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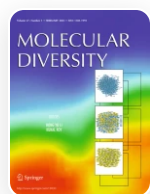
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Benzoxazolone-based FITC-conjugated fluorescent probe for locating in-vivo expression level of translocator protein (TSPO) during lung inflammation

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**Molecular Diversity**[Aims and scope](#)[Submit manuscript](#)Neelam Kumari, Anupriya Adhikari, Sunita Bhagat, Anil K. Mishra & Anjani K. Tiwari 248 Accesses [Explore all metrics](#) →

Abstract

Translocator protein 18 kDa (TSPO) has been a salient target for probing and monitoring inflammation in the central nervous system (CNS) and peripheral systems. Leveraging our previously developed, TSPO specific, modified acetamidobenzoxazolone derivative, the present work describes the synthesis and development of an optical probe for lung inflammation imaging: 2-(3,6-dihydroxy-9H-xanthen-9-yl)-5-(3-(3-(2-(methyl(phenyl)amino)-2-oxoethyl)-2-oxo-2,3-dihydrobenzo[d]oxazol-5-

yl)thioureido)benzoic acid (FITC-MBP). The FITC-MBP is prepared through facile methodology by conjugating MBP to fluorophore dye FITC. Spectral properties remained equivalent to FITC dye with absorption and emission wavelength at 486 and 520 nm, respectively. Cellular uptake studies established overexpression of TSPO in lipopolysaccharide (LPS)-induced inflammation in H1299 lung cells. Reduced mean fluorescence intensity (MFI) during blocking experiments with PK11195 in flow cytometry suggests the specificity of the fluorescent probe towards TSPO. *In-vivo* optical imaging analysis on LPS-induced lung-inflamed balb/c mice revealed major sequestration of FITC-MBP in the lungs compared to control at 25 min post-injection that significantly decreased on pretreatment with PK11195 due to competitive binding to TSPO. On ground of these findings, we believe the novel fluorescent probe (FITC-MBP) might be utilized to visualize the overexpressed TSPO.

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