

Molecular and Integrative Toxicology

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Niraj Kumar Jha *Editors*

# Free Radical Biology and Environmental Toxicity

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# Reactive Oxygen Species Producing Photoactivatable Molecules and Their Biological Applications

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## Abstract

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Many photoactivatable molecules generate reactive oxygen species (ROS) upon light irradiation. If these molecules are present in a living system, the generated ROS will deactivate surrounding proteins, generate localized cytotoxicity, and kill nearby cell upon light irradiation. The duration and effect of generated free radicals are short duration and localized. Therefore, these photosensitizers are used for various research and medical applications in chromophore-assisted light inactivation, photoablation, and photodynamic therapy. In this chapter, we summarize the various photosensitizers, their biological applications, and various other uses.