Photo-Activated Singlet Oxygen Triggered Release of CO from 17e-Rhenium(II) Dicarbonyl CORMs

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Herein we explore the singlet oxygen triggered release of CO from a series of 17e-Re\textsuperscript{II}Br\textsubscript{2}(CO):L type complexes (L = bpy, bpyR\textsubscript{2}, bpyX\textsubscript{2}, bpyBODIPY, BODIPY). The process is initiated by photo-excitation of a Ruthenium(II) sensitizer, forming singlet oxygen in-situ. Liquid state infrared spectroscopy monitors Rhenium carbonyl vibrational modes as the reaction proceeds. A decrease of signal intensity during light exposure suggests release of CO associated with singlet oxygen generation. Novel Re\textsuperscript{II} and Re\textsuperscript{I} complexes containing fluorescent BODIPY tags are also prepared and measured in this system. Myoglobin assay and Raman microscopy are attempted as secondary methods for identifying CO release.