

IAEA-CN-130

International Symposium
on
Trends in Radiopharmaceuticals
(ISTR-2005)

Vienna, Austria
14–18 November 2005

PROVISIONAL PROGRAMME

Update: 31 October 2005

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The contributions have been used to cover the costs of the exhibition and the costs of supporting scientists from developing countries in attending this Symposium.

The fact that the IAEA has provided facilities for exhibiting equipment and products at the Symposium does not imply that it endorses the equipment and products exhibited.

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M. Dondi
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IAEA Secretariat:

Scientific Secretaries: M.R.A. Pillai
K.K. Solanki
Symposium Organizer: R. Perricos
Administrative Support: L. Barrios

Location of the Symposium:

International Atomic Energy Agency
Vienna International Centre (VIC)
Building C, 4th floor
IAEA Boardroom
Wagramer Strasse 5
A-1400 Vienna, Austria

Tel.: (+43 1) 2600 21330 or 21336
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Working Language: English

Resolutions: No resolutions may be submitted for consideration on any subject; no votes will be taken.

TIMETABLE

Sunday, 13 November 2005

16:00–18:00 Registration Checkpoint 1

Monday, 14 November 2005

08:00 Registration Checkpoint 1

09:30–10:15 Opening Session

10:15–11:30 Session 1 Technetium Chemistry and Radiopharmaceuticals-I
Technetium Chemistry and Radiopharmaceuticals-II

11:30–12:30 Session 2

12:30–14:00 Lunch Break

14:00–15:30 Session 3 Technetium Radiopharmaceuticals Applications

15:30–16:00 Coffee/Tea Break

16:00–18:00 Session 4 Novel Technetium Chemistry and Radiopharmaceuticals-I

18:00–19:30 Reception

Tuesday, 15 November 2005

09:00–10:30 Session 5 Indigenous Capacity Building in Radiopharmaceuticals

10:30–11:00 Coffee/Tea Break

11:00–12:30 Session 6 Reactor Based Radionuclides and Generators

12:30–14:00 Lunch Break

14:00–15:30 Session 7 Poster Session A

15:30–16:00 Coffee/Tea Break

16:00–17:30 Session 8 Novel Technetium Chemistry and Radiopharmaceuticals-II

Wednesday, 16 November 2005

09:00–10:30 Session 9 Pharmacology and Therapeutic Radiopharmaceuticals

10:30–11:00 Coffee/Tea Break

11:00–12:30 Session 10 Therapeutic Radiopharmaceutical Applications

12:30–14:00 Lunch Break

14:00–15:30 Session 11 PET Radiopharmaceuticals

15:30–16:00 Coffee/Tea Break

16:00–17:30 Session 12 Radioiodine Radiopharmaceuticals

Thursday, 17 November 2005

09:00–10:30 Session 13 F-18 Radiopharmaceuticals and Automation of Synthesis

10:30–11:00 Coffee/Tea Break

11:00–12:30 Session 14 Round Table Discussion on Cyclotron-PET Facility

12:30–14:00 Lunch Break

14:00–15:30 Session 15 Poster Session B

15:30–16:00 Coffee/Tea Break

16:00–17:45 Session 16 Cyclotron Based Radionuclides and Generators

Friday, 18 November 2005

09:00–10:30 Session 17 Radiopharmacy

10:30–11:00 Coffee/Tea Break

11:00–12:30 Session 18 Round Table Discussion on GMP and Regulatory Aspects

12:30–14:00 Lunch Break

14:00–15:20 Session 19 Summary Presentations on Trends in Radiopharmaceutical Research

Conclusions and Recommendations

15:20–15:30 Closing of the Symposium

Display of Posters:

Session A: Monday p.m. – Wednesday a.m.,
14–16 November 2005

Session B: Wednesday p.m. – Friday p.m.,
16–18 November 2005

Commercial exhibits will be shown in the common area on the 4th floor of the C tower from Monday to Friday, 14–18 November 2005.

SUNDAY, 13 NOVEMBER 2005

16:00–18:00 Registration and distribution of
Symposium material

MONDAY, 14 NOVEMBER 2005

08:00 Registration and distribution of
Symposium material

09:30–10:15 **OPENING SESSION**

Addresses

10:15–11:30 **SESSION 1:**
Technetium Chemistry and
Radiopharmaceuticals – I

Chairpersons: **S. Gomez de Castiglia, Argentina**
F.F. Knapp, Jr., USA

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
001 (invited)	A. Verbruggen	Belgium	Technetium-99m radiopharmaceuticals: Current situation and perspectives
002	E. von Guggenberg M. Behe C. Decristoforo	Germany Austria	^{99m} Tc labelled minigastrin for tumour targeting: Optimization of labelling and peptide sequence
003	A.K. Mishra P. Panwar K. Chuttani N. Kumar P. Mishra R.K. Sharma	India	Design and synthesis of isoniazide mimetic conjugated with DTPA, potential ligand of novel radiopharmaceutical and contrast agent for medical imaging, Bis (amide) of diethylene triaminepentaacetic acid: DTPA-Bis(INH)
004	G. Rodriguez Y.P. Oliver J. Vilar V. Trindade A. Lopez G. Lago H.S. Balter M.M. Welling E.K.J. Pauwels	Uruguay Netherlands	Antimicrobial peptide ^{99m} Tc-UBI 29-41 for infection diagnosis: kit formulation and a preliminary clinical study

