

10th International Symposium
on the Physical, Molecular, Cellular and Medical Aspects of Auger Electron Processes
September 6-8, 2023

Institut de Recherche en Cancérologie de Montpellier - France

PROGRAMME

Click on blue tittle to see the abstract (pdf)

Wednesday, September 6

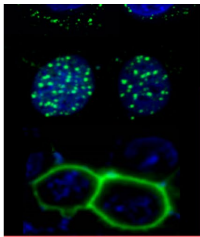
Cours d'honneur, Bâtiment Historique Faculté de Médecine de Montpellier, 2 Rue de l'École de Médecine

- 15:00-16:30** **Badge and Symposium Materials Pick Up**
- 16:30-18:30** **Walking tour in Montpellier** (departure and arrival at Faculté de Médecine de Montpellier)
- 18:30-20:00** **Welcome Reception** (Hors d'oeuvre and cocktails)

Thursday, September 7

Institut de Recherche en Cancérologie de Montpellier (<https://www.ircm.fr/>)

- 08:00-08:30** **Badge and Symposium Materials Pick Up and Poster Set-Up**
- 08:30-08:45** **Opening remarks**
Prof. Jean-Pierre Pouget (INSERM Montpellier, France)
Prof. Raymond Reilly (University of Toronto, Canada)
- 08:45-10:00** **Keynote Session and Panel Discussion**
Challenges and opportunities for exploiting Auger electrons for cancer therapy.
Questions/comments from the audience.
- Prof. Ulli Koester (Institut Laue-Langevin, France)
 - Prof. Roger Howell (Rutgers University, USA)
 - Prof. Jean-Pierre Pouget (INSERM Montpellier, France)
 - Prof. Raymond Reilly (University of Toronto, Canada)
 - Prof. Katherine Vallis (Oxford University, UK)
- 10:00-10:30** **Refreshment Break**
- 10:30-11:45** **Selected Oral Presentations – Radionuclide Production**
Co-Chairs: Prof. Ulli Koester (Institut Laue-Langevin, France),
Prof. Valery Radchenko (TRIUMF/University of British Columbia, Canada)
- [RN-1: "Production of research radionuclides for Meitner-Auger emitting radionuclide ligand therapy at TRIUMF"](#). Valery Radchenko, Vancouver, Canada
 - [RN-2: "Production of Radiolanthanides for Auger electron Therapy"](#). Zeynep Talip, Villigen – Switzerland



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- [RN-3: "Purification and chelation of antimony-119 for Targeted Meitner-Auger Therapy"](#). Aivija Grundmane, Vancouver – Canada
- [RN-4: "Charged particle reaction modeling via proton bombardment on natural antimony – applications and implications"](#). Catherine Apgar, Berkeley – United States
- [RN-5: "Improved procedures of the production and purification of the Auger emitters lanthanum-135 and erbium-165"](#). Claire Deville, Roskilde – Denmark

11:45-12:30

PRISMAP (<https://www.prismap.eu/>) session

- PRI-1: "Production of Auger emitters in PRISMAP". Mikael Jensen, Roskilde – Denmark
- [PRI-2: "Evaluation of the therapeutic potential of \$^{64}\text{CuCl}_2\$ in 3D models of glioblastoma"](#). Filipa Mendes, Lisboa – Portugal
- PRI-3: "Possibilities and options for production of Auger emitters in PRISMAP". Thierry Stora, Geneva – Switzerland

12:30-14:00

Lunch and Poster Session

14:00-15:30

Selected Oral Presentations – Physics and Radiation Dosimetry

Co-Chairs: Prof. Roger Howell (Rutgers University, USA),
Prof. Manuel Bardiès (INSERM Montpellier, France)

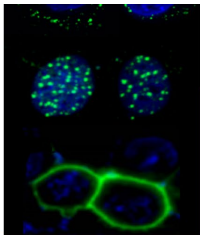
- [PHYS -1: "Comparison of Auger track structure codes used to calculate the energy deposition within the DNA"](#). Alexandre França Velo, New York – United States
- [PHYS -2: "Modeling Auger decay widths with non-Hermitian quantum chemistry methods: benzene and zinc as case studies"](#). Anthuan Ferino Pérez, Leuven – Belgium
- [PHYS-3: "Computation of resonant Auger decay in aromatic compounds with time-dependent density functional theory"](#). Ha Quyen Nguyen, Leuven – Belgium
- [PHYS-4: "Harnessing Auger effect to cancer therapy: combination of a heavy-atom drug and characteristic photons derived from a novel transmission-target XRay source"](#). Erh-Hsuan Lin, Taipei – Taiwan
- [PHYS-5: "Intermediate-LET Chemical effects observed in Distal Part of Proton Bragg Peak that could be assigned to Auger electrons"](#). Gérard Baldacchino, Gif sur Yvette – France
- [PHYS-6: "Impact of \$^{111}\text{In}\$ -labeled radioimmunoconjugate tumor penetration on tumor control probability: use of a spheroid model of varying size"](#). Ali Asghar Parach, Montpellier – France

15:30-16:30

Selected Oral Presentations – Radiobiology

Co-Chairs: Prof. Jean-Pierre Pouget (INSERM Montpellier, France)
Prof. Filipa Mendès (Lisboa, Portugal).

