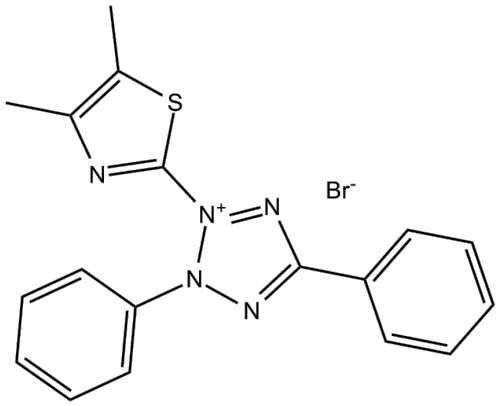
Product Data Sheet

Product Name: MTT
Cat. No.: GC14731

Chemical Properties

Cas. No.	298-93-1		
Chemical Name	3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-2H-tetrazol-3-ium bromide		
SMILES	CC1=C(C)N=C([N+]2=NC(C3=CC=CC=C3)=NN2C4=CC=CC=C4)S1.[Br-]		
Formula	$C_{18}H_{16}N_5SBr$	M.Wt	414.32
Solubility	≥ 41.4mg/mL in DMSO	Storage	Store at 2-8°C, protect from light
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Background

MTT (3-(4,5-Dimethyl-2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide) is a reagent used in the measurement of in vitro cell proliferation.

Tetrazolium salts have been the most widely used tools in cell biology for deternining the metabolic activity of cells ranging from microbial origin to mammalian. Fractionation studies in mammalian cells indicate that NADH, the reduced pyridine nucleotide cofactor, is responsible for most MTT reduction,

which is further supported by studies with whole cells.

In vitro: It has been found that MTT reduction was associated not only with mitochondria, but also with the cytoplasm and nonmitochondrial membranes including endosome/lysosome compartment and plasma membrane. The net positive charge on MTT appears to be the predominant factor involved in their cellular uptake through the potential of plasma membrane. However, the second generation tetrazolium dyes (XTT, WST-1 and to some extent, MTS) that form water-soluble formazans and require an intermediate electron acceptor for reduction, are characterised by a net negative charge and therefore are largely cell-impermeable [1].

In vivo: MTT currently is only used for in vitro cell proliferation determination and there is no in vivo study reported.

Reference:
[1] Berridge MV,Herst PM,Tan AS. Tetrazolium dyes as tools in cell biology: new insights into their cellular reduction. Biotechnol Annu Rev.2005;11:127-52.