

GTTR [Texas Red gentamicin conjugate]Catalog number: 24300, 24301
Unit size: 100 ug, 1 mg**Product Details**

Storage Conditions	Freeze (<-15 °C), Minimize light exposure
Expiration Date	12 months upon receiving

Chemical Properties

Appearance	Solid
Molecular Weight	~1300
Soluble In	DMSO

Spectral Properties

Excitation Wavelength	586 nm
Emission Wavelength	603 nm

Applications

Gentamicin is widely used for treating tuberculosis and Gram-negative infections and is particularly useful in neonatal intensive care units. Fluorophore-tagged drugs, such as gentamicin-Texas Red (GTTR) conjugates, have been used to identify drug trafficking routes across the BLB and into hair cells, and specifically in the cochlea - the sensory organ responsible for hearing. Identifying the mechanisms involved in the intracochlear trafficking of ototoxic drugs to hair cells is of fundamental as well as clinical importance. Texas Red-gentamicin conjugate (GTTR) provides researchers a valuable tool to study the cellular uptake, kinetics and distribution of gentamicin through fluorescence techniques, such as fluorescence microscopy, fluorescence correlation spectroscopy, single molecule spectroscopy. The TR fluorophore can be conveniently excited from 500-600 nm, with an emission maximum centered around 610 nm. Acute nephrotoxicity and permanent ototoxicity are serious side-effects that increase patient morbidity, or induce permanent auditory and vestibular deficits. Several approaches have been used to study the intracellular mechanisms induced by ototoxic drugs. However, ototoxic drugs must first cross the blood-labyrinth barrier (BLB) before entering sensory hair cells to exert their cytotoxic effect that leads to hearing loss and deafness. The BLB is similar to the blood-brain barrier (BBB), and is composed of tight junction-coupled endothelial and epithelial barrier layers that transport nutrients and ions from one side of the barrier to the other.