- [BIO-1: "In vitro cytotoxicity of Auger electron-emitting \$^{197}\text{Hg}/^{197\text{m}}\text{Hg}\$ acetate complexes on 4T1 cells and tumour growth inhibition in vivo in mice with 4T1 tumours after intratumoural injection"](#). Constantine Georgiou, Toronto – Canada



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- [BIO-2: “\[¹²³I\]CC1: A PARP-Targeting Auger Electron Emitting Radiopharmaceutical for Radionuclide Therapy of Cancer”](#). Luis Hernandez Cano, Groningen – Netherlands
- [BIO-3: “Models for future radiobiological assessment of AE therapy”](#). Julia Raitanen, Vienna – Austria
- [BIO-4: “Investigating the subcellular localisation of thallium \(Tl⁺\) using ion beam analysis”](#). Katarzyna Wulfmeier, London – United Kingdom
- [BIO-5: “Platinum nanoparticles labeled with iodine-125 for combined „chemo-Auger electron” therapy of hepatocellular carcinoma”](#). Agnieszka Majkowska, Warsaw – Poland

16:45-17:15 Refreshment Break

17:15-18:30 Historical Session – The Discoveries of Auger Electron Processes

Denis Guthleben and Delphine Blanchard (CNRS Paris, France)
Ulli Koester (ILL, Grenoble, France)

19:30-22:30 Symposium Dinner

Symposium bus to the Restaurant « Le petit jardin » Montpellier is provided

Friday, September 8

Institut de Recherche en Cancérologie de Montpellier (<https://www.ircm.fr/>)

08:25-08:30 Welcome remarks

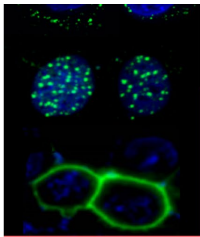
Prof. Jean-Pierre Pouget

08:30-09:30 Selected Oral Presentations – Chemistry and Radiochemistry

Prof Bart Cornelissen (University Medical Center Groningen, Groningen, the Netherlands/University of Oxford, Oxford, UK).

Prof. Raymond Reilly (University of Toronto, Canada)

- [CHEM-1: “Superoxide radicals produced in liquid water by soft X-rays”](#). Marie-Anne Hervé du Penhoat, Paris – France
- [CHEM-2: “Chelation of the Exotic Meitner-Auger Emitter Mercury-197m/g with Sulfur-Rich Ligands: Towards the Future of Theranostic Radiopharmaceuticals”](#). Parmissa Randhawa, Burnaby – Canada
- [CHEM-3: “Optimization of the Separating Resin for establishing a ¹⁰³Ru/ ^{103m}Rh Generator”](#). Marie Thery, Nantes – France
- [CHEM-4: “Mitigation of the inherent risk posed by the release of a daughter radioisotope in the case of Auger emitting radionuclides”](#). Jan Rijn Zeevaart, Pretoria – South Africa
- [CHEM-5: “On the Way to Capture the Exotic Auger Emitters Mercury-197m/g with Sulfur-Containing Macrocyclic Chelators”](#). Marianna Tosato, Reggio Emilia – Italy



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09:30-12:00 **Selected Oral Presentations – Nanoparticles and Radiosensitization Effects of Auger Electrons**

Co-Chairs: Dr. Zhongli Cai (University of Toronto, Canada)
Prof H el ene Elleaume (INSERM Grenoble).

09:30-10:00 **Keynote lecture:**

“Developing a Novel Radiation Therapy Involving Auger Electrons: Nanoparticles and DNA Binding Reagents”

Prof Fuyu Tamanoi (Kyoto University, Japan – UCLA, United States)

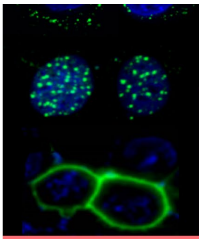
10:00-10:30 **Refreshment Break**

10:30-12:00

- [NANO-1: “Evaluation of the radiosensitizing effect of gold nanoparticles in glioblastoma”](#). Catarina Pinto, Lisboa – Portugal
- [NANO-2: “Synthesis of Gold Nanoparticles Labeled with Auger Electron Emitters: ¹⁹⁷Hg/¹⁹⁷mHg as Potential Therapeutic Radiopharmaceuticals”](#). Rafał Walczak, Warsaw – Poland
- [NANO-3: “Modelling survival curves in enhanced radiotherapy with gold nanoparticles using a realistic cell model”](#). Joana Antunes, Lisboa – Portugal
- [NANO-4: “EGFR-targeted ¹⁹⁷Hg/¹⁹⁷mHg-labeled gold nanoparticles are internalized and imported into the nucleus of human glioblastoma multiforme \(GBM\) cells and are cytotoxic by emission of Auger electrons”](#). Madeline Brown, Toronto – Canada
- [NANO-5: “Nanoscale energy deposition is dependent on the location of Auger electron-emitting radionuclides incorporated into spherical gold nanoparticles \(AuNP\) and the size of the AuNP”](#). Zhongli Cai, Toronto – Canada
- [NANO-6: “Ferroptosis is involved in gadolinium-based-nanoparticles mediated sensitization to TRT”](#). Julie Constanzo, Montpellier – France

