Hello Bio, Inc.
304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500
F. 609-228-4994

customercare-usa@hellobio.com

DATASHEET

Yoda 1

Product overview

Name	Yoda 1
Cat No	HB5534
Biological action	Activator
Purity	>99%
Description	Selective PIEZO1 channel activator

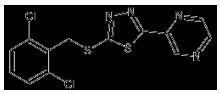
Biological Data

Biological description	Selective mouse and human Piezo1 channel activator which does not show modulatory effects on Piezo2 (EC_{50} values = ~10-50 µM). Activates Piezo1 without application of any mechanical force and binds to a narrow hydrophobic pocket to stabilize the open conformation of the channel. Shows various activities including elevation of intracellular calcium levels, control volume of red blood cells, activation of PI3K-Akt signaling, enhancement of human aortic smooth muscle cell lines calcification and increase bone mass in vivo. Yoda2 (KC289) and KC159 are more efficacious, potent and Piezo1 activators with improved solubility in aqueous solutions.

Solubility & Handling

Storage instructions	+4°C
Solubility overview	Soluble in DMSO (20 mM)
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	2-[5-[[(2,6-Dichlorophenyl)methyl]thio]-1,3,4-thiadiazol-2-yl]pyrazine
Molecular Weight	355.3
Chemical structure	
Molecular Formula	$C_{13}H_8Cl_2N_4S_2$
CAS Number	448947-81-7
PubChem identifier	2746822
SMILES	C1=CC(=C(C(=C1)Cl)CSC2=NN=C(S2)C3=NC=CN=C3)Cl
InChi	InChI=1S/C13H8Cl2N4S2/c14-9-2-1-3-10(15)8(9)7-20-13-19-18-12(21-13)11-6-16-4-5-17-11/h1-6H,7H2
InChiKey	BQNXBSYSQXSXPT-UHFFFAOYSA-N

References

Chemical activation of the mechanotransduction channel Piezo1.

Syeda R et al (2015) eLife 4

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Mechanosensitive meningeal nociception via Piezo channels: Implications for pulsatile pain in migraine?

Mikhailov N et al (2019) Neuropharmacology 149
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Piezo1 links mechanical forces to red blood cell volume.

Cahalan SM et al (2015) eLife 4
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A mechanism for the activation of the mechanosensitive Piezo1 channel by the small molecule Yoda1.

Botello-Smith WM et al (2019) Nature communications 10
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