11:30–12:30 **SESSION 2:
Technetium Chemistry and
Radiopharmaceuticals – II**

Chairpersons: **A. Duatti, Italy
J. Környei, Hungary**

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
005 (invited)	G. Ferro-Flores C. Arteaga de Murphy	Mexico	Preparation and evaluation of third generation technetium-99m radiopharmaceuticals
006	E. Janevik- Ivanovska I. Djorgoski B. Andonovski V. Milenkov S. Miceva-Ristevska Gy.A. Janoki	The Former Yugoslav Republic of Macedonia Hungary	Detection of DVT in experimental animal model using radioactive label tirofiban – GPIIb/IIIa inhibitor
007	N. Tojinda S. Chiewvit B. Khiewwan S. Dumrongpisutikul A. Ratanawichitrasin S. Taweepraditpol	Thailand	Preparation of in-house dextran and its clinical applications in sentinel node studies, Siriraj Hospital
008	N. Singh A.K. Singh A. Bhatnagar G. Mittal T. Ravindranath	India	Comparative study of ^{99m} Tc-EMB and native EMB and role of ^{99m} Tc-EMB in resistant mycobacterial imaging
12:30–14:00	Lunch Break		

14:00–15:30 **SESSION 3:**
Technetium Radiopharmaceuticals
Applications

Chairpersons: **I. Carrio, Spain**
 E.K.J. Pauwels, Netherlands

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
009 (invited)	R.M.T. Giubbini	Italy	Technetium radiopharmaceuticals: Applications in nuclear cardiology
010 (invited)	M.R. Aruva X. Tian K. Zhang B. Mathews N. Shantly C. Cardi E. Wickstrom M. Thakur	USA	Imaging oncogene expression in breast cancer with receptor specific peptides and peptides nucleic acids
011	M. Jehangir M. Ahmed S. Roohi	Pakistan	Synthesis and evaluation of ^{99m} Tc-kanamycin and ^{99m} Tc-isoniazid for infection imaging
012	N. Boucekkine S.A. Zemoul F. Mouas R. Benlabгаа S. Hanzal A. Khelifa F. Mechken M. Habeche K. Bellazoug B. Benchelaghem S.E. Bouyoucef	Algeria	Preparation of ^{99m} Tc-pentavalent DMSA and its uptake by benign bone diseases
15:30–16:00	Coffee/Tea Break		

16:00–18:00 **SESSION 4:
Novel Technetium Chemistry
and Radiopharmaceuticals - I**

Chairpersons: **R. Alberto, Switzerland
M. Papadopoulos, Greece**

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
014 (invited)	A. Duatti	Italy	Which role for Technetium-99m radiopharmaceuticals in the age of molecular imaging?
015	I.J. Fettich S. Repse M. Snoj M. Zitko-Krhin A. Markovic	Slovenia	^{99m} Tc EDDA/HYNIC-TOC is a suitable radiopharmaceutical for radioguided surgery of neuroendocrine tumours
016	E. Gourni P. Bouziotis M. Paravatou S. Xanthopoulos M. Fani C. Zikos S.C. Archimandritis A.D. Varvarigou	Greece	Comparative in vitro and in vivo evaluation of a series of novel bombesin-like peptides
017	D. Satpati K. Bapat S. Banerjee K. Kothari H.D. Sarma M. Venkatesh	India	[^{99m} TcN]-N-benzyl piperidine dithiocarbamate: A potential sigma receptor imaging agent
018	A. Perera A. Prats O. Reyes M. Bequet N. Santiago A. Hernández R. Leyva E. Fernandez G.J. Pimentel	Cuba	^{99m} Tc-labelled peptide F11: A new potential αvβ ₃ , integrin antagonist for scintigraphic detection of tumours
019	Wang Y.M. Wu C.Y. Wei J.J.	USA	Nuclear imaging of amyloid deposits based upon thioflavins
020	M. Ciavaro E. Obenaus G. Fiszman S. Gomez de Castiglia	Argentina	HYNIC-TOC labelled with ^{99m} Tc via an instant kit formulation: Preliminary results
18:00–19:30	Reception hosted by the IAEA		

TUESDAY, 14 NOVEMBER 2005**09:00–10:30** **SESSION 5:
Indigenous Capacity Building
in Radiopharmaceuticals****Chairpersons:** **R.S. Kamel, IAEA
N. Ramamoorthy, IAEA**

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
021 (invited)	M.M. Vora	Saudi Arabia	Capacity building in radiopharmaceuticals: Saudi Arabia experience
022	M.Z. Abedin M. Azizul Haque	Bangladesh	Trends in indigenous radioisotope and radiopharmaceutical production in Bangladesh
024	M.M. Ishfaq H. Nizakat K.M. Bashar M. Jehangir	Pakistan	Experience on the production of Pakgen ⁹⁹ Mo- ^{99m} Tc generators
025	P. Rajec P. Macasek P. Kovac	Slovakia	BIONT – a new centre for PET radiopharmaceuticals production in Central Europe
026	K. Kamali Moghaddam	Iran, Islamic Republic of	Capacities and current activities of the Cyclotron and Nuclear Medicine Department of NRCAM
10:30–11:00	Coffee/Tea Break		

11:00–12:30

**SESSION 6:
Reactor Based Radionuclides
and Generators**

**Chairpersons: M. Jehangir, Pakistan
R. Mikolajczak, Poland**

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
027 (invited)	M. Venkatesh S. Chakraborty	India	Production of therapeutic radionuclides in medium flux research reactors
028 (invited)	F.F. Knapp, Jr. S. Mirzadeh M. Garland	USA	The continuing important role of high flux research reactors for production of therapeutic radioisotopes
029	E. Iller Z. Zelek M. Konior K. Sawlewicz J. Staniszevska R. Mikolajczak	Poland	Technological line for production of carrier-free ^{188}Re in the form of sterile, isotonic solution of sodium perrhenate (VII)
030	J.A. Flores de la Torre F. Monroy-Guzman V.E. Badillo Almaraz F.F. Knapp, Jr.	Mexico USA	Hydroxyapatite-based $^{99}\text{Mo}/^{99\text{m}}\text{Tc}$ and $^{188}\text{W}/^{188}\text{Re}$ generator systems
031	N. Ramamoorthy I. Goldman P. Adelfang	IAEA	Fostering development efforts towards (a) small scale local production of ^{99}Mo from LEU targets and (b) gel generator for $^{99\text{m}}\text{Tc}$ using (n, γ) ^{99}Mo — IAEA's role
12:30–14:00	Lunch Break		

