Title: **Sphingolipid Analogues Labelled with Near-Infrared Fluorophores: Synthesis of an Advanced Precursor and Prospective Studies.**

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Sphingolipids are an important group of biomolecules which play essential roles as structural building blocks and signalling molecules in a wide range of cellular processes. To better understand their physiological importance, the synthesis of analogues is a useful chemical tool to analyse sphingolipids metabolic biosynthesis, whose alteration is involved in several illnesses.

In recent years, near-infrared (NIR) fluorophores as live cell fluorescent dyes are being investigated since they show a deep penetration of the NIR light and minimize the damage caused to cells compared to ultraviolet (UV) and blue light.

In this project, the sphingolipid analogue **RBM2-37** has been synthesized by previously reported synthetic methods with the aim to be attached to a NIR fluorophore to form a new hybrid probe. For this reason, an exhaustive bibliographic research has been undertaken to find possible NIR fluorophores (with special interest in small size molecules). The search has been performed in Scifinder and Reaxys during the period 2010-2020 being cyanines and coumarins the most common structure scaffolds. The resulting probe is expected to be useful as an imaging method to facilitate the cellular detection of sphingolipids by the presence or absence of NIR emission light.

Keywords: Sphingolipids, fluorophore, near-infrared, probe.