Dear Prof. Beiki,

Thank you very much for submitting your work for the
EANM'16 - Annual Congress of the European Association of Nuclear Medicine
(October 15 - 19, 2016 in Barcelona/Spain).
To acknowledge the high scientific value the Scientific Programme Committee has decided to initiate for following tracks/topics: M2M/Do.MoRe/Clinical Oncology a new feature – the so called e-posters. All accepted papers of these 3 topics/tracks will be presented as electronic posters (instead of paper posters) in the "e-Poster Area". In this area participants will find numerous computers to view the e-poster sessions alone or in small groups throughout the entire duration of the congress.

I am pleased to inform you that your abstract:

18F-FDG-Aoe-LIKKP-Pyr-A: A new peptide radiotracer for apoptosis imaging

was accepted as e-Poster presentation within the Scientific Programme of EANM'16.

Please find below your presentation details:

Presentation Number: **EP529**
Session Number: **EP-25**
Session Title: **M2M: Antibodies & Peptides**

Your e-poster has to be uploaded no later than **September 30, 2016,** 17:00 CET. The link for upload will be announced in a separate mailing and online (http://eanm16.eanm.org) in due course. e-posters that have not been uploaded by this deadline will be considered as withdrawn.

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We would also like to draw your attention to the deadline for reduced registration fees: June 20, 2016.

Please visit our website http://eanm16.eanm.org/ and register for the congress at your earliest convenience.

I look forward to seeing you this October in Barcelona.

With best regards

Wim Oyen, MD, PhD

EANM Congress Chair 2014-2016

^{18}F-FDG-Aoe-LIKKP-Pyr-A: A new peptide radiotracer for apoptosis imaging

D. Beiki[1], S. Khoshbakht[2], S. Shahhosseini[3], F. Kobarfard[3], O. Sabzevari[2], M. Amini[4];

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Aim: Specific biochemical changes occur in cells undergoing apoptosis that provide potential targets for molecular imaging agents and imaging of apoptosis can provide a good way to predict effectiveness of cancer chemotherapy. Clinical information obtained from targeting of phosphatidyl serine (PS) would help to diagnosis and therapy of apoptosis related pathologies. A few LIKKPF peptides with acceptable affinity for PS have been already introduced for apoptosis imaging. We herein report the synthesis of a new LIKKPF peptide radiotracer with more affinity for PS for detecting apoptosis.

Materials and Methods: The peptides were synthesized on solid phase using standard Fmoc strategy, conjugated with aminooxy (Aoe), and then was considered for the radiolabeling procedure with ^{18}F-FDG. Biological properties were determined in vitro using camptothecin treated Jurkat cells and in vivo using liver apoptosis mouse model induced via intraperitoneal (IP) injection of lipopolysaccharide (LPS). Also, Log P values determination, biodistribution studies and PET/CT imaging were performed.

Results: The radiochemical purity was >95% (100°C, 30 min, pH 5-5.5). Log P value for ^{18}FDG-Aoe-LIKKP-Pyr-A prepared by Fmoc-(4-pyridyl)-D-Ala-OH was -0.92. K_d of peptide was determined with value 0.52 μM. Biodistribution results showed 3 times liver uptake for apoptotic mice compared to normal mice. PET/CT images were in a good agreement with biodistribution results. The activity ratio of liver to kidney was 0.17 and 0.61 in normal and apoptosis mouse model, respectively.

Conclusion: ^{18}FDG-Aoe-LIKKP-Pyr-A showed good affinity to PS and might be a potential radiotracer for the detection of apoptosis.

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I am pleased to inform you that your abstract:

Preparation and biological evaluation of 99mTc-HYNIC-LIKKPF for the detection of apoptosis

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Preparation and biological evaluation of ^{99m}Tc-HYNIC-LIKKPF for the detection of apoptosis

D. Beiki[1], S. Khoshbakht[2], S. Shahhosseini[3], F. Kobarfard[3], O. Sabzevari[2], M. Amini[4];

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ISLAMIC REPUBLIC OF, [4]Dpartment of Medicinal Chemistry, School of Pharmacy,
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Aim: Radioligands that have affinity and bind to phosphatidyl serine (PS) are good candidates for noninvasive imaging of apoptosis. Because of limitations of Annexin V (as a most studied imaging agent for apoptosis), there is a need to develop radioligands with better biodistribution profile for this purpose.
Materials and Methods: HYNIC-LIKKPF was successfully synthesized via Fmoc strategy and the compound was considered for the radiolabeling procedure with Tc-99m. Then, stability and Log P values of radiopeptide were determined. Finally, binding studies, biodistribution studies and SPECT/CT imaging were performed.
Results: The radiochemical purity and Log P value were >95% and -0.92, respecteviely. ^{99m}Tc-HYNIC-LIKKPF was stable in human serum for at least 2 hr at 37ºC. Although the affinity of radiolabeled LIKKPF was less than original phage peptide, the level of binding to apoptotic cells was 2.5 times higher than control cells. Biodistribution studies showed higher liver uptake of radiopeptide in apoptotic non-treated mouse model compare to normal and pre-treated mouse. The in vivo imaging results were consistent with biodistribution studies.
Conclusion: ^{99m}Tc-HYNIC-LIKKPF has less affinity to PS compare to original phage peptide, but high enough for specific binding to apoptotic cells in vitro and in vivo. Less affinity of radiolabeled LIKKPF might be attributed to hydrophobicity of peptide. The future peptides should be more hydrophobic compare to LIKKPF.