Abstract

This bachelor thesis focuses on the design and synthesis of 1,2,4,5-tetrazine and *trans*-cyclooctene derivatives containing functional moieties which are able to target cellular nucleus and participate in bioorthogonal reactions. Based on literature research, the targeting moieties and the structure of the tetrazine and *trans*-cyclooctene derivatives were designed with the aim to achieve selective nuclear targeting and to ensure sufficient reactivity of the resulting conjugates under biological conditions. Selected candidates were then synthesized and their properties together with cellular reactivity were investigated in model experiments.