14:00–15:30

**SESSION 7:
Poster Session A**

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
075P	S. Malja T. Çuçi	Albania	Radiopharmaceutical production in Albania and its future
076P	E.P. Parma A.C. Zarlenga E. Obenaus S. Gomez de Castiglia S.E. Vasquez M.C. Mayosky	Argentina	^{99m} Tc-EDDA/HYNIC-TOC in gastroenteropancreatic neuro endocrine tumours
078P	M. Hasan M.A. Karim	Bangladesh	The other chapter of use of radiopharmaceuticals in a developing country
079P	R. Manrique V.E. Pereyra N. Quisbert J. Mariscal	Bolivia	Historical review of radiopharmacy in Bolivia
080P	P.B. Pujatti M.A. Soares M.S.A. Castro C. Simal R.G. Dos Santos	Brazil	Preparation, characterization, and biodistribution study of technetium-99m -labelled crotalus venom
081P	R.L.S.R. Santos B.L. Faintuch E. Muramoto E. Muranaka M. Netter R. Schibli P.A. Schubiger	Brazil Switzerland	Labelling of thymidine with ^{99m} Tc-carbonyl and in vivo biodistribution studies
083P	Xie W.Ch.	China	Management and supervision of radiopharmaceuticals in China
084P	Zhang J.F. Li F. Ciu Y.R. Su X.	China	Internal dose assessment of ^{99m} Tc-HTOC
085P	N. Mesa Dueñas F. Zayas Crespo A. Perez Fuentes E. Olive Alvarez A. Rivero Santamaria Y. Alfonso Marin	Cuba	Evaluation of low and high molecular weight ^{99m} Tc- radiopharmaceuticals as a radiotracer for the diagnosis of inflammatory process

No. of Paper IAEA-CN-130/	Name	Designating Member State/Organization	Title of Poster
086P	G.J. Pimentel M. Paniagua J. Oliva A. Riaño F. Piñol M. Velasco R. Leyva I. Sánchez M. Miranda A. Paneque J. Castillo	Cuba	Colloidal bismuth subcitrate, a new agent for the scintigraphy of inflammatory bowel diseases
087P	A. Hernandez A. Perera A. Prats Y. Valdivia A. Alberti L. Alberdi M. Morgan M.A. Coca J.F. Batista L.O. Marrero	Cuba	Use of stannous fluoride (II) like reducer agent for ^{99m} Tc-labelling ciprofloxacin. Animal pharmacokinetic and biodistribution in animals
088P	A. Rivero Santamaría F. Zayas Crespo N. Mesa Dueñas Y. Alfonso Marín	Cuba	Differential chemical behaviour of humanized monoclonal antibodies radiolabelled with ^{99m} Tc
089P	T. Bayomy M. Razzak G. Ziada	Egypt	The effect of certain labelling parameters on the ^{99m} Tc - HMPAO complex formation - a chromatographic study
090P	A.E. Chiotellis Ch. Tsoukalas M. Pelecanou A. Papadopoulos I. Pirmettis M. Papadopoulos E. Chiotellis	Greece	A convenient synthetic procedure yielding 2-picolinamino-N,N-diacetic acid monoamide derivatives, for labelling with the <i>fac</i> -M(CO) ₃ +core
091P	O. Karagiorgou G. Patsis M. Pelecanou C.P. Raptopoulou A. Terzis T. Siatra- Papastaikoudi I. Pirmettis M. Papadopoulos	Greece	S-(2-(2'-pyridyl)ethyl)mercaptoacetic acid and S-(2-(2'-pyridyl)ethyl) mercaptopropionic as ligands for the " <i>fac</i> -[M(CO) ₃]" core (M = Re, ^{99m} Tc)

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
092P	S. Tzanopoulou G. Patsis M. Sagnou A. Panagiotopoulou A. Papadopoulos I. Pirmettis M. Papadopoulos M. Pelecanou	Greece	Complexes of 4-(aminophenyl) benzothiazole derivatives with technetium and rhenium, and assessment of their properties as diagnostic and/or therapeutic radiopharmaceuticals
093P	S. Chumber R. Kumar V. Svnu N. Tandon A. Malhotra	India	Utility of ^{99m}Tc labelled tetrofosmin in evaluation and surgical management of parathyroid adenoma
094P	A. Mathur M.B. Mallia K. Kothari S. Banerjee M. Venkatesh	India	Synthesis and radiolabelling of a fatty acid xanthate with [^{99m}TcN] $^{2+}$ core for its possible use in myocardial imaging
095P	P. Panwar P. Mishra K. Chuttani R. Chandra R.K. Sharma A.K. Mishra	India	Synthesis, characterization and in vivo skeletal localization of a new ^{99m}Tc based bifunctional multidentate phosphonate chelate: 5-amino-1,3-bis(ethylamine-(N,N dimethyl diphosphonic acid) acetamido) benzene
096P	M. Gandomkar R. Najafi M. Rabbani	Iran, Islamic Republic of	^{99m}Tc -EDDA-Tricine-HYNIC-TOC versus ^{99m}Tc -EDDA-Tricine-HYNIC-TATE: Synthesis and preclinical result of two new radiopharmaceuticals for somatostatin receptor scintigraphy
097P	M. Salouti H. Rajabi1 H. Babaei M.J. Rasaei1 M. Shafiee M. Mazidi Z. M. Hasan1 M. Rahnama M. Paknejad	Iran, Islamic Republic of	An anti-MUC1 monoclonal antibody for radioimmunoscintigraphy of breast cancer: indirect labelling of antibody with ^{99m}Tc via the HYNIC; in vitro and in vivo studies of the new radiopharmaceutical
098P	G. Shabani	Iran, Islamic Republic of	Preparation and bulk production of ^{99m}Tc -sestamibi with new formulation
099P	A.M. Al-Hilli I.F. Alwan H.M. Al-Azzawi	Iraq	Labelling efficiency and stability of some ^{99m}Tc radiopharmaceuticals in the presence of a competitive labelling agent
100P	S.M.D. Al-Nuzal Z.M.J. Al-Mosawy	Iraq	Design and synthesis of a novel semi-rigid multidentate ligands with amido, or amino donor groups: Versatile compounds for the preparation of rhenium and technetium radiopharmaceuticals

