

Short Note

Luminescent Lariat Aza-Crown Ether Carboxylic Acid

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Received: 24 February 2009 / Accepted: 11 March 2010 / Published: 12 March 2010

Abstract: Lariat ethers are interesting recognition motifs in supramolecular chemistry. The synthesis of a luminescent lariat aza-crown ether with a carboxyl group appended by azide-alkyne (Huisgen) cycloaddition is presented.

Keywords: crown ether; cycloaddition; triazole; ammonium receptor; lariat ether; podand

1. Introduction

Luminescent crown ether amino acids which bind ammonium ions and signal the binding event by changes of their specific emission properties were published recently [1]. These are versatile building blocks for amino acid and peptide receptors [2–4]. Introduction of charged groups [5–8] may enhance the cation binding affinity of crown ethers [9]. The copper(I) catalyzed dipolar cycloaddition (Huisgen cycloaddition) is known to be a robust ligation method for a variety of differently substituted azides and alkynes [10–12]. We present the functionalisation of luminescent aza-crown ethers with anionic podand arm by this method. Such a compound is expected to have enhanced ammonium ion binding properties.

2. Synthesis

The lariat ether was prepared by dipolar azide-alkyne (Huisgen) cycloaddition at the side chain of the propargyl-substituted crown ether (**1**) with 4-azidobutyric acid (**2**).

69.1 (-, 2 C), 69.4 (-, 2 C), 70.3 (-, 2 C), 70.6 (-, 2 C), 114.0 (+, 2 C), 124.1 (+, 1 C), 125.6 (C_{quat}, 2 C), 143.3 (C_{quat}, 1 C), 150.5 (C_{quat}, 2 C), 167.7 (C_{quat}, 2 C), further signals were not detectable.

Acknowledgements

We thank the Deutsche Forschungsgemeinschaft (GRK 760) and the University of Regensburg for support of this work.

References and Notes

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