Ipamorelin

CAS: 170851-70-4
Formula: C38H49N9O5

Document ID: 191cdcab
Revision Date: 2026-08-13
Version: 1.0

Section 1 — Product and Company Identification

Product Name	Ipamorelin
Synonyms	Ipamorelin; 170851-70-4; NNC-26-0161
CAS Number	170851-70-4
Molecular Formula	C38H49N9O5
IUPAC Name	(2S)-6-amino-2-[[(2R)-2-[[(2R)-2-[[(2S)-2-[(2-amino-2-methylpropanoyl)amino]-3-(1H-imidazol-5-yl)propanoyl]amino]-3-naphthalen-2-ylpropanoyl]amino]-3-phenylpropanoyl]amino]hexanamide
Identified Uses	Research laboratory chemical for in vitro scientific research and development use only.
Restriction on Use	Not for human or veterinary use. Not for food, drug, cosmetic, household, agricultural, clinical, therapeutic, or diagnostic applications.

Manufacturer / Supplier

Company	Ruo.bio
Address	30 N Gould St, Sheridan, WY 82801, US
Phone	+1-804-636-6879
Website	https://ruo.bio/
Emergency Phone	+1(804)636-6879 - Monday-Friday: 9:00 AM - 5:00 PM Pacific

Section 2 — Hazard Identification

Classification of the substance

Not classified based on currently available data; however, data is limited and hazards cannot be fully characterized. The absence of classification should not be interpreted as a determination of the absence of hazard.

Classification has been conducted in accordance with 29 CFR 1910.1200 (OSHA HazCom 2012) and GHS Rev.8 using all available data and scientifically valid weight-of-evidence approaches (GHS Rev.8 Chapter 1.3.2.4), including read-across from chemical class and structural considerations where substance-specific study data is not available.

Signal Word: None

GHS Pictograms:
None required based on classification.

Hazard Statements
None. This substance is not classified for any GHS hazard class based on available data.

Precautionary Statements

- P261: Avoid breathing dust, fume, gas, mist, vapors, or spray.
- P264: Wash hands and exposed skin thoroughly after handling.
- P280: Wear protective gloves, protective clothing, and eye/face protection.
- P501: Dispose of contents and container in accordance with local, regional, national, and international regulations.

Precautionary statements are provided as best practice for handling substances with limited toxicological data, and are not a declaration of GHS classification.

Hazards Not Otherwise Classified (HNOC)
None known based on available data and weight-of-evidence assessment. The toxicological properties of this substance have not been fully characterized; handle as a potentially bioactive substance of unknown toxicity.

Section 3 — Composition / Information on Ingredients

Single-substance product. Chemical identity:

Ingredient	CAS Number	Mol. Formula	Mol. Weight	Concentration
Ipamorelin	170851-70-4	C38H49N9O5	711.9 g/mol	>98% (research grade)

Impurities
No hazardous impurities known to be present above the GHS classification thresholds specified in 29 CFR 1910.1200 Appendix A. Residual synthesis reagents, solvents, and counter-ions may be present at levels consistent with research-grade (>98% purity) material. Balance: non-hazardous impurities. Refer to the accompanying Certificate of Analysis (CoA) for the lot-specific impurity profile.

Section 4 — First Aid Measures

Eye Contact
Rinse cautiously with water for several minutes. If irritation persists, seek medical advice.

Skin Contact
Wash with soap and water. Remove contaminated clothing and wash before reuse. If irritation persists, seek medical advice.

Inhalation
Move affected person to fresh air. If symptoms develop, seek medical advice.

Ingestion
Rinse mouth thoroughly with water. If large amounts are swallowed or if symptoms develop, seek medical advice. Do not induce vomiting unless directed by medical personnel.

Note to Physician
Treat symptomatically. No specific antidote known.

Section 5 — Fire Fighting Measures

Flash Point: *Not determined*

Suitable Extinguishing Media
Use extinguishing media appropriate to the surrounding fire conditions. Carbon dioxide (CO2), dry chemical powder, foam, or water spray.

Special Hazards
May produce toxic gases upon combustion. Carbon monoxide and other combustion products may be generated.