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
101P	A.F. Sedda G. Rossi C. Cipriani G. Atzei S.K. Shukla	Italy	Imaging of osseous lesions by ^{99m} Tc(V)-DMSA
102P	A.R. Anwar M.Y. Muhd Noor A. Yusof Azuddin R. Shararum D. Rosli M. Mohd Rizal H. Jusnan	Malaysia	Design of GMP compliance radiopharmaceutical production facility in MINT
103P	E. Gniazdowska L. Fuks J. Mieczkowski J. Narbutt	Poland	Tricarbonylrhenium (I) complexes with neutral bidentate N-methyl-2-pyridinecarboamide as a precursor of therapeutic radiopharmaceuticals
105P	B. Janota R. Mikolajczak E. Zakrzewska	Poland	^{99m} Tc-EDDA/HYNIC-TOC and ^{99m} Tc-EDDA/HYNIC-TATE – from CRP to extended clinical application
106P	M.R. Mititelu A. Rimbu G. Marinescu S. Ghita C. Mazilu I. Codorean	Romania	Use of ⁸⁹ Sr for bone pain palliation, experience in our department
107P	I. Al-Jammaz	Saudi Arabia	Radiopharmaceuticals production in Saudi Arabia: The status and prospects
108P	D. Djokic D. Jankovic	Serbia and Montenegro	Labelling of some amino acids with [^{99m} Tc(CO) ₃ (H ₂ O) ₃] ⁺ precursor: comparison of chemical and biological behaviour
109P	S. Jovanovic	Serbia and Montenegro	Regulatory aspects - the prerequisite of the future applications of radiopharmaceuticals in Montenegro
110P	T. Trtic-Petrovic K. Kumric J.J. Comor	Serbia and Montenegro	Supported liquid membrane extraction of ^{99m} Tc(VII) in a hollow fibre contactor
111P	S.M.A. Siddig	Sudan	Status of radiopharmaceuticals in Sudan
112P	T. Yassine K. Mohanna R. Mansour	Syrian Arab Republic	Current status of radiopharmaceuticals production at AECS laboratories
113P	A.F. Akgun H. Yildiz	Turkey	Establishment of a central quality control laboratory for radiopharmaceuticals
114P	M. Asikoglu K. Koseoglu H. Ozkilic	Turkey	Labelling of risedronate with ^{99m} Tc for bone scanning

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
115P	I. Dogan M. Ocak T. Cansiz N. Bergisadi I. Uslu L. Kabasakal	Turkey	^{99m} Tc labelling of alendronate: a new potent biphosphonate
116P	A.M. Rey E. Leon J. Giglio C. Decristoforo E. von Guggenberg	Uruguay Austria Germany	Preparation and characterization of ^{99m} Tc-RGD-yK-HYNIC peptide as potential radiopharmaceutical for nuclear oncology
117P	M. Ocak L. Kabasakal S. Sager C. Nisli H. Maecke C. Onsel I. Uslu	Turkey	Clinical experience with ^{99m} Tc hynic-octreotide and ^{99m} Tc hynic-octreotate in patients with somatostatin expressing tumours
118P	C. Naidoo K. Aardenah T.N. van der Walt G.F. Steyn	South Africa	The production of PET radiopharmaceuticals and generator-produced PET radionuclides by iThemba LABS (South Africa)
119P	G.J. Pimentel E. Estévez	Cuba	Calcium phytate: A promising lung perfusion agent without risk of biological contamination
15:30–16:00	Coffee/Tea Break		

16:00–17:30

**SESSION 8:
Novel Technetium Chemistry
and Radiopharmaceuticals - II**

**Chairpersons: A. Verbruggen, Belgium
M.R.A. Pillai, IAEA**

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
032 (invited)	R. Alberto	Switzerland	Novel technetium chemistry and radiopharmaceuticals: Tc(V), Tc(III) or Tc(I), which way to go for keeping Tc radiopharmaceuticals alive?
033	M. Saidi M. Trabelsi A. Mekni	Tunisia	New ^{99m} Tc-cytectrene piperidine compound as specific brain imaging agent
034	J. Narbutt M. Zasepa M. Czerwinski R. Schibli	Poland	Tricarbonyltechnetium (I) complexes with neutral bidentate ligands: N-methyl-2-pyridinecarboamide and N-methyl-2-pyridinecarbothioamide. Experimental and theoretical studies
035	B.L. Faintuch E. Muramoto L. Morganti R.M. Chura-Chambi N. Nascimento E.G. Garayoa P. Blauenstein P.A. Schubiger	Brazil Switzerland	Modified bombesin analogue with technetium tricarbonyl precursor as prostatic radiodiagnostic agent
036	I. Zolle R. Schibli M. Stichelberger F. Hammerschmidt M.L. Berger	Austria	Synthesis and characterisation of enantiomerically pure bipyridinyl-MTO as the ^{99m} Tc-tricarbonyl-conjugate - ^{99m} Tc-metomidate
037	M.M. Saw F.X. Sundram T.S.A. Hor Y.Y. Kai R. Alberto	Singapore Switzerland	Direct labelling of lipiodol with [¹⁸⁸ Re(CO) ₃]-chelates

