

## CURRICULIUM VITAE

### *Personal details*

Name: Farhad Karimi  
E-mail address: [fkarimi@partners.com](mailto:fkarimi@partners.com)  
Nationality: Swedish  
Ethnic Origin: Persian  
Languages: English, Swedish, Persian

### *Education*

Sep 1998 – Nov 2002      Doctoral studies within radiochemistry at the Department of Organic Chemistry, Uppsala University PET-Centre, Uppsala, Sweden, under supervision of Prof. Bengt Långström. The thesis was entitled “[<sup>11</sup>C]Carbon Monoxide in Palladium- / Selenium-Promoted Carbonylation Reactions”.  
The thesis work deal with the scope and limitation of carbonylation reactions, using short-lived radionuclide [<sup>11</sup>C]carbon. The synthesis of <sup>11</sup>C-imides, hydrazides, amides, carboxylic acids, esters, carbothioates, ketones and carbamoyl compounds were presented.

Jan 1998 – June 1998      Undergraduate thesis, under supervision of prof. Bengt Långström and Dr. Tor Kihlberg.  
The thesis work consisted of synthesis of precursors and references for <sup>11</sup>C-labelling of *N*-{2-[(4-hydroxyphenyl)thio]ethyl}acetamide, *N*-9*H*-β-carbolin-3-ylacetamide and various alkyl 9*H*-β-carboline-3-carboxylates.

Jan 1994 – Dec 1997      Master’s degree studies in Organic Chemistry at Uppsala University, Uppsala, Sweden.

### *Experience*

June 1998 – Sep 1998      Full time work as chemist at Uppsala Imanet AB (formerly Uppsala University PET- Centre). Work task included synthesis MDL 100907.

Nov 2002 – Nov 2006      Full time work as scientist Sr at Uppsala Imanet GE Healthcare.  
Work task include;  
- Using molecular modeling (CACHe and Hyperchem software) to design radiotracer candidates.  
- Synthesis of reference and precursor of radiotracer candidates.  
- Development of synthetic routes for <sup>11</sup>C-labelling of radiotracers candidates using [<sup>11</sup>C]carbon monoxide.  
- Development / improvement of rapid and efficient synthetic methods for incorporation of <sup>11</sup>C-carbonylative cross coupling of halides and triflates.  
- Development / improvement of [<sup>11</sup>C]carbon C-C cross coupling using [<sup>11</sup>C]iodomethane.  
- Development of synthetic routes for <sup>18</sup>F-labelled radiotracers.  
The appointment allows own research projects, and I am currently designing and synthesizing new tracers as follows;  
- Synthesis and evaluation of <sup>18</sup>F / <sup>11</sup>C-labelled benzamide derivatives as a potential radio-tracer for the 5-HT1A Receptor.  
- <sup>18</sup>F / <sup>11</sup>C-labelled thalidomide analogues as a potential radiotracer with antiproliferative activity.

Nov 2006 – Dec 2007      Full time work as Scientist Sr. at Siemens.

Jan 2008 – Present

Staff Scientist at Brigham and Women's Hospital, Department of Radiology and Assistant Professor at Harvard Medical School.

#### Research of interest

- Designing and synthesizing new tracers.
- Development of new synthetic routes for incorporation of F-18, C-11 into biological active compounds.
- Making PET-tracer cheap and available for everybody.

#### Teaching merits

Sep 2003 – Mars 2004

Supervision of Kristina Bjerke on her examination project in order to get her MS in organic chemistry, at the Department of Organic Chemistry, Uppsala University, Uppsala / Sweden.

Jan 2004 – April 2006

Official assistant supervisor of Julien Barletta on his Ph.D. work.

Dec 2004 – Nov 2006

Official assistant supervisor of Elisabeth Blom on her Ph.D. work.

Dec 2004 - Nov 2005

Official assistant supervisor of Mahabuba Jahan on her project.

Mars 2004 – Present

Official assistant supervisor of Maria Erlandsson on her Ph.D. work.

#### Peer review

Several assignment as reviewer of manuscripts intended for *Journal of Labeled Compounds and Radiopharmaceuticals* and *Journal of Organic Chemistry*.

