

POSTER PRESENTATION

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# New vitamin B<sub>12</sub> derivatives activates sGC

Dorota Gryko<sup>1\*</sup>, Emil Martin<sup>2</sup>

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## Background

Protoporphyrin IX (PPIX) was shown to strongly activate *in vitro* the soluble guanylate cyclase enzyme (sGC), which makes it an interesting drug candidate for treatment of hypertension [1,2]. In order to overcome the problem of PPIX poor bioavailability (especially in the case of oral administration), we decided to exploit the specific uptake pathway of vitamin B<sub>12</sub>, which was frequently used for delivering biologically active substances from the digestive system into the body cells. To this end, we embarked on the synthesis of a series of hybrid molecules, containing PPIX and vitamin B<sub>12</sub> moieties, linked *via* chains of different length and chemical character [3].

## Methods and results

Our synthetic approach is based on the synthesis of linking molecules containing a primary -NH<sub>2</sub> group and -N<sub>3</sub> or alkyne group at the other end. Amine functionality allows us to connect these linkers to vitamin B<sub>12</sub>, and to PPIX, finally, the union of the two parts is possible using Cu-catalyzed azide alkyne cycloaddition (the "click reaction") [4].

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## Author details

<sup>1</sup>Institute of Organic Chemistry Polish Academy of Sciences, Warsaw, Poland.

<sup>2</sup>University of Texas, Graduate School of Biomedical Science, Houston, USA.

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\* Correspondence: dorota.gryko@icho.edu.pl

<sup>1</sup>Institute of Organic Chemistry Polish Academy of Sciences, Warsaw, Poland  
Full list of author information is available at the end of the article

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