# **PRODUCT** INFORMATION



## Gap 19 (trifluoroacetate salt)

Item No. 32743

Formal Name:	L-lysyl-L-glutaminyl-L-isoleucyl- L-α-glutamyl-L-isoleucyl-L-lysyl- L-lysyl-L-phenylalanyl-L-lysine, trifluoroacetate salt	H <sub>2</sub> N FO HO		
Synonym:	KQIEIKKFK	$H_{2}N_{n}$ $\wedge$ $\stackrel{\circ}{\downarrow}$ $\stackrel{\circ}{\downarrow}$ $\stackrel{\circ}{\downarrow}$ $\stackrel{\circ}{\downarrow}$ $\stackrel{\circ}{\downarrow}$		
MF:	C <sub>55</sub> H <sub>96</sub> N <sub>14</sub> O <sub>13</sub> • XCF <sub>3</sub> COOH			
FW:	1,161.4			
Purity:	≥95%			
Supplied as:	A solid		• XCF3COOH	 NH2 NH2
Storage:	-20°C			
Stability:	≥4 years			

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

#### Laboratory Procedures

Gap 19 (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the Gap 19 (trifluoroacetate salt) in water. The solubility of Gap 19 (trifluoroacetate salt) in water is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

#### Description

Gap 19 is a nonapeptide derivative of connexin43 (Cx43) and an inhibitor of Cx43 hemichannels.<sup>1,2</sup> It suppresses the membrane charge transfer ( $Q_m$ ) in HeLa cells expressing Cx43 (IC<sub>50</sub> = ~6.5  $\mu$ M), as well as Cx43 hemichannel currents in isolated guinea pig cardiomyocytes when used at a concentration of 100 µM.<sup>1</sup> Gap 19 inhibits glutamate-induced ATP release, a marker of Cx43 hemichannel activity, in primary mouse astrocytes.<sup>2</sup> In vivo, Gap 19 (300 µg/kg, i.c.v.) decreases cortical neuronal loss, infarct volume, and the number of errors in a foot fault test in a mouse model of cerebral ischemia and reperfusion injury induced by middle cerebral artery occlusion (MCAO).<sup>3</sup> It also reduces infarct size in a mouse model of myocardial ischemia and reperfusion injury induced by ligation of the left anterior descending (LAD) artery when administered at a dose of 25 mg/kg.<sup>1</sup>

#### References

- 1. Wang, N., De Vuyst, E., Ponsaerts, R., et al. Selective inhibition of Cx43 hemichannels by Gap19 and its impact on myocardial ischemia/reperfusion injury. Basic Res. Cardiol. 108(1), 309 (2013).
- 2. Abudara, V., Bechberger, J., Freitas-Andrade, M., et al. The connexin43 mimetic peptide Gap19 inhibits hemichannels without altering gap junctional communication in astrocytes. Front. Cell Neurosci. 8, 306 (2014).
- 3. Chen, B., Yang, L., Chen, J., et al. Inhibition of Connexin43 hemichannels with Gap19 protects cerebral ischemia/reperfusion injury via the JAK2/STAT3 pathway in mice. Brain Res. Bull. 146, 124-135 (2019).

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFFTY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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