WEDNESDAY, 16 NOVEMBER 2005

09:00–10:30 **Session 9:**
Pharmacology and
Therapeutic Radiopharmaceuticals

Chairpersons: **C. Decristoforo, Austria**
 K.K. Solanki, IAEA

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
038 (invited)	Gy.A. Janoki L. Balogh A. Polyak D. Mathe L. Korosi R. Kiraly	Hungary	Biological and chemical evaluation of various radiocolloids used for clinical radiosynovectomy
039 (invited)	M.R. Zalutsky O.R. Pozzi G. Vaidyanathan	USA	Targeted radiotherapy with alpha particle emitting radionuclides
040	V. Lungu D. Niculae D. Chiper M. Radu	Romania	DOTA-Tyr3-Octreotate labelled with Lu-177 and I-131 – comparative evaluation
041	T. Das S. Chakraborty A. Mukherjee S. Banerjee G. Samuel H.D. Sarma M. Venkatesh	India	¹⁷⁷ Lu labelled nitroimidazoles and nitrotrifazoles for possible use in targeted therapy of hypoxic tumours
042	Y.P. Oliver A.M. Robles V. Trinidad G.P. Cabral V. Tortarolo A. Nappa G. Rodriguez H.S. Balter	Uruguay	Labelling and biological valuation of anti-CD-20 for treatment of non-Hodgkin's lymphoma
10:30–11:00	Coffee/Tea Break		

11:00–12:30 **SESSION 10:
Therapeutic Radiopharmaceutical
Applications**

Chairpersons: **H.R. Maecke, Switzerland**
M. Dondi, IAEA

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
043 (invited)	S.J. Goldsmith S. Vallabhajosula M.I. Milowsky R.M. Nanus N.H. Bander	USA	¹⁷⁷ Lu-DOTA-antiPSMA: Toxicity, dosimetry and clinical efficacy
044 (invited)	M.H. de Jong D. Kwekkeboom, R. Valkema, E. Krenning	Netherlands	Radiolabelled somatostatin analogs for radionuclide therapy of tumours
045	N. Ozlem Kucuk S. Sinan Gultekin G. Aras E. Ibis	Turkey	Iodine whole body scan, thyroglobulin levels, Technetium-99m MIBI scan and computed tomography: results in patients with lung metastasis from differentiated thyroid cancer
046	S.B. Sergieva T. Hadjieva V. Botev A. Dudov	Bulgaria	^{99m} Tc-MIBI and ¹³¹ I scintigraphy in the follow-up of differentiated thyroid carcinoma (DTC) patients after surgery
047	V.E. Soroa M.H. Velazquez Espeche C. Giannone G. Naswetter H. Caviglia G. Galatros	Argentina	Results of knee radiosynoviorthesis in hemophilic and rheumatoid arthritic patients with P-32 colloid of local production
12:30–14:00	Lunch Break		

14:00–15:30

**SESSION 11:
PET Radiopharmaceuticals**

Chairpersons:

**H.H. Coenen, Germany
M.C. Lee, Korea, Republic of**

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
048 (invited)	V.W. Pike S.Y. Lu J. Hong J.L. Musachio J.A. McCarron	USA	Alternative methods for making [¹¹ C]amides — Application to the preparation of 5-HT _{1A} receptor radioligands
049 (invited)	M. Mitterhauser	Austria	F-18 and carbon-11 PET tracers for research and routine
051	F.J. Al-Saeedi	Kuwait	[Methyl- ³ H]-choline tumour incorporation
052	A.R. Jalilian P. Rowshanfarzad M. Sabet J. Moafian	Iran, Islamic Republic of	Production, formulation, module design and quality control of [¹³ N]NH ₃ for future PET studies in Iran
15:30–16:00	Coffee/Tea Break		

16:00–17:30 **SESSION 12:**
Radioiodine Radiopharmaceuticals

Chairpersons: **H.S. Balter, Uruguay**
 G.-J. Beyer, Switzerland

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
053 (invited)	J.J. Comor G.-J. Beyer G.J. Pimentel	Serbia and Montenegro Switzerland Cuba	Production of radioiodines with medical PET cyclotrons
054 (invited)	J. Mertens	Belgium	New development in radio-iodinated radiopharmaceuticals for SPECT and radionuclide therapy
055	E. Bortoleti Araújo L.T. Nagamati E. Muramoto J.S. Caldeira Filho R.M. Couto C.P.G. Silva	Brazil	Comparison of [¹³¹ I]-Tyr3-octreotate and [¹³¹ I]DOTA-Tyr3-octreotate: the effect of DOTA on the pharmacokinetics and stability
056	T. Fischer H. Schmickler H. Schicha K. Schomäcker	Germany	Iodine labelled diethylstilbestrol (DES) of high specific activity: A potential radiopharmaceutical for therapy of estrogen receptor-positive tumours and their metastases?

