

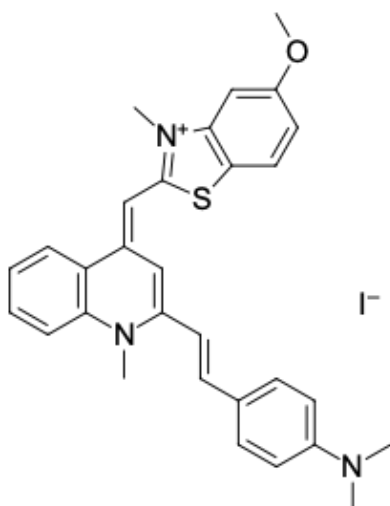
TOR-G4, G-quadruplexes fluorescent probe

<http://cn.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: 黑色固体物质

分子量: 607.56

分子式: C₃₀H₃₀N₃OS

质量: NMR ¹H 和 HPLC-MS (95+%)

控制:

储存: 收到后在 -20°C 黑暗条件下可保存 24 个月。运输: 室温下最多可保存 3 周。干燥。

条件:

法律声明: 本产品仅供研究目的提供和销售。本产品并未经过食品、药品、医疗器械、化妆品等领域的安全性和效力测试, 且未经明示或暗示授权用于其他任何用途, 包括但不限于体外诊断、人类或动物用途, 以及商业用途。

激发: 540

发射/吸收极大值, 纳米:

发射极大值, 纳米: