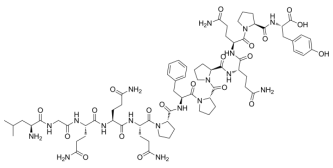
Gliadin p31-43

Cat. No.:	HY-P3151
CAS No.:	176326-01-5
Molecular Formula:	$C_{71}H_{102}N_{18}O_{20}$
Molecular Weight:	1527.68
Sequence Shortening:	LGQQQPFPPQQPY
Target:	Others
Pathway:	Others
Storage:	Sealed storage, away from moisture Powder -80°C 2 years -20°C 1 year * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (32.73 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	0.6546 mL	3.2729 mL	6.5459 mL
	5 mM	0.1309 mL	0.6546 mL	1.3092 mL
	10 mM	0.0655 mL	0.3273 mL	0.6546 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (65.46 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Gliadin p31-43 is an undigested gliadin peptide. Gliadin p31-43 induces an innate immune response in the intestine and interferes with endocytic trafficking. Gliadin p31-43 can be used for celiac disease research[1][2].

In Vitro

Gliadin p31-43 (100 μg/mL; 30 minutes-6 hours) treatment induces the MyD88/TLR7 complexes, and activates downstream signalling by activating MAPKs, ERK, JNK and p38). Gliadin p31-43 increases the levels of the phosphorylated forms of pY-ERK, JNK (pY-JNK) and p38 (pY-p38)[1].

Gliadin p31-43 treatment increases NF-κB phosphorylation in CaCo-2 cells from 0.45 in control cells to 0.86. Gliadin p31-43 treatment induces a significant increase in levels of the MxA protein. The levels of the IFN-α 7 and 17 mRNAs are also analysed after Gliadin p31-43 treatment[1].

In CaCo-2 cells, Gliadin p31-43 localizes to the early endosomes and delays vesicular trafficking. Gliadin p31-43 interferes with the correct localization of the growth factor regulated tyrosine kinase substrate (HRS) to early endosomes, delaying the

maturation of the endocytic vesicles[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	CaCo-2 cells
Concentration:	100 μg/mL
Incubation Time:	30 minutes, 3 hours, 6 hours
Result:	Showed the increase in formation of the MyD88/TLR7 complex, and increased in the level of TLR7.

In Vivo

Gliadin p31-43 (10 μg; intraluminally injection) shows a sequence-specific spontaneous ability to form structured oligomers and aggregates in vitro and induced activation of the apoptosis-associated speck-like (ASC) complex[2].

The increment of IL-1β indicates the activation of the inflammasome caspase-1 pathway in the small intestine mucosa by oral administration of Gliadin p31-43 (20 μg) in wild type C57Bl/6 mice. Gliadin p31-43 has an intrinsic propensity to form oligomers which trigger the NLRP3 inflammasome[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Merlin Nanayakkara, et al. P31-43, an undigested gliadin peptide, mimics and enhances the innate immune response to viruses and interferes with endocytic trafficking: a role in celiac disease. Sci Rep. 2018 Jul 17;8(1):10821.

[2]. María Florencia Gómez Castro, et al. p31-43 Gliadin Peptide Forms Oligomers and Induces NLRP3 Inflammasome/Caspase 1- Dependent Mucosal Damage in Small Intestine. Front Immunol. 2019 Jan 30;10:31.

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