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EDUCATION

2011-2015

School of Pharmacy, Tehran University of Medical Sciences, Tehran, Iran.

Ph.D. degree in Radio Pharmacy

Research Advisors: Dr.Soraya Shahhossini, Dr.Davood Beiki, Dr.Farzad Kobarfard

Dissertation: Synthesis, radiolabeling, quality control and biological evaluation of LIKKPF peptide and its analogs with 18F-FDG for in vivo imaging of apoptosis

This thesis was done in 6 main step:

- Peptide synthesis
 - Designs and synthesizes new peptides based on affinity to apoptotic cells.
- Attached bi-functional chelators
 - Attached functional chelating agents such as 6-Hydrazinonicotinamide and N-(1-ethoxyethylidene)-2-aminoxyacetic acid N-Hydroxysuccinimidyl to peptides
- Radiolabeling
 - Peptides radiolabeled with 99m-Tc and 18F-FDG
- Cell culture study
 - Apoptosis was induced on cells with camptothecin dissolved in DMSO and affinity of radio peptides was evaluated.
- Animal study
- Balb/C adult mice were used and Liver apoptosis was induced by intraperitoneal injection (IP) of lipopolysaccharid. Each radiolabeled peptide was injected via the tail vein mice.
- Imaging
 - PET/CT and SPECT imaging was performed and accumulation of peptides in liver was evaluated.

2005-2008

School of Sciences, Azad University, Tehran, Iran.

MS. Degree in Organic Chemistry

Research Advisors: Dr. Ali Reza Bidhendi

Dissertation: chemical separation of carbon from soil Samples for Radiocarbon Dating

Thesis was done in two separate part:

- ✓ Total synthesis of new derivatives of triazol and oxadiazol as agonist for benzodiazepine receptor. Final product was purified by column chromatography
- ✓ In this thesis I separated carbon from soil samples and used it for benzene synthesis. Benzene that contain ^{14}C was used for dating.

2001-2005

School of Sciences, Azad University, Karaj, Iran.

BS. Degree in Chemistry

WORK EXPERIENCES

2015-present

Assistant professor of Radio Pharmacy, ShohadayeTajrish/Taleghani Hospital, Faculty of Medicine, Shahid Beheshti university of Medical Science Tehran, Iran.

Teaching Courses:

Radiopharmaceutical in medicine (preparation, labeling, quality control) for resident of clinical nuclear medicine

2008-2011

- Instructor of College of Environment, Karaj, Iran (part-time)
Chemistry and organic Chemistry

- Chemist, Pars Isotope company, Tehran, Iran
Duties included:
 - Synthesis of chemical compound for radiopharmaceuticals
 - Quality Control (TLC, melting point, FT-IR)

SPECIAL COURSES

Faculty of Pharmacy, University of Medical Science, Tehran, Iran

- Advanced peptide synthesis (manually and automatically)
- Radiation safety
- Advanced statistic in medical Science

LAB SKILLS

- Total Synthesis of different chemical compounds include:
 - ✓ 2-Methoxy-2- isobutyl isonitrile (MIBI): this compound prepares in 3 step, each step need flash chromatography to purify final product.

- ✓ 2-3-bromo-2,4,6-trimethylanilino-2-oxoethyl-amino acetic acid (mebrofenin): crystallization methods were used for separation this product
- ✓ Ethylene dicystein (EC): this compound prepares under argon gas atmosphere in -70°C in dry ice and acetone.
- ✓ Ethylene cysteine dimmer (ECD)
- Peptides Synthesis (cyclic and acyclic sequence) include:
 - ✓ Leu-Ile-Lye-Lye-Pro-Phe and 6 derivatives using solid phase method
 - In solid phase method reaction is done under nitrogen gas atmosphere and final product is obtained by preoperative HPLC
 - To confirm structures and purity I used NMR and LC-MS spectra
- Preparation and quality control of PET and SPECT Radiopharmaceuticals Radiolabeling of proteins, Peptides and small molecules
- Biodistribution studies
- In vitro cell culture study

Technical skills

- NMR (^{13}C -NMR, ^1H -NMR)
- HPLC (GC-MS, LC-MS)
- FTIR
- UV-VIS
- XRD
- SEM
- TEM
- Flash chromatography
- Flow cytometry
- Radio instruments analyzers

LECTURES/PRESENTATIONS IN PHD

- Synthesis and evaluation of bifunctionalchelators for $^{64}\text{Cu}/^{68}\text{Ga}$
- Radiolabelled anticancer drug for imaging and therapy
- Fluorine-18 radiopharmaceuticals beyond [^{18}F]FDG for use in oncology and neurosciences
- Drug delivery by Brachytherapy

LECTURES/PRESENTATIONS IN INTERNATIONAL MEETINGS

- 6th international and 18th Iranian congress of nuclear medicine. Tehran, 12-14 November 2014. One step radiolabeling of peptide LIKKPF with ¹⁸F-FDG for detecting of apoptosis
- 27th Annual Congress of the European Association of Nuclear Medicine. Gothenburg 18-22 Oct 2014. Synthesis and radiolabeling of HYNIC-conjugated LIKKPF peptide with ¹⁸F-FDG for the detection of apoptosis.
- 28th Annual Congress of the European Association of Nuclear Medicine. Hamburg 10-14 Oct 2015. Preparation and biological evaluation of Tc-99m-HYNIC for the detection of apoptosis
- 29th Annual Congress of the European Association of Nuclear Medicine. Barcelona 15-19 Oct 2016. F-18-FDG-Aoe-LIKKPF-Pyr-A: A new peptide radiotracer for apoptosis imaging
- 9th international and 21th Iranian congress of nuclear medicine. Mashhad, 22-24 November 2017. Comparison of three quality control methods for ¹⁷⁷Lu-PSMA; which one is suitable in clinical assay?

PUBLICATIONS

HYNIC a Bifunctional Prosthetic Group for the Labelling of Peptides with ^{99m}Tc and ¹⁸F-FDG

Khoshbakht, S.; Kobarfar, F.; Beiki, D.; Sabzevari, O.; Amini, M.; Mehrnejad, F.; Tabib, K.; Shahhosseini, S*

Synthesis, radiolabeling, and biological evaluation of Peptide LIKKPF functionalized with HYNIC as apoptosis imaging agent

Khoshbakht, S.; Kobarfar, F.; Beiki, D.; Sabzevari, O.; Amini, M.; Mehrnejad, F.; Tabib, K.; Shahhosseini, S*

¹⁸F-FDG-labeled LIKKPF: a PET tracer for apoptosis imaging

Khoshbakht, S.; Kobarfar, F.; Beiki, D.; Sabzevari, O.; Amini, M.; Mehrnejad, F.; Tabib, K.; Shahhosseini, S*

An Unexpected and Less Recognized Altered Distribution on Bone Scintigraphy; Possibility of ^{99m}Tc-Dextrose Complex as a Cause.

Qutbi M, Shafiei B, **Khoshbakht S**, Asadi A, Neshandar Asli I.

Design, Synthesis, Radiolabeling and Biologic Evaluation of Three 18F-FDG-Radiolabeled Targeting Peptides for the Imaging of Apoptosis

Khoshbakht S, Beiki D, Geramifar P, Kobarfard F, Sabzevari O, Amini M, Bolourchian N, Shamshirian D, Shahhosseini S*

Effect of proton pump inhibitors and H2 antagonists on gastric wall uptake in myocardial perfusion scan with 99mTc-sestamibi

Ghazal Norouzi, Azin AsadZade, Yazdan Salimi, Sepide Khoshbakht, Elahe Pirayesh*

Assessing the Prevalence and Predicting Factors of an Abnormal Gated Myocardial Perfusion SPECT in Asymptomatic Patients with Type 2 Diabetes

Elinaz Hosseinzadeh, Mohammad ALi Ghodsirad, Toktam Alirezaei, MAryam Arefnia, Mahasti Amoui, Elaheh Pirayesh, Ghazal Norouzi, Sepideh Khoshbakht