	Japan	An effort to diagnostic and therapeutic nuclear medicine at Fukushima Medical University using two medical cyclotrons

S14 17:30-18:30 IAEA Databases and Apps

Venue: Board Room B/M1
Chair: M. Haji-Saeed
T.Sec: J. Osso Junior

Time	ID	Presenter	Country/Org	Title
17:30	S14-01	A. Koning	IAEA	The medical isotope browser
18:00	S14-02	N. Pessoa	IAEA	The IAEA's research reactor database (RRDB)
18:15	S14-03	A. Jalilian	IAEA	Introduction to the new IAEA database “Cyclotrons used for Radionuclide Production”

Friday 1 November 2019

S15 09:00-10:30 Education in radiopharmacy

Venue Board Room B/M1
Chair: S. Rubow
T.Sec: A. Korde

Time	ID	Presenter	Country/Org	Title
09:00	S15-01	P. Elsinga	The Netherlands	Development and performance of a radiopharmacy platform certification, EANM experience
09:20	S15-02	A. Rey Ríos	Uruguay	Education and qualification of radiopharmacists in Latin America
09:40	S15-03	N. Bentaleb	Morocco	Master's degree in radiopharmaceutical sciences: step forward to enhance regional capacities in nuclear medicine in Africa
10:00	S15-04	E. Janevik-Ivanovska	North Macedonia	Developing, testing and installing e-learning system for radiopharmacy as a tool to harmonize education in developing country
10:15	S15-05	P. Wieland	WNA	The World Nuclear University's 7 approaches to enhance professional performance

S16 11:00-12:30 WNU OLYMPIAD: FINALS

Venue Board Room B/M1
Chair: A. Rey Ríos

Time	ID	Presenter	Country/Org	Title
11:00				Introduction Remarks
11:15	S16-01	T. Almeida	WNA	Public opinion about nuclear science and technology in Brazil
11:30	S16-02	Z. Deziel	WNA	Public opinion on radiopharmaceuticals and the nuclear industry in USA
11:45	S16-03	S. Tian	WNA	Public opinion on nuclear science and technology in China
12:00	S16-04	V. Fernandes	WNA	Acceptance and knowledge of the Brazilian population on nuclear science and technology
12:15				Closing Remarks and Awards Ceremony

CS 14:00-15:00 Closing Session

Venue Board Room B/M1
Chair: J. Osso

Time	ID	Presenter	Country/Org	Title
14:00	CS-01	N. Ramamoorthy	India	Highlights of ISTR2019
14:30	CS-02			Awards Ceremony
14:45	CS-03	M. Denecke	IAEA	Closing Remarks
15:00	CS-04	J. Osso	IAEA	Closing of the Symposium