THURSDAY, 17 NOVEMBER 2005

09:00–10:30 **SESSION 13:**
F-18 Radiopharmaceuticals
and Automation of Synthesis

Chairpersons: **V.W. Pike, USA**
 D. Soloviev, Switzerland

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
058 (invited)	H.H. Coenen	Germany	Advances in F-18 radiopharmaceutical chemistry
059 (invited)	P.K. Garg S. Garg	USA	F-18 based radiopharmaceutical and automation of synthesis: New F-18 radiopharmaceuticals
060	I. Al-Jammaz B. Al-Otaibi H. Ravert J. Amartey	Saudi Arabia	Rapid method for radiofluorination of pyridine derivatives: Prosthetic groups for radiolabelling bioactive molecules
061	R.J. Abdel-Jalil M. Übele W. Ehrlichmann W. Voelter H.-J. Machulla	Jordan	1-[¹⁸ F]Fluoroethyleneglycol-2-nitroimidazoles, a novel class of potential hypoxia PET markers
062	Wang M.W. Yin D.Z. Wang Y.X.	China	Radiosynthesis and in vivo evaluation in melanoma-bearing mice of O-(2-[¹⁸ F]Fluoroethyl)-L-tyrosine as tumour tracer
10:30–11:00	Coffee/Tea Break		

11:00–12:30	SESSION 14: Round Table Discussion on Cyclotron-PET Facility		
Moderators:	M. Dondi, IAEA M. Haji-Saeid, IAEA		
12:30–14:00	Lunch Break		
14:00–15:30	SESSION 15: Poster Session B		
<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
120P	S. Malja K. Schomäcker	Albania Germany	Some preliminary results on labelling of 1-hydroxyethylenediphosphonic acid (HEDPA) with ⁹⁰ Y
121P	B.L. Faintuch V. Stoianov R.L.S.R. Santos A. Duatti C.J. Smith	Brazil Italy USA	Labelling of bombesin analogue by asymmetrical technetium-99m nitrido core
122P	J.L. Crudo E. Obenaus S.G. de Castiglia	Argentina	Human polyclonal IgG labelled with three different Beta-emitter radionuclides: Labelling yields and in vitro stability studies
123P	M.J. Salgueiro M. Soberano R. Ughetti M. Nicolini J. Nicolini M.B. Zubillaga (Presented by: V.E. Soroa)	Argentina	Evaluation of a ³² P patch for therapy of squamous cell carcinoma in cats
124P	I. Zolle St. Hahner M.L. Berger F. Hammerschmidt A. Schirbel	Austria Germany Austria Germany	Inhibitors of adrenal P-450c11 hydroxylase characterized by radioligand displacement and steroid hormone secretion
125P	S. Afroz N. Islam H. Rashid M. Shahidullah N. Ali N.F. Ali	Bangladesh	Use of Sr-90 beta emitter as an antifungal agent - an innovative dimension in therapeutic nuclear medicine
126P	G. Sirandoni J. Sapunar L. Rios C. Millaquero	Chile	¹³¹ I treatment response in thyroid neoplasms and evaluation of radiation dose complications. A review of ten years of experience

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
127P	A. Perera G. Lopez A. Casaco L.A. Torres J.F. Batista Y. Pena M.A. Coca I. Garcia J. Figueredo R. Leyva R. Gamboa L. Alberdi A. Hernandez A. Xiques A. Prats M. Zamora	Cuba	¹⁸⁸ Re labelled anti-EGFr humanized monoclonal antibody h-R3 for radioimmunotherapy of gliomas
128P	G.J. Pimentel R. Ravelo L. Pérez M. Ayala M. Miranda I. Sánchez J. Gavilondo	Cuba	Dimeric scFv antibody construct of ior-CEA1 as potential agent for therapeutic application
129P	A. Prats A. Perera R. Leyva R. Mocoelo D. Beckford L. Garcia Y. Moreno A. Hernández I. Hernández M. León	Cuba	Development of a new ¹³¹ I-labelled bisphosphonic acid for palliative therapy of metastatic bone pain
130P	M. Laznicek A. Laznickova	Czech Republic	The role of somatostatin receptors in normal tissues in pharmacokinetics of radiolabelled octreotates
131P	A. Laznickova M. Petrik L. Melicharova M. Laznicek M.R. Zalutsky	Czech Republic USA	Preclinical study of radioiodinated glucose-Tyr3-octreotate: Comparison with ¹¹¹ In-DOTA-Tyr3-octreotate
132P	K. Bapat U. Pandey H.D. Sarma G. Samuel M. Venkatesh	India	Bio-evaluation of ⁹⁰ Y phosphate for radiation synoviorthesis in animal models of arthritis
133P	M. Chakrabarty P.R. Chaudhari S.C. Krishnamurthy	India	[^{186/188} Re]rhenium sulphur colloid/lipiodol suspension: radiolabelling and biodistribution following intrahepatic arterial injection in HCC bearing rats

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
134P	S. Chakraborty T. Das S. Banerjee A. Mukherjee A. Korde G. Samuel M. Venkatesh	India	Preparation and evaluation of ¹⁷⁷ Lu-DOTA-Tyr3-Octreotate for use as a therapeutic radiopharmaceutical
135P	D.K. Hazra A.K. Gupta S. Saxena S.K. Sharma P.K. Gangwar P. Khanna Hazra S. Gupta P. Garg A. Kumar	India	Radioimmunotargetting in India with special reference to hepatic metastases: recent advances
136P	D.K. Hazra A.K. Gupta P. Khanna Hazra S.K. Sharma	India	Radiobioconjugate targetting in cancer in developing countries: Regulatory issues
137P	P. Tandon S.H. Joshi M. Venkatesh B.S. Rao	India	Estimation of radiation dose to Indian reference man due to indigenously produced renal and liver radiopharmaceuticals
138P	M.H. Babaei G. Vahabzadeh	Iran, Islamic Republic of	In vitro cell toxicity of 4'-epi-iodo[¹²⁵ I]-4'-deoxy-doxorubicin on human colon cancer
139P	A.R. Jalilian P. Rowshanfarzad M. Sabet G. Raisali	Iran, Islamic Republic of	Preparation of [⁶⁸ Ga]bleomycin complex as a possible PET radiopharmaceutical
140P	A.R. Jalilian P. Rowshanfarzad M. Kiyomarsi M. Sabet A.R. Karimian S. Moradkhani F. Saddadi G. Raisali	Iran, Islamic Republic of	Production, quality control and initial imaging studies of [^{62m} Rb]Rb injection for PET studies
141P	A.R. Jalilian B. Fateh A. Karimian M. Kamalidehghan S. Moradkhani	Iran, Islamic Republic of	Preparation, distribution, stability and tumour imaging properties of [⁶² Zn] bleomycin complex in normal and tumour-bearing mice as a molecular PET generator

