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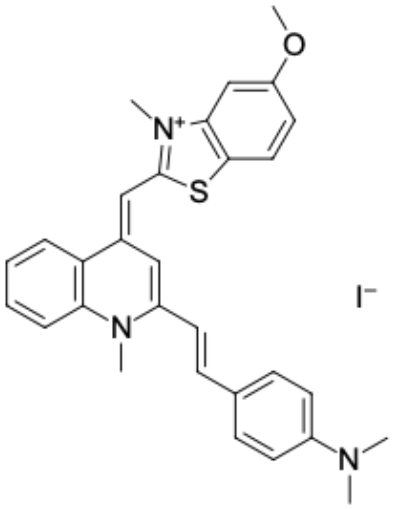
TOR-G4, G-quadruplexes fluorescent probe

http://hk.lumiprobe.com/p/tor-g4-g-quadruplexes-probe

G-quadruplexes (G4s) are secondary structures that form in DNA and RNA through noncanonical hydrogen bonding between four guanine bases [1,2]. In the nucleus, DNA G4s have been associated with epigenetic regulation of gene expression through their interactions with regulatory proteins, such as transcription factors and chromatin modifiers [3,4]. RNA G4s have been linked to RNA splicing, transport, and translation regulation, as well as RNA-mediated stress responses in the cytoplasm [5-7].

TOR-G4 is a thiazole orange derivative, a newly synthesized G4 fluorescent probe [8]. It is a small-molecule alternative to immunochemistry with G4-specific antibodies. TOR-G4 allows the visualization of G4s based on changes to the fluorescence lifetime of a probe upon nucleic acid binding. The lifetime of TOR-G4 is highest in the presence of G4s and lower for other sequences. Within cells, TOR-G4 is primarily colocalized with RNA in the cytoplasm and nucleoli, making it the first lifetime-based probe validated for exploring the emerging roles of RNA G4s in cell functioning. TOR-G4 is suitable for imaging RNA G4s via FLIM [8].

[1] Trends in Chemistry 2, 123 (2020); [2] Nat Rev Mol Cell Biol 21, 459 (2020); [3] Nucleic Acids Res 49, 8419 (2021); [4] Trends Genet 35, 29 (2019); [5] Nucleic Acids Res 48, 12534 (2020); [6] Trends Biochem Sci 46, 270 (2021); [7] Nucleic Acids Res 49, 5426 (2021); [8] J Am Chem Soc 146, 1009 (2024).



外观:	黑色固體物質
分子量:	607.56
分子式:	$C_{30}H_{30}IN_3OS$
质量控制:	NMR ^1H 和 HPLC-MS (95+%)
储存条件:	收到後 -20°C 避光保存 24 個月。運輸：室溫最多可保存3週。乾燥。
法律声明:	本產品僅供研究目的提供和銷售。本產品並未經過食品、藥品、醫療器械、化妝品等領域的安全性和效力測試，且未經明示或暗示授權用於其他任何用途，包括但不限於體外診斷、人類或動物用途，以及商業用途。

激发/吸收极大值，纳米:	540
发射极大值，纳米:	660