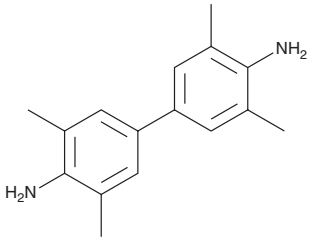
PRODUCT INFORMATION

TMB

Item No. 36361

CAS Registry No.:	54827-17-7
Formal Name:	3,3′,5,5′-tetramethyl-[1,1′-biphenyl]-4,4′-diamine
Synonym:	3,3′,5,5′-Tetramethylbenzidine
MF:	$C_{16}H_{20}N_2$
FW:	240.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 212, 288 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

TMB is supplied as a solid. A stock solution may be made by dissolving the TMB in the solvent of choice, which should be purged with an inert gas. TMB is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of TMB in these solvents is approximately 5 and 20 mg/ml, respectively.

Description

TMB is a colorimetric substrate for peroxidases, including hemoglobin, myeloperoxidase, and horseradish peroxidase (HRP).[1-4] Enzymatic oxidation of TMB produces a radical cation followed by a diimine product that can be quantified by colorimetric detection at 652 and 450 nm, respectively, as a measure of peroxidase activity. TMB has commonly been used as a substrate for HRP in ELISA and immunohistochemical applications.[5,6]

References

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2. Marquez, L.A. and Dunford, H.B. Mechanism of the oxidation of 3,5,3',5'-tetramethylbenzidine by myeloperxidase determined by transient-and steady-state kinetics. *Biochemistry* **36(31)**, 9349-9355 (1997).
3. Josephy, P.D., Eling, T., and Mason, R.P. The horseradish peroxidase-catalyzed oxidation of 3,5,3',5'-tetramethylbenzidine. Free radical and charge-transfer complex intermediates. *J. Biol. Chem.* **257(7)**, 3669-3675 (1982).
4. Madersbacher, S. and Berger, P. Double wavelength measurement of 3,3',5,5'-tetramethylbenzidine (TMB) provides a three-fold enhancement of the ELISA measuring range. *J. Immunol. Methods* **138(1)**, 121-124 (1991).
5. Reyna-Bello, A., Eleizalde, M.C., and Silva, A.M. Assessment of chromogen suitability in ELISA for the detection of anaplasmosis and trypanosomosis. *J. Immunoassay Immunochem.* **28(1)**, 1-11 (2007).
6. Mesulam, M.M. and Rosene, D.L. Sensitivity in horseradish peroxidase neurohistochemistry: A comparative and quantitative study of nine methods. J. *Histochem. Cytochem.* **27(3)**, 763-773 (1979).

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