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
142P	K. Kamali Moghaddam B. Fateh M. Mirzaei A.R. Jalilian	Iran, Islamic Republic of	Production of ¹²³ I (NaI) radiopharmaceutical via xenon gas target, using NRCAM cyclotron
143P	A. Sattari F. Sadadi S. Moradkhani M. Poladi	Iran, Islamic Republic of	Fast Preparation of ¹³¹ I mIBG at NRCAM
144P	Y.D. Hong O.J. Choi S.M. Choi S.J. Choi	Korea, Republic of	¹⁶⁶ Ho labelled DTPA derivative for radiation brachytherapy using catheter balloons
145P	E. Janevik-Ivanovska M. Angeleska B. Andonovski B. Crcareva D. Miladinova S. Miceva-Ristevska	The Former Yugoslav Republic of Macedonia	In-house prepared diagnostic radiopharmaceuticals for nuclear oncology - step towards development of the radionuclide therapy
146P	W.H.B. Wan Kamal S. Mohd Yen Ng R. Hashim Z. Md. Safee	Malaysia	Iodine-131 labelled monoclonal antibody in the diagnosis of colon cancer
147P	A. Korsak D. Pawlak R. Mikolajczak U. Karczmarczyk	Poland	HEDP- ¹⁸⁸ Re kit as a bone therapeutic drug – formulation and biodistribution studies
148P	R.J. Lipka E. Jakubowska A. Korsak	Poland	Problems in quality control of excipients in radiopharmaceutical kits. Validation of standard addition method in quality control of ascorbic acid assay in ¹⁸⁸ Re-HEDP kit
149P	D. Pawlak A. Korsak R. Mikolajczak	Poland	Comparative evaluation of DOTA-TATE radiolabelled with ¹⁷⁷ Lu and ⁹⁰ Y
150P	D. Pawlak A. Korsak R. Mikolajczak M. Zuchlinska M. Konior	Poland	¹⁸⁸ W/ ¹⁸⁸ Re generator - investigation of long term stability
151P	M. Pruszyński A. Bilewicz B. Wąs B. Petelenz Yu. Norseev	Poland Russian Federation	Binding of ²¹¹ At- Rh(16-S4-diol) complexes to biomolecules - a new tool for preparation of astatine radiopharmaceuticals

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
152P	F.M. Marques L. Gano M.P. Campello S. Lacerda J. Costa R. Delgado I. Santos	Portugal	Biological evaluation of ¹⁵³ Sm and ¹⁶⁶ Ho complexes with macrocyclic ligands containing acetate pendant arms as potential agents for therapy
153P	M.R. Mititelu G. Marinescu I. Codorean O. Bajenaru	Romania	Use of ^{99m} Tc HMPAO in demonstrating perilesional changes in intracerebral hemorrhage
154P	V. Lungu D. Niculae P. Bouziotis I. Pirmettis P. Albert	Romania	In vitro and in vivo evaluation of phosphonates labelled with therapeutic radionuclides
155P	A.B. Bruskin A.S. Sevast'anova V.A. Andronov G.E. Kodina	Russian Federation	Gallium-68 solution for biomolecules labelling
156P	D. Soloviev C. Tamburella C. Thomas-Dasse D. Sciola-Blidi	Switzerland	Qualification of the GMP compliant FDG production and distribution unit
157P	A.H. Al R ayyes	Syrian Arab Republic	Syrian experience of ¹⁸ F-FDG production system setup and related quality control aspects
158P	S.F. Sawe D.W. Shao Y.Y. Sungita W. Muhogora	United Republic of Tanzania	Regulatory control of radiopharmaceuticals in Tanzania
159P	D.W. Shao W.E. Muhogora F.P. Banzi	United Republic of Tanzania	Regulatory aspects on the management of waste generated from radiopharmaceuticals application in Tanzania
160P	N. Poramatikul W. Sriwiang N. Minsakorn Ch. Permtermsin J. Sangsuriyan	Thailand	¹⁸⁸ Re(V) complex of cyclam, a stable rhenium-188 core potential for development of therapeutic radiopharmaceutical