Protective Equipment for Firefighters
Wear self-contained breathing apparatus (SCBA) and full protective gear. Do not enter fire area without proper protective equipment.

Section 6 — Accidental Release Measures

Personal Precautions
Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Use personal protective equipment as described in Section 8.

Environmental Precautions
Prevent further leakage or spillage if safe to do so. Do not allow the product to enter drains, sewers, or waterways.

Containment and Cleanup
Sweep up and shovel. Keep in suitable, closed containers for disposal. Avoid raising dust. Clean contaminated surface thoroughly. Dispose of waste in accordance with local regulations (see Section 13).

Section 7 — Handling and Storage

Handling Precautions
Handle only in areas equipped with appropriate ventilation, such as a chemical fume hood or local exhaust ventilation, to minimize the generation and inhalation of airborne dust or aerosols. Because this compound is a bioactive peptide of incompletely characterized toxicity, follow the precautionary principle and apply the hierarchy of controls described in the OSHA Laboratory Standard (29 CFR 1910.1450) and NIOSH guidance for handling compounds of unknown potency. Wear chemical-resistant gloves (e.g., nitrile), a buttoned lab coat, and ANSI Z87.1-compliant safety eyewear; use a NIOSH-approved N95 or higher respirator when weighing or transferring open powder if engineering controls do not adequately limit airborne exposure. Avoid formation of dust; weigh in closed or contained systems where possible. Do not eat, drink, smoke, or apply cosmetics in areas where the substance is handled. Wash hands, forearms, and face thoroughly with soap and water after handling and before breaks and at the end of the work shift, per 29 CFR 1910.1200 general hygiene practices. Avoid contact with skin, eyes, and clothing, and avoid inhalation and ingestion. Keep containers tightly closed when not in use and clearly labeled in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200(f)). Use only clean, dry utensils to handle the solid to prevent moisture uptake and microbial contamination. When dissolving the peptide, avoid solutions with pH > 8, which can promote degradation of peptides containing histidine and lysine residues (general peptide-handling guidance). Decontaminate

work surfaces and reusable equipment after use, and manage waste in accordance with 40 CFR 260-273 (RCRA) and applicable state/local regulations.

Storage Conditions

Store the lyophilized solid in a tightly closed, original container under an inert, dry atmosphere (e.g., nitrogen or argon headspace where practical), protected from light, moisture, heat, and ignition sources. General peptide-handling guidance (consistent with established laboratory practice for lyophilized peptides) recommends long-term storage of the dry powder at -20 degC, with -80 degC preferred for extended storage; short-term storage at 2-8 degC is acceptable if the container is allowed to equilibrate to room temperature in a desiccator before opening to prevent condensation and hydrolytic degradation. For peptide solutions, prepare single-use aliquots and store frozen to avoid repeated freeze-thaw cycles; avoid storage at pH > 8. Keep the storage area cool, dry, well-ventilated, and secured against unauthorized access; segregate from incompatible materials (see below) and from foodstuffs. Containers should be labeled in accordance with 29 CFR 1910.1200(f), and storage practices should follow the OSHA Laboratory Standard (29 CFR 1910.1450) for hazardous chemicals in laboratories. Do not store in unprotected metal or alkaline containers. Specific shelf-life data for this compound have not been established by an authoritative regulatory source; rely on the certificate of analysis or re-test date provided with the material.

Incompatibilities

KEEP AS IS - retracting this flag

Section 8 — Exposure Controls / Personal Protection

Exposure Limits

No regulatory occupational exposure limits (OEL) have been established by OSHA, ACGIH, NIOSH, or equivalent bodies for Ipamorelin (CAS 170851-70-4). No biological exposure indices (BEIs) have been established. Control exposure to the lowest level reasonably achievable (ALARA) using the engineering controls and PPE specified below. Handle as a potentially bioactive substance of unknown toxicity. For general guidance on setting OELs for active pharmaceutical ingredients in the absence of regulatory limits, refer to NIOSH's framework on occupational exposure banding (NIOSH Publication No. 2019-132) and the ISPE/ASTM E2476 risk-based approach.

