

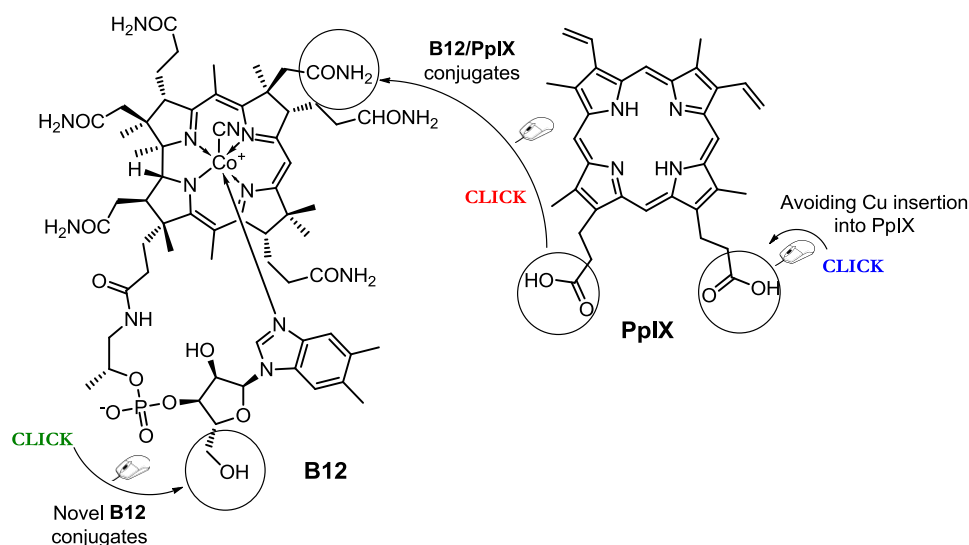
## Natural tetrapyrroles – just “click” it!

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Over the last decade copper (I) catalysed 1,3-dipolar azide – alkyne cycloaddition (CuAAC, “click reaction”) has become an important reaction in the synthesis of highly complex molecules with potential biological activity.<sup>1</sup> However its popularity has not crossed over into the construction of compounds possessing natural tetrapyrrole motifs such as vitamin B<sub>12</sub> (**B12**) or protoporphyrin IX (**PpIX**). This disinterest is owed to a lack of properly functionalised derivatives and the use of copper, which enjoys hopping into the porphyrins cavity.<sup>2</sup>

Our work therefore focuses on eradicating these disadvantages by developing a simple and convenient route for the preparation of “clickable” B12 and PpIX derivatives and their further CuAAC based functionalisation (Figure 1).<sup>3,4</sup>



*Figure 1*

This work was supported by the European Regional Found within the TEAM program, grant No. TEAM/2009-3/4 and National Science Center, Grant no. 2011/01/N/ST5/05613

1. For recent review see: G.C Tron, T. Pirali, R.A. Billington, P.L. Canonico, G. Sorba, A. A. Genazzani, *Med. Res. Rev.*, 2008, **28**, 278.
2. F. Dumoulin, V. Ahsen, *J. Porphyrins and Phthalocyanines* 2011, **15**, 481.
3. M. Chromiński, D. Gryko, *Chem. Eur. J.*, 2013, **19**, 5141.
4. M. Chromiński, K. ó Proinsias, E. Martin, D. Gryko, *Eur. J. Org. Chem.*, 2013, 1530.