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161P	A. Hicsonmez N.O. Kucuk M. Nalca Andrieu Y. Guney K. Kose C. Kurtman E. Ibis G. Aras	Turkey	Role of radionuclide therapy as adjuvant to palliative external beam radiotherapy for painful multiple skeletal metastasis
162P	N.O. Kucuk H.A. Kulak P. Tari E. Tokmak E. Ibis	Turkey	Treatment for microcarcinoma of the thyroid clinical experience
163P	N.O. Kucuk H.A. Kulak E. Tokmak P. Tari E. Ibis	Turkey	Hurthle cell carcinoma - a clinicopathologic study of 13 cases
164P	O.I. Solodyannikova	Ukraine	Radiopharmaceuticals in diagnostic and treatment of thyroid cancer
165P	H.S. Balter A.M. Robles G.P. Cabral Y.P. Oliver G. Rodriguez A. Lopez A. Nappa L. Mallo V. Trindade S. Lanzzeri S. Verdera N. Berois	Uruguay	DOTA-TATE alternative labellings with halogens and radiometals
166P	E.O. Savio G.P. Cabral O. Alonso	Uruguay	Intracoronary radionuclide therapy with liquid ¹⁸⁸ Re-filled balloons: Radiopharmaceutical and dosimetric studies
167P	H.M.A.K. Al-Azzawi S.A.E. Abas S.S. Ahmed S.G. Omran R.H. Risan	Iraq	Labelling of new formulation of tin-sucralfate freeze-dried kit with technetium-99m and its biological evaluation
168P	D. Keskin-tepe A.Y. Özer	Turkey	Residual activity and adsorption studies on commercial radiopharmaceutical kits and syringes
169P	T. Fischer C. Otto M. Jensen H. Schicha K. Schomäcker	Germany	Localization of ¹³¹ I-labelled monoclonal antibody ERIC1 in a subcutaneous xenograft model of neuroblastoma in SCID mice

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170P	R. Leyva I. Hernández González M. Zamora Barrabí D. Beckford Vera	Cuba	¹⁸⁸ Re-labelled anti-CD20 monoclonal antibody: Labelling and quality control studies
171P	F.J. Al-Saeedi	Kuwait	A novel finding: Anti-androgen flutamide kills androgen-independent PC-3 cells: A radiolabelled methyl-choline incorporation into tumour cells
172P	F.J. Al-Saeedi	Kuwait	[Methyl- ³ H]-choline incorporation into MCF-7 cells: Correlation with proliferation: Choline kinase and phospholipase D assay
173P	J.J. Comor T. Trtic-Petrovic K. Kumric	Serbia and Montenegro	Production of uncommon radionuclides for nuclear medicine at the TESLA Accelerator Installation
174P	L.I. Arrechadera Mejias D.H. Guerra Berrizbeitia C.M. Longo Pardey M.M. Morales Sanchez	Bolivarian Republic of Venezuela	Facilities for national production of cold kits in Venezuela
175P	D.D. Rossouw M.G. Loetter H. du Raan S.E. Jansen	South Africa	Radiosynthesis and bio-evaluation of ¹²³ I-labelled 2-methyl-4-nitroimidazole derivatives as potential infection imaging agents
176P	Cheng Z.Y. Li M.L. Deng Q.M. Feng Y.H. Li H.Y. Chai D. Zhang J.S. Wan J.Y. Xi D.P. Chen X.H.	China	Feasibility study of the utilization of medical isotope production reactor (MIPR) for ⁹⁹ Mo production
177P	M.J. Avila Sobarzo	Chile	The CCHEN's cyclotron radioisotope programme and its impact after two years of operation
15:30–16:00	Coffee/Tea Break		

16:00–17:45

**SESSION 16:
Cyclotron Based Radionuclides
and Generators**

**Chairpersons: M.M. Vora, Saudi Arabia
M. Haji-Saeid, IAEA**

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
063 (invited)	D. Schlyer	USA	Production of radionuclides with a cyclotron
064 (invited)	G.-J. Beyer H.L. Ravn U. Köster	Switzerland	Perspectives for the large-scale production of radiolanthanides with medical potential
065	M. Figols de Barboza V. Sciani R. Herrerias L.C.A. Sumiya A.A. Souza M.M. Goes J.T. Pires J. Mengatti C.P. Gomez da Silva	Brazil	Production of ^{123}I MIBG at IPEN-CNEN/SP
066	A. Bilewicz B. Bartoś R. Misiak B. Petelenz	Poland	New strontium-82/rubidium-82 generator
067	M. Sadeghi H. Afarideh G. Raisali M. Haji-Saeid	Iran, Islamic Republic of IAEA	Cyclotron production of ^{103}Pd via proton-induced reactions on ^{103}Rh target
068	F. Roesch	Germany	The status and potential of new radionuclide generators providing positron emitters to synthesise new targeting vectors for PET

FRIDAY, 18 NOVEMBER 2005**09:00–10:30** **SESSION 17:
Radiopharmacy****Chairpersons:** **N.G. Hartman, UK
E. Janevik-Ivanovska, The Former
Yugoslav Republic of Macedonia**

<i>No. of Paper IAEA-CN-130/</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
069 (invited)	K. Ozker	USA	Nuclear pharmacy practices in the USA
070 (invited)	A.A. Soylyu	Turkey	Regulatory aspects of hospital radiopharmacy and clinical trials
071	P.S. Choudhury N.C. Goomer A. Gupta D.C. Doval T. Kataria A.K. Vaid P.K. Sharma	India	Standardization and quality control of an in-house formulation of ^{99m} Tc-(V)-DMSA for imaging and assessment of tumour biology: Work in progress
072	I. Oyarzábal R. Jimenez-Shaw	Spain	Development of centralized radiopharmacies in Spain: A successful experience in Europe
073	M.C. Gil J. Ribbeck M. Tomicic H. Amaral R. Pruzzo B. Morales I. Coudeu M. Chinol G. Paganelli	Chile Italy	Peptide receptor radionuclide targeting of neuroendocrine tumours with ¹¹¹ In/ ⁹⁰ Y-DOTATOC
10:30–11:00	Coffee/Tea Break		

11:00–12:30 **SESSION 18:**
Round Table Discussion
on GMP and Regulatory Aspects

Moderators: **G. Westera, Switzerland**
 N. Ramamoorthy, IAEA

12:30–14:00 Lunch Break

14:00–15:20 **SESSION 19**
Summary Presentations on
Trends in Radiopharmaceutical Research

Conclusions and Recommendations

15:20–15:30 **Closing of the Symposium.**