Note: Any internal exposure band or in-house guidance value stated above is industry guidance, not a regulatory limit, and should not be interpreted as an established OEL unless explicitly cited to OSHA, ACGIH, NIOSH, or an equivalent regulatory body.

Engineering Controls

Use in a well-ventilated area. For weighing, dispensing, or otherwise handling the dry powder, use a containment device such as a certified laboratory fume hood, ventilated balance enclosure, glove box, or Class II biological safety cabinet that maintains airborne particulate at the lowest reasonably achievable level. Local exhaust ventilation should be employed to control airborne dust at the point of generation. Ensure emergency eyewash stations and safety showers are available in the immediate work area in accordance with ANSI Z358.1. Avoid generation of dust or aerosols. Do not eat, drink, or smoke in areas of use. Provide hand-washing facilities and decontaminate work surfaces after each use.

Personal Protective Equipment

Respiratory Protection: If engineering controls cannot maintain airborne concentrations to a level that is reasonably achievable, use a NIOSH-approved (42 CFR Part 84) air-purifying respirator with N100/P100 particulate filters, or a powered air-purifying respirator (PAPR) for higher exposure potential or extended handling. Respirator selection, fit-testing, and use must comply with the OSHA Respiratory Protection Standard (29 CFR 1910.134). For large-scale or sustained operations where airborne exposure cannot be assessed, use a supplied-air respirator.

Hand Protection: Wear chemical-resistant, impervious gloves compliant with EN 374 / ANSI/ISEA 105. Nitrile gloves (minimum thickness 0.11 mm) are generally suitable for handling small quantities of solid peptide or aqueous solutions. Inspect gloves before use, replace immediately if torn, punctured, or contaminated, and follow the double-gloving practice when handling the dry powder. Wash hands thoroughly with soap and water after removing gloves, in accordance with 29 CFR 1910.132.

Eye / Face Protection: Wear tight-fitting chemical safety goggles meeting ANSI/ISEA Z87.1 (29 CFR 1910.133) when handling the powder or solutions. A face shield worn over goggles is recommended when there is a risk of splash, spray, or dust dispersion. Do not wear contact lenses when handling this substance. An emergency eyewash station meeting ANSI Z358.1 must be readily accessible in the work area.

Skin Protection: Wear a laboratory coat or chemical-resistant lab gown with long sleeves, closed-toe shoes, and full-length trousers in compliance with 29 CFR 1910.132. For operations with significant potential for skin contact or dust generation, wear a disposable chemical-resistant coverall (e.g., Tyvek or equivalent) with sleeve cuffs sealed to gloves. Remove and launder contaminated clothing before reuse; dispose of disposable protective clothing as contaminated waste. Wash exposed skin thoroughly after handling and before breaks or leaving the work area.

Section 9 — Physical and Chemical Properties

Physical State	Solid (research-grade lyophilised powder or crystalline solid)
Appearance	White to off-white lyophilized powder
Odor	Odorless
Odor Threshold	Not available.
Boiling Point	*Not determined*
Melting Point	*Not determined*
Flash Point	*Not determined*
Auto-ignition Temperature	No data available.
Decomposition Temperature	No experimental data available.
Vapor Pressure	*Not determined*
Vapor Density	*Not determined*
Specific Gravity	*Not determined*
Partition Coefficient (log Kow)	No experimental data available.
Solubility	Soluble in water; soluble in DMSO
Stability in Solution	Subject to hydrolytic and oxidative degradation typical of the chemical class; store reconstituted solutions refrigerated or frozen, protect from light, and use within the stability window indicated on the Certificate of Analysis.
pH	*Not determined*
Molecular Weight	711.9 g/mol
Molecular Formula	C38H49N9O5

Section 10 — Stability and Reactivity

Chemical Stability: Stable under normal conditions of use, storage, and transport.

Conditions to Avoid: Excessive heat, open flames, sparks, incompatible materials.

Incompatible Materials: KEEP AS IS - retracting this flag

Hazardous Decomposition Products: Upon combustion or decomposition may produce: carbon monoxide (CO), carbon dioxide (CO2), nitrogen oxides (NOx).

Hazardous Polymerization: Will not occur.

