Product Data Sheet

Product Name:	Scrambled 10Panx
Cat. No.:	GC11058

Chemical Properties

Cas. No.	1315378-72-3		
SMILES	CC(C)C(C(=O)NC(CC1=CC=C(C=C1)O)C(=O)NC(CC2=CNC3=CC=CC=C32)C(=O)NC(C)C(=O)NC(CCC(=O)N)C(=O)NC(C)C(=O)NC(C(		
Formula	$C_{58}H_{79}N_{15}O_{16}$	M.Wt	
Solubility	≥ 31.05mg/mL in DMSO	Storage	
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Scrambled 10Panx		

Protocol

Cell experiment [1]:

Cell lines	Cultured human subcutaneous fibroblasts.
Preparation method	Soluble to 0.50 mg/ml in sterile water. General tips for obtaining a higher concentration: Please warm the tube at 37℃ for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20℃ for several months.
Reaction Conditions	100 μM.
Applications	In cultured human subcutaneous fibroblasts, 10panx decreases the bradykinin-induced [Ca2+]i response and attenuates bradykinin (30 μM)-induced ATP release [1]. In oocytes, 10panx inhibits pannexin1 currents. In oocytes expressing pannexin1, 10panx attenuates dye uptake by pannexin1 channels [2].

References:

[1]. Pinheiro AR, Paramos-de-Carvalho D, Certal M, et al. Bradykinin-induced Ca2+ signaling in human subcutaneous fibroblasts involves ATP release via hemichannels leading to P2Y12 receptors activation. Cell Commun Signal, 2013, 11: 70.

[2]. Wang J, Ma M, Locovei S, et al. Modulation of membrane channel currents by gap junction protein mimetic peptides: size matters. Am J Physiol Cell Physiol. 2007, 293(3): C1112-1119.

Background

Scrambled 10Panx is the scrambled form of 10Panx (WRQAAFVDSY), a mimetic peptide of pannexin 1 that inhibits dye uptake by macrophages without affecting cellular membrane currents. Being structurally similar to anther peptide PanxE1B, 10Panx is three amino acid shorter but exerting an inhibitory effect against pannexin1 currents in oocytes to a similar extent as PanxE1b. 10Panx is also able to block the activation of I_{2nd}, decrease the bradykinin-induced $[Ca^{2+}]_i$ response and attenuate bradykinin-induced ATP release from human fibroblasts

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loaded with quinacrine. However, in several studies, scrambled 10Panx has been proved to be less effective than 10Panx in its authentic form.

Reference

[1].Roger J. Thompson, Michael F. Jackson, Michelle E. Olah, Ravi L. Rungta, Dustin J. Hines, Michael A. Beazely, John F. MacDonald, Brian A. MacVicar. Activation of Pannexin-1 hemichannels augments aberrant bursting in the hippocampus. Science 2008; 322: 1555-1559.
[2].Ana Rita Pinheiro, Diogo Paramos-de-Carvalho, Marianna Certal, Cristina Costa, Maria Teresa Magalhaes-Cardoso, Fatima Ferreirinha, Maria Adelina Costa and Paulo Correia-de-Sa. Bradykinin-induced Ca2+ signaling in human subcutaneous fibroblasts involves ATP release via hemichannels leading to P2Y12 receptors activation. Communication and Signaling 2013, 11:70
[3].Junjie Wang, Meiyun Ma, Silviu Locovei, Robert W. Keane and Gerhard Dahl. Modulation of membrane channel currents by gap junction protein mimetic peptides: size matters. Am J Physiol Cell Physiol 293: C1112-C1119, 2007

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA