

# Accepted Manuscript

Functional glycolipid-crown-ethers by click chemistry

Abbas Abdulameer Salman, Mojtaba Tabandeh, Thorsten Heidelberg, Rusnah Syahila Duali Hussien



PII: S0008-6215(15)00015-4

DOI: [10.1016/j.carres.2014.12.015](https://doi.org/10.1016/j.carres.2014.12.015)

Reference: CAR 6919

To appear in: *Carbohydrate Research*

Received Date: 7 November 2014

Revised Date: 29 December 2014

Accepted Date: 30 December 2014

Please cite this article as: Salman AA, Tabandeh M, Heidelberg T, Duali Hussien RS, Functional glycolipid-crown-ethers by click chemistry, *Carbohydrate Research* (2015), doi: 10.1016/j.carres.2014.12.015.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# Functional glycolipid-crown-ethers by click chemistry

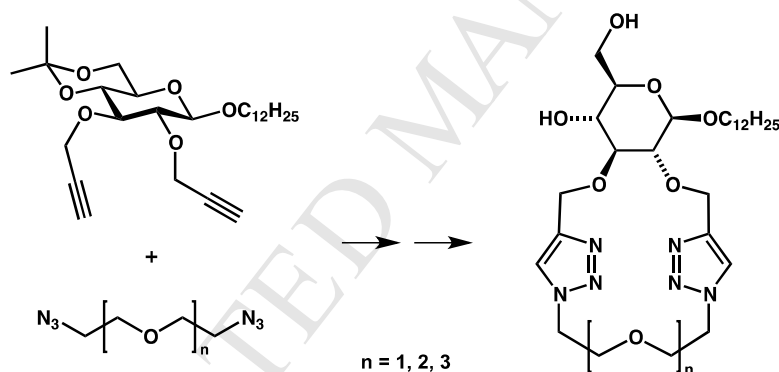
Abbas Abdulameer Salman, Mojtaba Tabandeh, Thorsten Heidelberg\*, Rusnah Syahila Duali  
Hussen

Chemistry Department, Faculty of Science, University of Malaya, Lembah Pantai, 50603 Kuala Lumpur, Malaysia

[heidelberg@um.edu.my](mailto:heidelberg@um.edu.my), phone: +60-3-7967 7170, fax: +60-3-7967 4193

## Abstract

A series of glycolipid crown ether analogs was prepared by bis-propargylation of lauryl glycoside followed by subsequent click-coupling with ethylene glycol-based diazides. The triazole-linked macrocycles were obtained in remarkable high yields. While the surfactant assembly was affected by presence of sodium ions, suggesting the formation of complexes, no ion-selectivity was observed for the macrocyclic ligands. Computational studies suggest a low but significant cation-binding activity of the macrocycle, involving coordination at both oxygen and nitrogen atoms.



**Keywords:** triazole-linked macrocyclic ligand, copper-catalyzed azide-alkyne cycloaddition (CuAAC), surfactant assembly, alkali complexation

Recently we proposed the incorporation of macrocyclic ligands into glycolipids to create surfactants that could enable the development of a drug-delivery system with an electrolyte-induced release mechanism.<sup>1</sup> However, despite decent yields in the cation-aided macrocyclization the conventional preparation of crown ethers on glycolipids is uneconomic owing to the number of required reaction steps. In order to reduce the latter, we aimed for a lately reported approach that utilizes click chemistry for an efficient cyclization of crown-ether related macrocycles.<sup>2,3</sup> This concept was previously already utilized for preparation of other macrocycles.<sup>4,5,6</sup> Closely following the synthetic approach of Stefaniak *et al.*<sup>3</sup> a bispropargylated

Download English Version:

<https://daneshyari.com/en/article/7794110>

Download Persian Version:

<https://daneshyari.com/article/7794110>

[Daneshyari.com](https://daneshyari.com)