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DATASHEET

Yoda2 (KC289)

Product overview

Name	Yoda2 (KC289)
Cat No	HB9134
Alternative names	Yoda 2, Yoda-2
Biological action	Activator
Purity	>98%
Description	Novel, selective Piezo1 channel activator. Improved efficacy, potency and solubility compared to Yoda1.

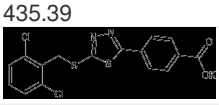
Biological Data

Biological description	Novel, selective Piezo1 channel activator which shows improved (or equivalent) reliability, efficacy and potency in functional assays compared to Yoda1 (EC_{50} values are 150nM and 600nM at mouse Piezo1 in calcium assays for Yoda2 (KC289) and Yoda1 respectively). Selective for Piezo1 over other membrane proteins and suggested to have greater effect and potency at mouse Piezo1 compared to human Piezo1. Also shows improved aqueous solubility more suited to physiological conditions than those of Yoda1 (~160x more soluble in aqueous buffer than Yoda1). Active in vivo and shows vasorelaxant effects consistent with Piezo1 agonism. Recently shown to help promote cortical bone parameters in mice.

Solubility & Handling

Solubility overview	Soluble in DMSO (50 mM with warming)
Storage instructions	Room temperature
Storage of solutions	Prepare and use solutions on the same day if possible. Store solutions at -20°C for up to one month if storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.
Handling	When Parsonage et al used Yoda2 (KC289) in universal aqueous buffer, a final DMSO concentration of 0.5% was used to maintain solubility of the compound. Meslier et al prepared working solutions in 0.9% (w/v) Sodium Chloride, 5% DMSO, and 10% (w/v) cyclodextrin SBE-B-CD, to facilitate solubilization of the compound.
Shipping Conditions	Stable for ambient temperature shipping. Follow storage instructions on receipt.
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	4-(5-{[(2,6-dichlorophenyl)methyl]sulfanyl}-1,3,4-thiadiazol-2-yl)benzoic acid potassium salt
Molecular Weight	435.39
Chemical structure	
Molecular Formula	$C_{16}H_9Cl_2KN_2O_2S_2$
CAS Number	3081450-95- 2
SMILES	O=C(O[K])c1ccc(cc1)c1nnc(SCc2c(Cl)cccc2Cl)s1
Source	Synthetic
InChi	InChI=1S/C16H10Cl2N2O2S2.K/c17-12-2-1-3-13(18)11(12)8-23-16-20-19-14(24-16)9-4-6-10(7-5-9)15(21)22;/h1-7H,8H2,(H,21,22);/q;+1/p-1
InChiKey	OQEIWUHZUPFUQU-UHFFFAOYSA-M
Appearance	Beige solid

References

Improved PIEZO1 agonism through 4-benzoic acid modification of Yoda1.

Parsonage G et al (2023) British journal of pharmacology 180

PubMedID 36457143

Independent endothelial functions of PIEZO1 and TRPV4 in hepatic portal vein and predominance of PIEZO1 in mechanical and osmotic stress.

Endesh N et al (2023) Liver international : official journal of the International Association for the Study of the Liver 43

PubMedID 37349903