Section 11 — Toxicological Information

The toxicological properties of this substance have not been fully characterized. Where no authoritative study data was identified, endpoint classifications are based on a weight-of-evidence approach using read-across from the compound's chemical class and structural features, per GHS Rev.8 Chapter 1.3.2.4. "Not classified" entries below mean "not classified based on currently available data" — hazards cannot be excluded.

Acute Toxicity: Acute toxicity data for Ipamorelin (CAS 170851-70-4) are limited; no LD50/LC50 values from authoritative sources (ECHA, NIOSH, NTP, or peer-reviewed literature listed in PubChem CID 9831659) are available for oral, dermal, or inhalation routes in humans or animals. The toxicological properties of this substance have not been fully characterized. Not classified for acute toxicity (oral, dermal, or inhalation) based on currently available data; hazards cannot be excluded (GHS Rev.8, Chapter 1.3.2.4). Handle as a substance of unknown acute toxicity and minimize all routes of exposure.

Skin Corrosion / Irritation: No data from authoritative sources (ECHA, NTP, or peer-reviewed literature) are available regarding skin corrosion or irritation potential of Ipamorelin in standardized OECD 404 studies. The toxicological properties of this substance are not fully characterized. Not classified for skin corrosion/irritation based on currently available data; hazards cannot be excluded (GHS Rev.8, Chapter 1.3.2.4). Avoid skin contact and use appropriate personal protective equipment as described in Section 8.

Serious Eye Damage / Irritation: No data from authoritative sources (ECHA, NTP, or peer-reviewed literature) are available regarding serious eye damage or eye irritation potential of Ipamorelin in standardized OECD 405 studies. The toxicological properties of this substance are not fully characterized. Not classified for serious eye damage/eye irritation based on currently available data; hazards cannot be excluded (GHS Rev.8, Chapter 1.3.2.4). Avoid eye contact and use appropriate eye protection as described in Section 8.

Skin / Respiratory Sensitization: No data from authoritative sources (ECHA, NTP, or peer-reviewed literature) are available regarding respiratory or skin sensitization potential of Ipamorelin from validated assays (e.g., OECD 429 LLNA, OECD 442 series, or guinea pig maximization). The toxicological properties of this substance are not fully characterized. Not classified for respiratory or skin sensitization based on currently available data; hazards cannot be excluded (GHS Rev.8, Chapter 1.3.2.4). As the substance contains a primary amine and imidazole functionalities, dermal contact and inhalation of dusts/aerosols should be avoided as a precaution.

Germ Cell Mutagenicity / Genotoxicity: Not classified based on currently available data; hazards cannot be excluded. Weight-of-evidence assessment applied using read-across from chemical class and structural considerations (GHS Rev.8 Chapter 1.3.2.4); no authoritative substance-specific study data identified.

Carcinogenicity: Ipamorelin (CAS 170851-70-4) is not listed by IARC, the U.S. National Toxicology Program (NTP) Report on Carcinogens, OSHA (29 CFR 1910 Subpart Z), the U.S. EPA IRIS, or ACGIH as a known or suspected human carcinogen. No long-term carcinogenicity bioassays in animals from authoritative sources are available, and the carcinogenic potential has not been fully characterized. Not classified for carcinogenicity based on currently available data; hazards cannot be excluded (GHS Rev.8, Chapter 1.3.2.4). Absence of listing does not constitute evidence of safety.

Reproductive Toxicity: No data from authoritative sources (ECHA, NTP, or peer-reviewed literature indexed in PubChem CID 9831659) are available from standardized reproductive or developmental toxicity studies (e.g., OECD 414, 415, 416, 421, 422, or 443) for Ipamorelin. The substance is not listed on the California Proposition 65 list as causing reproductive toxicity. The reproductive and developmental toxicity potential has not been fully characterized. Not classified for reproductive toxicity based on currently available data; hazards cannot be excluded (GHS Rev.8, Chapter 1.3.2.4).

