ISOTOPIC LABELLING FOR BIOLOGICAL TARGETS IDENTIFICATION BY AUTORADIOGRAPHY

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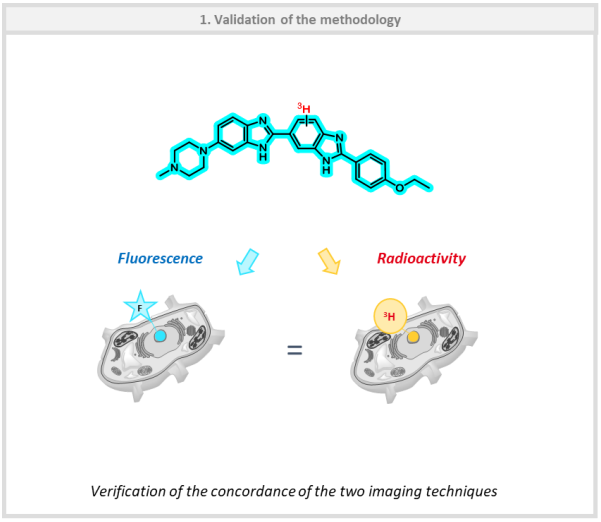
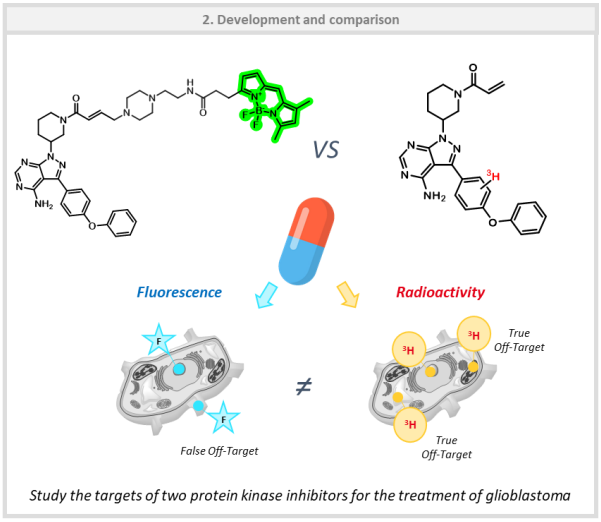
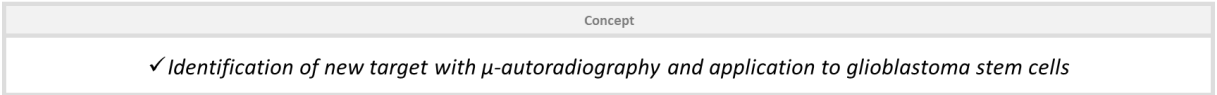
The study of drug distribution is an important step in drug development and is mandatory for preclinical ADME (Absorption, Distribution, Metabolism and Excretion) studies. Understanding and localizing drug at the cellular and sub-cellular level is key to optimize its specificity, enhance efficacy, minimize off-target effects and understand its mechanism.[1] Of all the existing imaging methods, our work focuses on µ-autoradiography, a powerful technique that uses the radioactive decay emission of labelled substances to study their distribution.[2]

The aim of this project is to develop autoradiography at the cellular and sub-cellular level to provide a complementary technique to existing imaging ones for more precise analysis and identification of biological targets. Using tritium labelling, we validated the methodology and subsequently investigated a drug with potential for glioblastoma treatment to demonstrate the interest of such technique in Drug Development.







References:

1 Leucuta, S. E. Subcellular Drug Targeting, Pharmacokinetics and Bioavailability. *Journal of Drug Targeting* **2014**.

2 Solon, E. G. Autoradiography Techniques and Quantification of Drug Distribution. *Cell Tissue Res* **2015**, *360* (1), 87–107.