Contribution ID: **217** Type: **Poster**

Radiosynthesis of 18F-Labeled Diclofenac Hydroxy-Derivative as potential micro-PET imaging tracer

Monday 17 September 2012 17:30 (1h 30m)

Methods and Materials:
The diclofenac hydroxy-derivative precursor was prepared via five steps synthesis from 2,6-dichloroaniline. The radio-synthesis was carried out according to the method described by Wang MW et al with some modifications. It started from the displacement of tosyl group from 1,2-bistosyoloxyethane with 18F-fluoride to afford 18F-fluoroethyltosylate followed by fluoroethylation of diclofenac hydroxy-derivative precursor. Both one-pot and two pot methods were studied. Purification of intermediate and final product was carried out with Sep-pak silica cartridge eluting with diethyl ether and dichloromethane respectively.
The analyses of the labeled intermediate 18F-fluoroethyl tosylate and the final product 10-18F-fluorethyloxy diclofenac and its reference compounds were carried out with TLC. The plates were developed with Dichloromethane/methanol (V:V 95/5) solution. The radioactivity on the plates was detected by Radio-TLC Scanner. No HPLC system was needed for the purification of the product.

Results: 18F- Fluorethyloxy diclofenac was prepared via indirect labeling consisting of fluorination of 1,2-bis(tosyloxy)ethane and fluoroethylation of diclofenac hydroxy-derivative. The radiochemical yield at the end of two steps was about 87%.

Conclusion: In conclusion, an efficient and convenient chemical and radiochemical synthesis of the reference standards and target tracer, 18F labeled small molecule 18F- Fluorethyloxy diclofenac as a new PET imaging tracer, have been well developed. The overall radiosynthesis yield of the tracer was 87%.

Primary author: LIN, Manjing (Singapore Health Services Pte Ltd, China)

Co-author: Dr YU, Sidney (Department of Nuclear Medicine and PET, Singapore General Hospital)

Presenter: LIN, Manjing (Singapore Health Services Pte Ltd, China)

Session Classification: Poster Session

Track Classification: Radiopharmaceutical chemistry, radiodiagnostics, radiotherapy, theragnostics