

Synthesis of a fluorescent benzoxazole material with improved optical and physical stability for immunofluorescence

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Immunofluorescence is a technique to investigate the behavior of cells by binding fluorescent substances. Fluorescent substances are largely divided into organic dyes and inorganic quantum dots. Typical organic dyes used include fluorescein and rhodamine, which have excellent fluorescence efficiency in solution, but there is a problem that fluorescence efficiency decreases when labeling cells in a solid state. It is also sensitive to pH and lose its fluorescence over time. In order to overcome the limitations of the existing fluorescence labeling material, a fluorescent material having high luminescence efficiency in a stable and solid state was synthesized by using a benzoxazole molecule having high absorption coefficient and stability and easy chemical modification of the molecule.