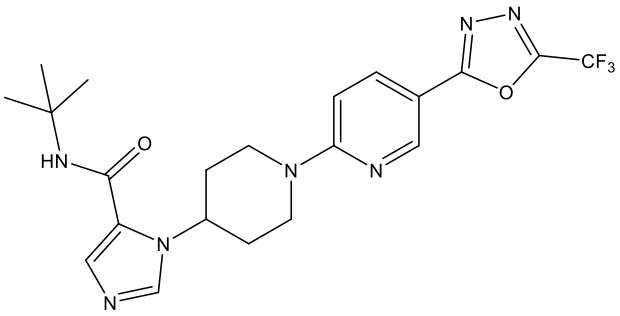
Catalog # 10-4109

WNK463

CAS# 2012607-27-9

N-tert-Butyl-3-[1-[5-[5-(trifluoromethyl)-1,3,4-oxadiazol-2-yl]pyridine-2-yl]piperidin-4-yl]imidazole-4-carboxamide

Lot # FBS3053



WNK463 is a potent and selective pan-With-No-Lysine (WNK) kinase inhibitor (IC_{50}'s: WNK1 = 5 nM, WNK2 = 1 nM, WNK3 = 6 nM, WNK4 = 9 nM), an important enzyme in blood pressure regulation and body fluid and electrolyte homeostasis.[1] WNK kinases respond to hypertonicity by regulating SLC12 cation chloride transporters to rescue cell volume.[2] WNK463 reduced migration of invasive types of breast cancer and attenuated tumor growth and metastatic burden in a mouse model.[3] It induced a significant increase in NLRP3 inflammasome activation and pyroptosis specifically via WNK1 inhibition as well as increasing TNF production without inflammasome activation.[4]

1) Yamada *et al.* (2016), *Small-molecule WNK inhibition regulates cardiovascular and renal function;* Nat. Chem. Biol. **12** 896
2) Boyd-Shiwarski *et al.* (2022), *WNK kinases sense molecular crowding and rescue cell volume via phase separation*; Cell **185** 4488
3) Jaykumar *et al*. (2021), *WNK1 Enhances Migration and Invasion in Breast Cancer Models*; Mol. Cancer Ther. **20** 1800
4) Mayes-Hopfinger *et al*. (2021), *Chloride sensing by WNK1 regulates NLRP3 inflammasome activation and pyroptosis*; Nat. Commun. **12** 4546

PHYSICAL DATA

Molecular Weight:	463.47
Molecular Formula:	$C_{21}H_{24}F_3N_7O_2$
Purity:	>98% HPLC
	NMR: (Conforms)
Solubility:	Soluble in DMSO (25 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20º for up to 1 year from the date of purchase. Store solutions at -20ºC for up to 3 months.

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