#### List of scientific works

1. [ $^{11}\text{C}$ ] / ( $^{13}\text{C}$ )Carbon monoxide in palladium-mediated synthesis of imides. Karimi F., Kihlberg T., Långström B., *J. Chem. Soc. Perkin Trans. 1*, 2001, 1528-1531.
2. Palladium-mediated synthesis of [carbonyl- $^{11}\text{C}$ ]amides and hydrazides using [ $^{11}\text{C}$ ]carbon monoxide. Karimi F., Långström B., *J. Chem. Soc. Perkin Trans. 1*, 2002, 2111-2116.
3. Synthesis of  $^{11}\text{C}$ -amides using [ $^{11}\text{C}$ ]carbon monoxide and *in situ* activated amines by palladium-mediated carboxaminations. Karimi F., Långström B., *Org. Biomol. Chem.*, 2003, 541-546.
4. Synthesis of  $^{11}\text{C}$ -amides using [ $^{11}\text{C}$ ]carbon monoxide and *in situ* activated amines with 1,2,2,6,6-pentamethylpiperidine in palladium-mediated carboxamination. Karimi F., Långström B., *Eur. J. Org. Chem.*, 2003, 2132-2137.
5. Palladium-mediated carboxylation of aryl halides (triflates) or benzyl halides using ( $^{13}\text{C}$ ) / [ $^{11}\text{C}$ ]carbon monoxide with tetrabutylammonium hydroxide or trimethylphenylammonium hydroxide. Karimi F., Långström B., *J. Chem. Soc. Perkin Trans. 1*, 2002, 2256-2259.
6. Synthesis of 3-[(2*S*)-azetidin-2-ylmethoxy]-5-[ $^{11}\text{C}$ ]-methylpyridine, an analogue of A-85380, via a Stille coupling. Karimi F., Långström B., *J. Label. Compd. Radiopharm.* 2002, 45, 1-12.
7. [ $^{11}\text{C}$ ]Carbon monoxide in selenium-mediated synthesis of  $^{11}\text{C}$ -carbonyl compounds. Kihlberg T., Karimi F., Långström B., *J. Org. Chem.*, 2002, 67, 3687-3692.
8. Palladium-mediated  $^{11}\text{C}$ -carbonylative cross coupling of aryl halides with organostannanes. An efficient synthesis of alkyl / aryl [carbonyl- $^{11}\text{C}$ ]ketones. Karimi F., Barletta J., Långström B., *European Journal of Organic Chemistry*, 2005, (11), 2374-2378
9. Synthesis of  $^{11}\text{C}$ -carbothioates. Karimi F., Långström B., manuscript.
10. The synthesis of [carbonyl- $^{11}\text{C}$ ]esters using [ $^{11}\text{C}$ ]carbon monoxide in palladium-mediated reactions. Karimi F., Långström B., *manuscript*.
11. Methods for carbon-isotope-labeling synthesis by rhodium-promoted carbonylation via isocyanate using azides and carbon-isotope monoxide. *PCT Int. Appl.* (2005), 42 pp. Langstrom B., Barletta J., Doi H., Suzuki M., Noyori R., Watanabe Y., Karimi F.
12. Methods for Carbon Isotope Labeling Synthesis by Transition Metal-Promoted Carbonylation via Ketene Using Diazo Compounds and Carbon-Isotope Monoxide. PH0511. Langstrom B., Barletta J., Doi H., Karimi F.

