

Probes for intracellular labelling

For the lab course MOL163 – Synthesis Lab 2, we would like to develop the synthesis of some substances such as 3-azido-7-methoxycoumarin [1] and 9-(2-carboxy-2-cyanovinyl)julolidine [2] (figure 1) that can subsequently be used for intracellular labelling experiments in the lab course MOL173 – Chemical Biology.

During your internship you would attempt the synthesis of one or more potential probes and subsequently apply these in cells to inspect their binding to particular cell components with fluorescence microscopy.

The aim is to provide two coupled experiments: a synthetic experiment for MOL163 – Synthesis Lab 2 and a labelling experiment for MOL173 – Chemical Biology.

1. Simmons, J.T. *et al.*, Integrated and Passive 1,2,3-Triazolyl Groups in Fluorescent Indicators for Zinc(II) Ions: Thermodynamic and Kinetic Evaluations, *Inorg. Chem.*, **2013**, 52(10), 5838-5850.
2. Rumble, C., Rich, K., He, G. and Maroncelli, M., CCVJ Is Not a Simple Rotor Probe, *J. Phys. Chem. A*, **2012**, 116, 10786–10792.

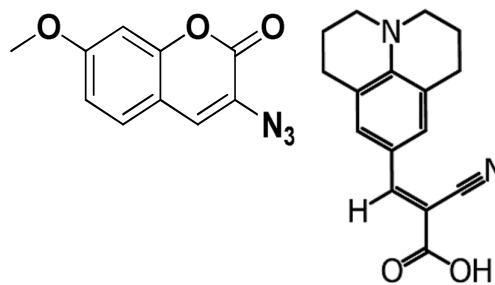


Figure 1 – The molecular structures of 3-azido-7-methoxycoumarin (left) and 9-(2-carboxy-2-cyanovinyl)julolidine (right).