ENZYME-TRIGGERED CO-RELEASING MOLECULES (ET-CORMs) AS VERSATILE AND POWERFUL MEDICINAL AGENTS

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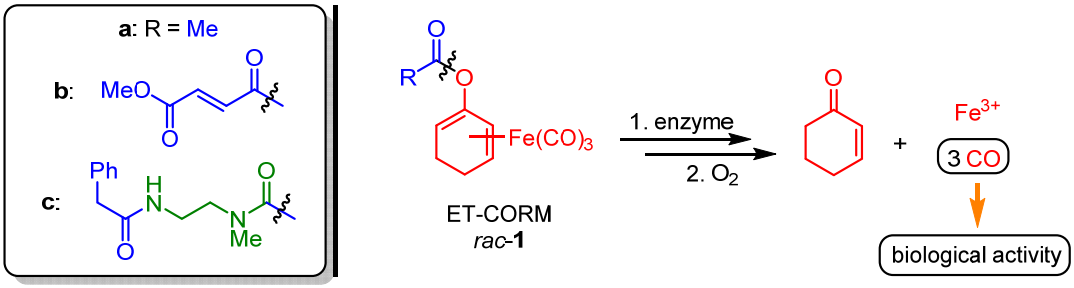
In the past decade, carbon monoxide (CO) has been demonstrated to exhibit highly beneficial cytoprotective properties when administered in low concentrations.[1-2] To avoid the risks associated with an oral administration of CO gas, the design and development of methods allowing a targeted application of therapeutic amounts of CO has become an intriguing challenge in drug research.[3-4]

Therefore, CO-releasing molecules (CORMs) have been developed and especially the use of enzyme-triggered CORMs (ET-CORMs) *rac*-**1** displays a particularly promising technique for a controlled intracellular CO-release.[3, 5]



The concept of ET-CORMs has recently been exploited in our group for the synthesis of various functionalised derivatives. For instance, fumarate-coupled ET-CORMs (FumET-CORMs) *rac*-**1b** were shown to possess exceptionally potent anti-inflammatory properties.[6]

Additionally, the feasibility of this concept could be demonstrated by the development of protease-activated CORMs (PA-CORMs) *rac*-**1c** employing a self-immolative linker (marked in green). A peptidase-triggered CO-release was unambiguously proven.[7]

Since bactericidal effects of CO in slightly higher concentrations have been reported in literature as well,[8-9] our group is currently focusing on employing the ET-CORM concept in the development of agents effective against *β*-lactam-resistant bacteria.

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