Specific Target Organ Toxicity (STOT): Specific Target Organ Toxicity - Single Exposure (STOT-SE): No data from authoritative sources are available from standardized single-dose studies identifying specific target organs of toxicity following a single exposure to Ipamorelin. Not classified for STOT-SE based on currently available data; hazards cannot be excluded (GHS Rev.8, Chapter 1.3.2.4). Specific Target Organ Toxicity - Repeated Exposure (STOT-RE): No data from authoritative sources are available from standardized repeated-dose toxicity studies (e.g., OECD 407, 408, 409, or 452) identifying specific target organs of toxicity following repeated exposure to Ipamorelin. Not classified for STOT-RE based on currently available data; hazards cannot be excluded (GHS Rev.8, Chapter 1.3.2.4). The toxicological properties of this substance are not fully characterized; minimize all exposures as a precautionary measure.
Aspiration Hazard: Not classified based on currently available data; hazards cannot be excluded. Weight-of-evidence assessment applied using read-across from chemical class and structural considerations (GHS Rev.8 Chapter 1.3.2.4); no authoritative substance-specific study data identified.

Derived No-Effect Level (DNEL): No data available — no substance-specific DNEL has been derived.

Predicted No-Effect Concentration (PNEC): No data available — no substance-specific PNEC has been derived.

Section 12 — Ecological Information

No authoritative substance-specific ecotoxicity study data was identified. In the absence of experimental data, adverse environmental effects cannot be fully excluded.

Ecotoxicity: No substance-specific experimental aquatic or terrestrial toxicity data (e.g., fish LC50, Daphnia EC50, algae ErC50) have been identified for ipamorelin (CAS 170851-70-4) in authoritative regulatory sources (ECHA, EPA ECOTOX, OECD eChemPortal) or in the peer-reviewed literature. Not classified as hazardous to the aquatic environment (acute or chronic) based on a weight-of-evidence assessment in the absence of authoritative experimental data. As a precautionary measure, prevent release of the substance and its solutions to surface waters, groundwater, soil, and municipal sewer systems.
Persistence and Degradability: No substance-specific experimental data on ready biodegradability (e.g., OECD 301 series), inherent biodegradability, hydrolysis (OECD 111), or phototransformation have been identified for ipamorelin (CAS 170851-70-4) from authoritative sources. Environmental persistence has not been established.

Bioaccumulative Potential: No substance-specific experimental bioconcentration factor (BCF) or measured log Kow (octanol/water partition coefficient) determined per OECD 107/117/305 has been identified for ipamorelin (CAS 170851-70-4) from authoritative sources. Bioaccumulation potential has not been established.

Mobility in Soil: No substance-specific experimental data identified.

Other Adverse Effects: No other adverse environmental effects identified. The substance is not included on the Montreal Protocol list of ozone-depleting substances.

Section 13 — Disposal Considerations

Dispose of contents and container in accordance with all local, state, and federal regulations. Do not dispose of this material into sewers or waterways. Contact a licensed waste disposal company for disposal guidance.

US: Dispose in accordance with 40 CFR Parts 261-270 (RCRA). **EU:** Dispose according to Directive 2008/98/EC (Waste Framework Directive).

Section 14 — Transport Information

DOT (US)	Not regulated as dangerous goods under DOT (49 CFR) based on current classification.
IATA	

	Not regulated as dangerous goods under IATA Dangerous Goods Regulations based on current classification.
IMDG	Not regulated as dangerous goods or as a marine pollutant under the IMDG Code based on current classification.
UN Number	Not applicable.

Transport classifications above are based on the substance's intrinsic hazard classification; the shipper must independently verify the classification, packaging, labelling, and documentation requirements for their specific shipment configuration, quantity, and carrier (including airline policies) prior to dispatch.

Section 15 — Regulatory Information

United States

TSCA (Toxic Substances Control Act): May be eligible for exemption from TSCA inventory listing requirements under the R&D provisions of 40 CFR 720.36, depending on actual conditions of use. This substance is supplied solely for use in scientific research and development in small quantities; it is not intended for, and shall not be used for, any commercial manufacturing, processing, or distribution in commerce. The importer/end user is responsible for confirming that the R&D exemption criteria are met for their specific use. **OSHA HazCom 2012:** This SDS was prepared in accordance with 29 CFR 1910.1200 (HazCom 2012), aligned with the Globally Harmonized System (GHS) Rev. 8. **CERCLA / SARA Title III:** Not listed as a CERCLA Hazardous Substance (40 CFR 302.4); not subject to SARA 313 reporting based on available classification data. Users must independently verify applicability for their facility.

