

Ipamorelin

Ipamorelin is a synthetic pentapeptide growth hormone secretagogue that acts as a selective agonist of the ghrelin receptor (GHS-R1a). It is investigational and not approved for any use.



■ Hydrophobic ■ Acidic ■ Basic ■ Polar ■ Gly, Pro, Cys ■ Non-standard

Length	5 residues
Formula	C ₃₈ H ₄₉ N ₉ O ₅
Average mass	711.85 g/mol
Monoisotopic mass	711.3857 Da
Evidence	Early clinical studies
US status	Not FDA-approved for any use
WADA	Prohibited (S2)

Pentapeptide amide with Aib, D-2-naphthylalanine and D-Phe.

Expected ions (monoisotopic)

[M+H] ⁺	[M+2H] ²⁺	[M+3H] ³⁺	[M+4H] ⁴⁺
712.3929	356.7001	238.1358	178.8537

What the COA should show

A certificate of analysis should confirm identity by mass spectrometry, with the observed mass matching the expected mass shown on this page, and report purity by reverse-phase HPLC. Because the sequence contains unnatural residues (Aib, D-2-Nal) and D-amino acids, a good COA or supporting data should address stereochemical integrity, since epimerization or L-isomer impurities can co-elute with the main peak on standard methods. The C-terminal amide should be confirmed, as the free acid differs by about one mass unit and is easy to miss at low resolution. Counter-ion (acetate or TFA) and net peptide content should be stated.

Storage and stability

Store lyophilized ipamorelin sealed at -20 °C, protected from light and moisture, and allow vials to reach room temperature before opening to limit condensation. The short sequence lacks methionine and cysteine, so oxidation risk is lower than for many peptides, although the tryptophan-like naphthylalanine and histidine residues can still degrade under light and heat. Reconstituted laboratory solutions should be kept refrigerated, used promptly, aliquoted to avoid repeated freeze-thaw cycles, and handled with sterile technique.