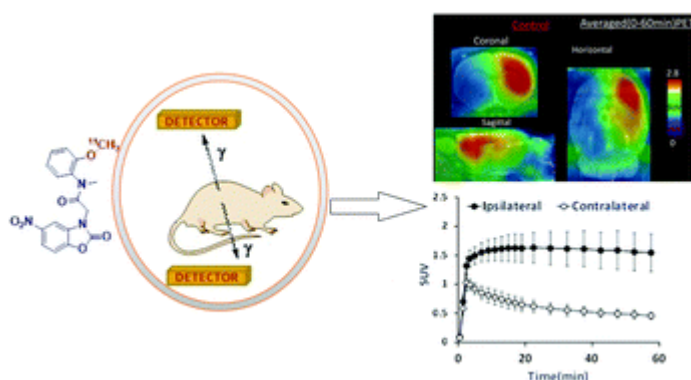


Synthesis & evaluation of radio-ligand for visualization of TSPO protein in Brain

New Delhi, Aug 26: Development of Imaging techniques for inflammation in the brain is an emerging field in current biomedical research. Scientists from around the globe are in search of newer methods and targets for brain inflammation imaging for clinical management of the brain related diseases and disorders.

A team of researchers at Babasaheb Bhimrao Ambedkar University (BBAU), Lucknow, have, in a project supported under Nanobiotechnology Program by Department of Biotechnology, evaluated a new radio-ligand for visualization of TSPO protein, namely [11C]N-(2-methoxyoxyphenyl)-N-methyl-2-(5-nitro-2-oxobenzo[d]oxazol-3(2H)-yl) acetamide ([11C]N'-MPB).

This PET ligand exhibited high binding affinity towards TSPO ($K_i = 4.9$ nM) and a suitable lipophilicity ($\log D$) of 2.08 for brain imaging. A study on mice with respect to biodistribution showed significant accumulation of radioactivity in TSPO-rich organs such as heart, lungs, kidneys, and adrenal glands which is further supported by the contrast of radioactivity in PET images.



The findings have been published in the New Journal of Chemistry of Royal Society of Chemistry.

Ref. Publication:- Tiwari,AK, Zhang,Y, Yamasaki, T,Kumari N, Fujinaga M. Wakana Mori, Mishra, AK Radiosynthesis and evaluation of acetamidobenzoxazolone based radioligand [11C]N'-MPB for visualization of 18 kDa TSPO in brain; New Journal of Chemistry, 19, 2020

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