13. Synthesis of [<sup>11</sup>C-carbonyl]hydroxyureas by a rhodium-mediated carbonylation reaction using [<sup>11</sup>C]carbon monoxide. Baretta J., Karimi F., Långström B., *J. Label. Compd. Radiopharm.* 2006.
14. Synthesis of diethyl synthesis of [<sup>11</sup>C]malonate from [<sup>11</sup>C]carbon monoxide by rhodium-promoted carbonylation and its application as a reaction intermediate. Baretta J., Karimi F., Långström B., *J. Label. Compd. Radiopharm.* 2006.
15. <sup>18</sup>F-labeled DAA analogues and methods of labeling these analogues as Positron Emission Tomography (PET) tracers for imaging peripheral benzodiazepine receptors. WO2007060517. Karimi F., Rahman o., Estrada S., Langstrom B.
16. <sup>18</sup>F-labeled phenoxyphenyl *N*-benzyl alkanamid derivatives for Positron Emission Tomography (PET) Imaging of Peripheral Benzodiazepine Receptor. WO 2007074383. Karimi F., Langstrom B.
17. Preparation of <sup>18</sup>F-labeled alkyl-1-[(R)-1-phenylethyl]-1H-imidazole-5-carboxylates as PET (positron-emission tomography) tracers for the quantification of  $\beta$ -11-hydroxylase enzyme in the adrenal glands. WO2007144725. Langstrom, Bengt; Karimi, Farhad; Blom, Elisabeth; Erlandsson, Maria.
18. [<sup>18</sup>F]-Labelling of Metomidate Analogues as Adrenocortical Imaging Agents. Erlandsson M., Karimi F., Lindhe Ö. and Långström B., *Submitted*.
19. [<sup>18</sup>F] / <sup>19</sup>F Exchange of fluorine containing compounds, Blom E., Karimi F. and Långström B., *Submitted*.
20. Synthesis of [<sup>11</sup>C]-labeled metomidate analogues as adrenocortical imaging agents, Karimi F., Eriksson J., Lindhe Ö., Erlandsson M. and Långström B., *Accepted J. Label. Compd. Radiopharm, 2008*.
21. Synthesis and preclinical evaluation of <sup>18</sup>F-labelled analogues of  $\beta$ -carboline alkaloids as potential PET ligands for MAO-A., Blom E., Karimi F., Eriksson O., Erlandsson M. and Långström B., *Submitted*.
22. <sup>18</sup>F-Labelled Vorozole Analogues as a PET Tracer for Aromatase. Erlandsson M., Karimi F., Takahashi K. and Långström B., *Accepted J. Label. Compd. Radiopharm, 2008*.
23. <sup>11</sup>C/<sup>18</sup>F-Labeled Inhibitors of Glycogen Synthase Kinase-3. WO 2007138408, Karimi F., Langstrom B.
24. Preparation of <sup>18</sup>F-labeled alkyl-1-[(R)-1-phenylethyl]-1H-imidazole-5-carboxylates as PET (positron-emission tomography) tracers for the quantification of  $\beta$ -11-hydroxylase enzyme in the adrenal glands. WO 2007144725 Langstrom B., Karimi F., Blom E. Erlandsson M.
25. Tetracyclic indole derivatives having peripheral benzodiazepine receptor (PBR) affinity, processes for preparing them, pharmaceutical compositions containing them, and their use as in vivo imaging agents. WO 2007057705, Arstad E., Wilson I., Luthra S. K., Brady F., Langstrom B., Karimi F., Robins E. G., Shan B.
26. Preparation of [<sup>11</sup>C]-labeled benzophenones and benzoylbenzoxazoles as inflammation imaging agents. WO 2007135541, Karimi F., Langstrom B.
27. Process for fluorination of anilides. WO 2007020400, Storey A. E., Jones C. L., Bouvet D. R. C., Lasbistes N., Fairway S. M., Williams L., Gibson A. M., Nairne R. J., Karimi F., Langstrom B.
28. Click Chemistry-Derived Cyclic Peptidomimetics as Integrin Markers, 2006P19839US01, Kolb H. C., Chen K., Walsh J. C., Gangadharmath U., Kasi D., Wang B., Duclos B., Liang Q., Padgett H. C., Karimi F.
29. Click Chemistry-Derived Cyclopeptide Derivatives as Imaging Agents for Integrins, 2006P19827US01. Kolb H. C., Chen K., Walsh J. C., Liang Q., Padgett H. C., Karimi F.

- Kihlberg T., Antoni G., Björkman M., Karimi F., Rahman O., Ögren M. And Långström B. (2000) [<sup>11</sup>C]carbon monoxide has become a versatile precursor. *Seventh International Symposium on The Synthesis and Application of Isotopes and Isotopically Labelled Compounds*, Dresden, Germany.
- Karimi F., Itsenko O. and Långström B. (2001) Synthesis of different analogues of A-85380 for *in vivo* studies of nicotinic receptor. *Fourteen International Symposium on Radiopharmaceutical Chemistry*, Interlaken, Switzerland.
- Karimi F. and Långström B. (2001) Some biological active <sup>11</sup>C-labelled amides using [<sup>11</sup>C]carbon monoxide. *Fourteen International Symposium on Radiopharmaceutical Chemistry*, Interlaken, Switzerland.
- Karimi F., Björkman M. and Långström B. (2001) Synthesis of 3-[(2*S*)-azetidin-2-ylmethoxy]-5-[<sup>11</sup>C]-methylpyridine, an analogue of A-85380 for *in vivo* studies of nicotinic receptor. *Fourteen International Symposium on Radiopharmaceutical Chemistry*, Interlaken, Switzerland.
- Lindhe Ö., Karimi F., Hennings J., Bergström M., Sundin A., Hellman P., Långström B., (2006), Positron Emission Tomography Using <sup>11</sup>C-Metomidate In Adrenocortical Tumours, And Investigation Of Future <sup>18</sup>F-Analogues. *Oral Presentation at the Academy of Molecular Imaging meeting in March, in Orlando, FL.*