

Development of molecular system for the treatment of the area irradiated by strong ultraviolet light

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Methods utilizing the irradiation of light are powerful tools for various fields of scientific research, as well as in industry and in medical application, because they enable non-invasive and spatio-temporal control. In those methods, the molecules, whose functions such as emission of light and cleavage of covalent bonds have been utilized. Coumarin has been utilized as a core structure of those photofunctional molecules, such as fluorescent sensors and photoremovable protecting groups. Here, we have developed photoremovable protecting groups that could function under a specific condition, that is, a specific range of pH or the presence of hydrogen peroxide, respectively, derived from coumarin-based fluorescent sensors. Those groups could potentially be utilized in photo-releasing a drug selectively around diseased tissues.