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3-Amino-9-ethylcarbazole

Product Number **A5754**
Storage Temperature 2-8 °C

Product Description
Molecular Formula: $C_{14}H_{14}N_2$
Molecular Weight: 210.3
CAS Number: 132-32-1
Melting Point: 98.0 – 100.0 °C
Synonym: AEC

This product is used as a substrate for a variety of enzymes. It is primarily used as a horseradish peroxidase substrate, yielding a stable red product (using 0.05 M acetate buffer at pH 5).[1-3] It was shown to work better than benzidine in myeloperoxidase staining[1] and to be less sensitive to oxidases than phenazine methosulfate and nitroblue tetrazolium.[4] However, it is not as sensitive for horseradish peroxidase as 2,2'-azino-bis(3-ethylbenzthiazoline-6-sulfonic acid (ABTS) or o-phenylenediamine (OPD).[5]

This product can also be used to detect cytochrome oxidase.[6] It can be used in combination with N-phenyl-p-phenylenediamine using cobalt ion chelation to enhance the color observed.[7]

The product is used in the AEC staining kit (Product No. AEC101) as a solution in DMF for immunohistochemistry and immunoblotting.

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
This product is soluble acetone (50 mg/ml). It is also soluble in DMF.

Storage/Stability
A solution of this product in DMF should be stable at 4 °C when stored in the dark and kept tightly sealed.

Procedure
For use as a peroxidase substrate:
Dissolve 25 mg in 2.5 ml of DMF. This solution is then added to 47.5 ml of 50 mM acetate buffer, pH 5.0; immediately before use, add 25 µl of 30% hydrogen peroxide to this solution.

References
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3. Graham, R. C. Jr., et al, Cytochemical demonstration of peroxidase activity with 3-amino-9-ethylcarbazole. J. Histochem. Cytochem., **13**, 150-152 (1965).
4. Feinstein, R. N., and Lindahl, R., Detection of oxidases on polyacrylamide gels. Anal. Biochem., **56(2)**, 353-360 (1973).
5. Al-Kaissi, E., and Mostratos, A., Assessment of substrates for horseradish peroxidase in enzyme immunoassay. J. Immunol. Meth., **58**, 127-132 (1983).
6. Enzyme Histochemistry, Burstone, M. S., Academic Press (New York, NY: 1962), pp. 429-443.
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