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Peroxidase-catalyzed chemiluminescence system and its application in immunoassay

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Abstract

Peroxidases are widely used as catalysts in chemiluminescence (CL) reaction because of their excellent catalytic activity and various selectable species, such as horseradish peroxidase (HRP), sweet potato peroxidase (SPP) and soybean peroxidase (SbP). They have been employed in many different CL systems for the determination of hydrogen peroxidase (H_2O_2), nucleic acid, protein and so on. In this paper, the application of peroxidases in the most commonly used luminol- H_2O_2 CL system was reviewed from two aspects of horseradish peroxidase (HRP) and some anionic peroxidases. Thereinto, some enhancers used into HRP-catalyzed luminol- H_2O_2 CL system for higher sensitivity and lower detection limit were discussed according to their classification. The employment of some anionic peroxidases such as SPP and SbP in luminol- H_2O_2 CL system was also presented. The addition of some specific enhancers into anionic peroxidase catalyzed luminol- H_2O_2 system could lead to an increased light intensity and a relatively long-term stable signal. The mechanism of all these enhanced luminol- H_2O_2 CL

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