# LTGO-33

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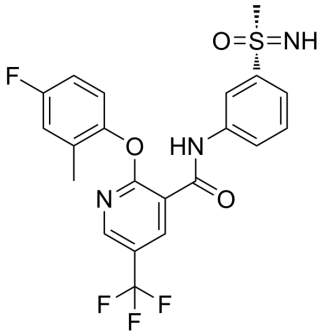
| **Cat. No.:** | HY-157802 |
| **CAS No.:** | 2834106-06-6 |
| **Molecular Formula:** | $C_{21}H_{17}F_4N_3O_3S$ |
| **Molecular Weight:** | 467.44 |
| **Target:** | Sodium Channel |
| **Pathway:** | Membrane Transporter/Ion Channel |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |




## BIOLOGICAL ACTIVITY

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| **Description** | LTGO-33 is a potent and selective voltage-gated sodium channel NaV1.8 inhibitor. LTGO-33 inhibits NaV1.8 in the nM potency range and exhibits over 600-fold selectivity against human NaV1.1-NaV1.7 and NaV1.9. LTGO-33 exhibits state-independent inhibition with similar potencies on channels in the closed and inactivated conformations. LTGO-33 inhibits native TTX-R NaV1.8 currents in non-human primate and human DRG neurons, where it reduces action potential firing. LTGO-33 can be used for pain disorders research[1]. |
| **$IC_{50}$ & Target** | $hNa_V1.8$ |
| **In Vitro** | LTGO-33 exhibits an $IC_{50}$ of 33 nM from the closed state and 24 nM from an inactivated state[1].<br>LTGO-33 displays species specificity for primate NaV1.8 over dog and rodent NaV1.8 and inhibits action potential firing in human dorsal root ganglia neurons[1].<br>LTGO-33 inhibits TTX-R currents in primary DRG neurons from human (male donors: $IC_{50}$ of 110 nM, 95% CI: 92 to 120 nM, n = 3-15 neurons per concentration; female donors: $IC_{50}$ of 120 nM, 95% CI: 100 to 140 nM, 4- 6 neurons per concentration) and cynomolgus monkey ($IC_{50}$ of 100 nM, 95% CI: 71 to 150 nM, n = 6 cells) but is markedly less effective on DRG neurons from dog ($IC_{50}$ >10 μM, n = 6 cells), rat ($IC_{50}$ >30 μM, n = 7 cells), and mouse ($IC_{50}$ >30 μM, n = 8 cells)[1].<br>LTGO-33 stabilizs the deactivated state of VSDII, effectively keeping the channel closed by preventing movement of VSDII[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## REFERENCES

[1]. Gilchrist JM, et al. Pharmacologic Characterization of LTGO-33, a Selective Small Molecule Inhibitor of the Voltage-Gated Sodium Channel NaV1.8 with a Unique Mechanism of Action. Mol Pharmacol. 2024 Feb 15;105(3):233-249.



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