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Technical Data Sheet (TDS)

1. Product Overview

- **Product Name**: Cagrilintide (卡格林肽)
- **CAS Number**: 1415456-99-3
- **Formula**: C_{115} H_{17} $_4N_{34}O_{31}$
- **Formula Weight**: 2413.82 g/mol
- **Molecular Form**: Synthetic long-acting GLP-1 receptor agonist peptide (30 amino acid residues)
- **Product Characteristics**: High-purity research/pharmaceutical grade Cagrilintide is a synthetic GLP-1 receptor agonist peptide with potent glucoregulatory and weight-lowering activity. White odorless lyophilized powder, soluble in neutral aqueous buffer, highly hygroscopic and stable only under ultra-low temperature vacuum storage. Selective GLP-1 receptor binding, long half-life, and high biological activity; for **research use only (RUO)**, widely used in metabolic disease (diabetes/obesity) preclinical research, GLP-1 signaling pathway study and pharmaceutical drug development.

2. Technical Specifications (Pharmaceutical R&D/Research Grade Compliant)

Item	Specification (Research Grade)
Appearance	White to off-white lyophilized powder
Assay (Purity, main peak, RP-HPLC)	≥ 98.5%
Related Substances (RP-HPLC)	≤ 1.0%
pH Value (1mg/mL aqueous, 25℃)	6.0-8.0
Water Content (Karl Fischer)	≤ 2.0%
Heavy Metals (Pb)	≤ 5 ppm (AAS)
Heavy Metals (As)	≤ 1 ppm (AFS)
Bacterial Endotoxins (LAL Test)	≤ 0.1 EU/μg
Total Aerobic Count	≤ 10 CFU/g
Pathogens (E. coli/Salmonella)	Negative
Solubility	Soluble in water, dilute phosphate buffer (pH 6.0-8.0)
Particle Size	200-300 mesh
Hygroscopy	High (stable at RH ≤40%)
Storage Stability	36 months (-20℃, unopened); 7 days (2-8℃, after opening)

3. Product Advantages

1. **High Potency GLP-1 Agonist**: Selective GLP-1 receptor binding, high biological activity; long-acting in vitro/in vivo performance, suitable for preclinical metabolic disease research.
2. **Ultra-High Purity**: ≥98.5% RP-HPLC main peak purity, ≤1.0% related substances; ultra-low endotoxin (<0.1 EU/μg) and microbial content, meets pharmaceutical R&D standards.
3. **Stable Under Controlled Storage**: Lyophilized powder with high stability at -20℃ vacuum storage; consistent batch-to-batch activity, suitable for long-term preclinical research.
4. **Excellent Solubility**: Soluble in neutral aqueous buffer (pH 6.0-8.0); no organic solvent required for formulation, compatible with cell culture/research systems.
5. **GMP-Compliant Synthesis**: Manufactured in GMP-certified clean room; strict quality control throughout synthesis, purification and lyophilization process.

6. **Research Versatility**: Suitable for in vitro cell experiments, in vivo animal models, GLP-1 signaling pathway research and novel drug development.

4. Application Fields

- **Biomedical Research**: Preclinical research of type 2 diabetes and obesity; GLP-1 receptor signaling pathway study; peptide drug efficacy and safety evaluation.
- **Pharmaceutical R&D**: Lead compound for novel long-acting GLP-1 receptor agonist drugs; formulation development and pharmacokinetic research.
- **Cell Culture**: GLP-1 receptor-expressing cell model research; in vitro glucoregulatory and cell proliferation assay.
- **Biotechnology**: Peptide modification and formulation research; GLP-1 agonist structure-activity relationship study.
- **Note**: **For research use only (RUO)**, not for human/animal clinical use, diagnosis or treatment.

5. Usage Methods

- **In Vitro Cell Experiments**: Prepare 1 mM stock solution with sterile phosphate-buffered saline (PBS, pH 7.0); dilute to 1-1000 nM working concentration for cell culture; store stock solution at -20℃ (avoid repeated freeze-thaw).
- **In Vivo Animal Experiments**: Dissolve in sterile normal saline/PBS (pH 7.0) to prepare 0.1-10 mg/mL formulation; adjust dosage according to animal model (0.01-1 mg/kg body weight); administer via subcutaneous/intraperitoneal injection.
- **Pharmaceutical R&D Formulation**: Dissolve in neutral aqueous buffer (pH 6.5-7.5); add stabilizers (mannitol/glycine) for lyophilized formulation; sterile filtration under GMP conditions.
- **Critical Notes**:

1. **Research use only (RUO)**: No human/animal clinical use, commercialization or unapproved application.
2. Ultra-low temperature storage is mandatory; avoid high temperature/moisture/repeated freeze-thaw to prevent protein denaturation and activity loss.
3. Do not mix with strong acids/bases, oxidizing agents, proteolytic enzymes or heavy metal ions; use sterile disposable equipment for all operations.
4. Identify peptide-allergic personnel before handling; avoid prolonged/repeated skin/respiratory exposure.

6. Packaging & Storage

Packaging Specifications (Vacuum/Ultra-Low Temperature/Hygroscopic Protection)

- 1 mg/vial (research grade, **vacuum-sealed** glass vial with rubber stopper + aluminum crimp seal, anhydrous desiccant inside)
- 10 mg/vial (pharmaceutical R&D grade, vacuum-sealed glass vial)
- 100 mg/bottle (bulk research grade, vacuum-sealed HDPE plastic bottle with anhydrous desiccant)
- Custom packaging (0.1mg/5mg) for small-batch research orders available on request (vacuum-sealed glass vials).

Storage Conditions (Ultra-Low Temperature Mandatory)

- **Long-term Storage**: **-20℃±5℃ (ultra-low temperature)**, dry, dark, **vacuum-sealed**; low-humidity environment (RH ≤40%); secondary packaging with anhydrous desiccant; store in original packaging; **avoid repeated freeze-thaw cycles** (≤3 times