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Imipramine Blue

National Cancer Institute

Source

National Cancer Institute. *Imipramine Blue*. NCI Thesaurus. Code C126638.

A triphenylmethane-based dye and an inhibitor of nicotinamide adenine dinucleotide phosphate (NADP+) oxidase 4 (NOX4), with potential anti-invasive and anti-oxidative activities. Upon administration, imipramine blue (IB) inhibits the activity of NOX4 and prevents NOX4-mediated cell signaling. This prevents the formation of NOX4-mediated reactive oxygen species (ROS), abrogates the ROS-induced inhibition of protein tyrosine phosphatase (PTP) activation, and induces both G2/M cell cycle arrest and apoptosis. NOX4, an enzyme belonging to the NOX family of proteins, promotes the production of ROS and plays a key role in the suppression of PTP activation; it is upregulated in a variety of cancers.