12:00-12:45 **Poster short oral presentation (3’)**

- [POST-1: “Bioconjugates of ¹⁰⁹Pd/^{109m}Ag in-vivo generators for targeted Auger electron therapy”](#). Aleksander Bilewicz, Warsaw – Poland
- [POST-2: “Is Stopping Power of Auger electrons in water equivalent to that in DNA or other biological targets”](#). Ceferino Obcemea, Bethesda – United States
- [POST-3: “Unveiling the PARP1 trapping properties of \[¹²³I\]CC1”](#). Luis Hernandez-Cano, Groningen – Netherlands
- [POST-4: “Kit preparation of ⁸⁹Zr-labeled pembrolizumab injection under GMP conditions – A model for the formulation of Auger electron-emitting theranostics for advancement to first-in-human studies”](#). Stephanie Borlase, Toronto – Canada



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- [POST-5: “Minimum molar activity of 195mPt and other Pt radioisotopes for chemo-Auger radiopharmaceutical therapy of chemoresistant tumours”](#). Christophe Cantelli, Montpellier – France
- [POST-6: “The pair 103Ru/103mRh as a potential Auger electron emitter generator for Auger Therapy: the challenge of the tricky chemistry of Ru”](#). Sandrine Huclier, Nantes – France
- [POST-7: “197Hg/ 197mHg-labeled panitumumab – an Auger electron-emitting radioimmunotherapeutic agent for EGFR overexpressing triple-negative breast cancer”](#). Raymond Reilly, Toronto – Canada
- [POST-8: “Auger decay rates and spectra from complex-variable electronic structure methods”](#). Florian Matz, Leuven – Belgium

12:45-14:00

Poster Session and Lunch

14:00-15:00

Selected Oral Presentations – Experimental Therapeutics and Clinical Translation

Co-Chairs: Prof. Cristina Muller (PSI, Zurich)
Prof. Katherine Vallis (Oxford University, UK)

14:00-14:30

Keynote lecture:

“Can We Profit from Conversion and Auger Electron Emission of 161Tb with Somatostatin Receptor Antagonists?”

Prof Cristina Muller (PSI, Zurich, Switzerland)

14:30-15:00

- [EXP-1: “Optimizing nuclear targeting for Auger Targeted Radionuclide Therapy of ovarian cancer”](#). Gaël Ouerdane, Montpellier – France
- [EXP-2: “EGFR-targeted Meitner-Auger electron radioimmunotherapy and molecular imaging of tumour recurrence in a mouse model of metastatic triple-negative breast cancer with panitumumab-DOTA111In”](#). Valerie Facca, Toronto – Canada

15:00-16:15

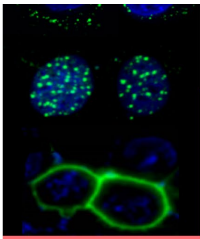
Selected Oral Presentations – Auger Electrons vs. Beta vs. Alpha Particles

Co-Chairs: Prof. Elif Hindie (University Hospital Centre Bordeaux, France)
and Dr. Julie Constanzo (INSERM Montpellier, France)

[ABA-1: “Bone marrow dosimetry model for somatostatin receptor-based radiotherapies: comparison between lutetium-177 and terbium-161”](#). Jens Hemmingsson, Gothenburg – Sweden

[ABA-2: “Internal conversion electrons are the main contributors of the increased nuclear absorbed dose of \[161Tb\]Tb versus \[177Lu\]Lu-DOTATATE”](#). Kaat Spoormans, Mol – Belgium

[ABA-3: “Comparison of DNA double strand breaks and cytotoxicity caused by \$\alpha\$ -particle-emitting 225Ac-DOTAtrastuzumab and Auger electron-emitting 111In-DOTA-trastuzumab on HER2-positive breast cancer cells”](#). Misaki Kondo, Toronto – Canada



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[ABA-4: "Role of extracellular vesicles during bystander cytotoxicity and bystander immunity of Auger and alpha-targeted radionuclide therapy"](#). Jean-Pierre Pouget, Montpellier – France

[ABA-5: "Radiobiological and preclinical imaging studies of PSMA-targeted radioconjugates containing a mitochondria-tropic carrier"](#). António Paulo, Lisboa – Portugal

16:15-16:30

Closing Remarks and Student Awards Presentations

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