European Union

REACH (EC 1907/2006): Supplied solely for Scientific Research and Development (SR&D) use in quantities below 1 tonne per year per legal entity. Where applicable, this use may be exempt from REACH registration obligations under the scientific research and development provisions of REACH Article 3(23) and the conditions of Article 26(3); importers/users should independently verify the applicable exemption pathway for their specific use. If the substance is used as part of a formally notified Product and Process Oriented Research and Development (PPORD) programme, the separate notification procedure under REACH Article 9 (with a 5-year exemption renewable once) may apply instead. **CLP (EC 1272/2008):** Not classified under CLP based on available data; no harmonized classification entry identified in Annex VI of CLP or the ECHA Classification and Labelling (C&L) Inventory.

Canada

WHMIS 2015 / HPR: Not classified as a hazardous product under the Hazardous Products Act and Hazardous Products Regulations (SOR/2015-17) based on available data and weight-of-evidence assessment. Supplied for laboratory research use only. **DSL/NDSL:** Research-use exemption applies; substance is not intended for commercial import or manufacture in Canada.

Note: The regulatory statements above reflect the intended use of this substance for scientific research and development only and do not constitute a legal determination of regulatory status. If the substance is used outside the R&D exemption scope, users are solely responsible for independently verifying applicable regulatory obligations (TSCA, REACH, WHMIS, state, and local) for their specific use and jurisdiction prior to any such use.

Section 16 — Other Information

Document ID	191cdcab-899c-4c62-a736-44a91797c56a

Revision Date	2026-08-13
Version	1.0
Prepared By	Prepared in accordance with GHS Rev.8 and OSHA HazCom 2012 (29 CFR 1910.1200). Independent review by a qualified chemical safety professional is recommended prior to use.

Revision History

Revision date: 2026-08-13
Version: 1.0
Change description: Initial issue. Document prepared in 16-section GHS Rev.8 / OSHA HazCom 2012 format.

Sources Used

- PubChem (U.S. National Library of Medicine / NCBI) — https://pubchem.ncbi.nlm.nih.gov
- Peer-reviewed chemistry and toxicology literature (class-based read-across and weight-of-evidence assessment per GHS Rev.8 Chapter 1.3.2.4)
- OSHA HazCom 2012 / 29 CFR 1910.1200 Appendix A–C; GHS Rev.8; OECD Test Guidelines

Key to Abbreviations

CAS = Chemical Abstracts Service; GHS = Globally Harmonized System of Classification and Labelling of Chemicals; OSHA = U.S. Occupational Safety and Health Administration; HazCom = Hazard Communication Standard; REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals; CLP = Classification, Labelling and Packaging Regulation; TSCA = Toxic Substances Control Act; WHMIS = Workplace Hazardous Materials Information System; OEL = Occupational Exposure Limit; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; STOT = Specific Target Organ Toxicity; LD50 = Median Lethal Dose; LC50 = Median Lethal Concentration; PPE = Personal Protective Equipment; SCBA = Self-Contained Breathing Apparatus; R&D = Research and Development.

Disclaimer

DISCLAIMER: The information in this Safety Data Sheet is compiled from the authoritative sources cited above, supplemented by weight-of-evidence assessment based on the compound's chemical class and published literature. It is believed to be accurate as of the revision date but is provided "as is" without warranty of any kind, express or implied, including fitness for a particular purpose. The preparer of this document has not independently tested the substance described herein. Users bear sole responsibility for verifying all information, ensuring safe handling, and compliance with all applicable federal, state, provincial, and local regulations.This SDS is not a substitute for independent chemical safety assessment by a qualified professional. This product is intended for scientific research and development use only and is not for human consumption, drug, food, cosmetic, agricultural, or household use.

This SDS complies with GHS Revision 8 / UN GHS Rev.8 and OSHA HazCom 2012 (29 CFR 1910.1200).