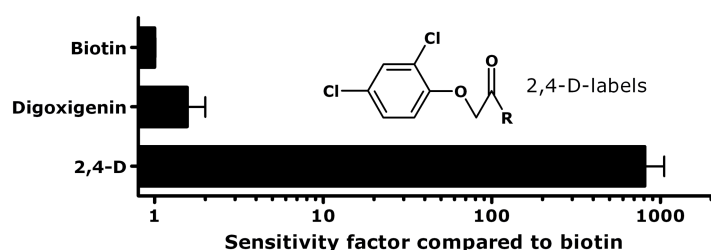


Kits for labeling and highly sensitive detection of biomolecules

Reference Number TO 14-00002

The Challenge

Bioanalytical technologies are on the rise, and diagnostic methods are evolving rapidly. The expanding complexity of the issues under investigation increasingly requires multiple labels in the experimental set-up. It is therefore of uttermost importance to provide novel means for the specific labeling and sensitive detection of biomolecules.



Highly sensitive detection of biomolecules labeled with 2,4-dichlorophenoxyacetate (2,4-D) derivatives. The figure depicts an experiment where a small protein was labeled with different labeling reagents and the lower detection limits of the respectively labeled protein were compared.

Source: Bade, Röckendorf & Frey, 2006.

The Technology

New derivatives of 2,4-dichlorophenoxyacetate (2,4-D) have been developed for labeling biomolecules, such as RNA, DNA, (oligo-)nucleotides, amino acids, (glyco-)proteins, peptides, saccharides or lipids. The reactive labeling compounds are soluble in aqueous systems (<2% organic solvent) and are sufficiently stable to allow efficient labeling under physiological conditions. Detection of the 2,4-D-labels is achieved by monoclonal antibodies which bind to 2,4-D with high specificity and affinity.

The system thus combines a high versatility with an excellent sensitivity which renders it superior to widely used labeling systems such as the biotin/streptavidin- and the digoxigenin/anti-digoxigenin-system (up to 800-fold higher sensitivity than biotin/streptavidin, depending on assay set-up).

Commercial Opportunity

Licensing

Patent Situation

Priority establishing German patent applications that claim the new derivatives of 2,4-D and their use for labeling and detecting biomolecules as well as kits including 2,4-D-specific antibodies were filed in 2005. The patentability of the claims was acknowledged in an examination report issued by the German Patent and Trademark Office. PCT-applications were filed in 2006.

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