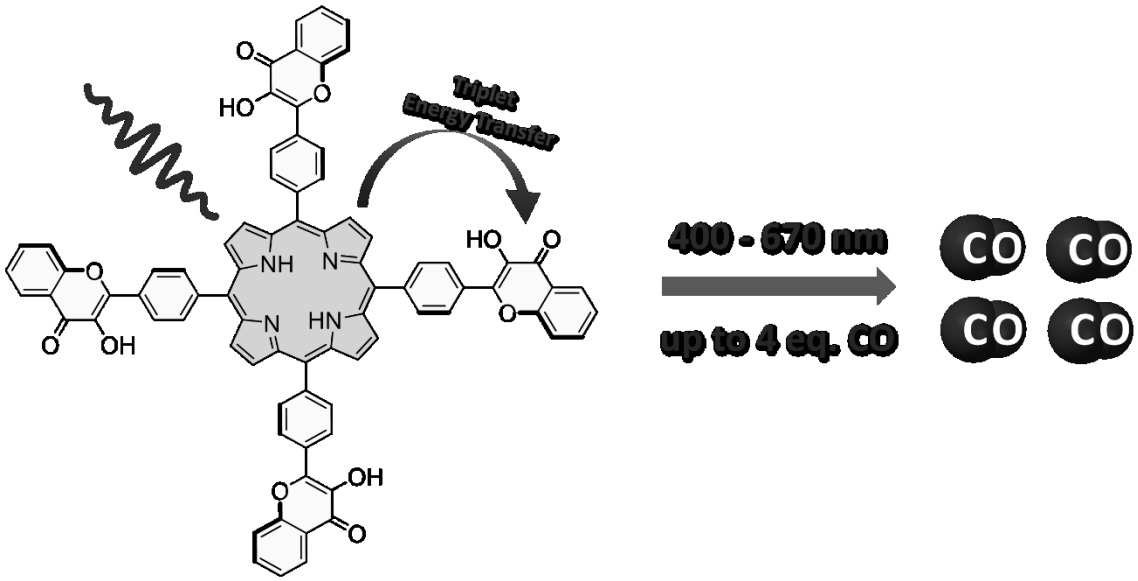
Porphyrin-Flavonol Conjugates for Efficient Delivery of Carbon Monoxide

Andrea Ramundo,[1] Petr Klán*,[1]

[1]*Department of Chemistry and RECETOX, Masaryk University, Kamenice 5, 62500, Brno, Czech Republic*
e-mail: andre.ramundo@gmail.com

Carbon monoxide (CO) is known to be a toxic gas for mammals. It has been recognized as a signaling molecule with anti-inflammatory and cell-protective properties, with possible applications in clinical treatments.[1, 2] Light-activated CO-releasing molecules (photoCORMs) can provide a high spatial and temporal control, allowing the drug to be delivered only into the targeted tissues when required. However, many of well-known photoCORMs are based on heavy metal complexes, and short irradiation wavelengths may be required for their release with evidently limited use under a clinical scenario.

Herein, we present a platform that combines the excellent photoproperties of porphyrin, which acts as an antenna and triplet sensitizer, with the CO releasing abilities of a flavonol derivative.[3]



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1 Verma, A.; Hirsch, D.; Glatt, C.; Ronnett, G. *Science* **1993,** *259*, 381-384.
2 Motterlini, R.; Otterbein, L. E. *Nat. Rev. Drug Discov*. **2010**, 9, 728-743.
3 Studer, L. S.; Brewer W. E.; Martinez, M. L.; Chou, P. *J. Am. Chem. Soc.* **1989**, 111, 7643-7644.