



PeptideProtocolPortal

COMPLETE GLP RECONSTITUTION & DOSING GUIDE

GLP-1CG · GLP-1MZ · GLP-1SG · GLP-1SV · GLP-2TZ · GLP-3RT

Cagrilintide · Mazdutide · Semaglutide · Survodutide · Tirzepatide · Retatrutide

Reconstitution Calculator · Titration Protocol · Storage & Handling · For Licensed Healthcare Professionals Only

CLINICAL PROTOCOLS. PRECISION DOSING.



GLP-1CG
Cagrilintide
5mg & 10mg



GLP-1MZ
Mazdutide
10mg



GLP-1SG
Semaglutide
5mg · 10mg · 30mg



GLP-1SV
Surdutide
10mg



GLP-2TZ
Tirzepatide
5mg – 60mg



GLP-3RT
Retatrutide
5mg – 60mg

Supplies Required for Reconstitution

- Lyophilized peptide vial (as labeled)
- Bacteriostatic Water (BAC water) for injection
- Alcohol swabs — 70% isopropyl
- Sterile reconstitution syringe (1–5 mL)
- Sterile needle — 25–27 gauge recommended
- Insulin syringes for dosing — 29–31 gauge, U-100

Step-by-Step Reconstitution Protocol

#	Action	Clinical Note
1	Wash hands thoroughly. Assemble supplies on a clean surface.	Use a sterile field where possible
2	Wipe the vial septum with a 70% isopropyl alcohol swab. Allow to dry 30 seconds.	Never blow on swabbed surface
3	Draw up the required volume of BAC water (see Reconstitution Calculator below).	See per-product table for volumes
4	Insert needle at a 45° angle and inject BAC water slowly down the <i>inside wall</i> of the vial — never spray directly onto the powder.	Slow injection preserves peptide integrity
5	Gently swirl or roll the vial between palms until powder is fully dissolved. Do NOT shake.	Shaking denatures peptide — never vortex
6	Inspect the solution. It should be clear and colorless (or faint yellow). Discard if cloudy, particulate, or discolored.	Do not use if appearance is abnormal
7	Label vial with date reconstituted. Refrigerate immediately at 36–46°F (2–8°C).	Do not freeze reconstituted solution
8	Use a fresh insulin syringe for each dose draw using the Dosing Calculator below.	One needle per vial entry — discard after use

Reconstitution Calculator by Vial Size

Formula: Peptide (mg) ÷ BAC Water Volume (mL) = Concentration (mg/mL) | Units to Draw = Desired Dose (mg) ÷ Concentration × 100

Product	Vial Size	BAC Water Added	Concentration	Dose per 0.1 mL (10 units)
GLP-1CG · CAGRILINTIDE (Long-Acting Amylin Analog SC Weekly)				
GLP-1CG	5 mg	2.5 mL	2 mg/mL	0.20 mg
GLP-1CG	5 mg	5.0 mL	1 mg/mL	0.10 mg
GLP-1CG	10 mg	2.5 mL	4 mg/mL	0.40 mg
GLP-1CG	10 mg	5.0 mL	2 mg/mL	0.20 mg
GLP-1MZ · MAZDUTIDE (GLP-1/Glucagon Dual Agonist SC Weekly)				
GLP-1MZ	10 mg	2.0 mL	5 mg/mL	0.50 mg

Product	Vial Size	BAC Water Added	Concentration	Dose per 0.1 mL (10 units)
GLP-1MZ	10 mg	3.3 mL	3 mg/mL	0.30 mg
GLP-1SG · SEMAGLUTIDE (GLP-1 Agonist SC Weekly)				
GLP-1SG	5 mg	2.0 mL	2.5 mg/mL	0.25 mg
GLP-1SG	5 mg	2.5 mL	2.0 mg/mL	0.20 mg
GLP-1SG	10 mg	2.0 mL	5 mg/mL	0.50 mg
GLP-1SG	10 mg	4.0 mL	2.5 mg/mL	0.25 mg
GLP-1SG	30 mg	6.0 mL	5 mg/mL	0.50 mg
GLP-1SG	30 mg	10.0 mL	3 mg/mL	0.30 mg
GLP-1SV · SURVODUTIDE (GLP-1/Glucagon Dual Agonist SC Weekly)				
GLP-1SV	10 mg	2.5 mL	4 mg/mL	0.40 mg
GLP-1SV	10 mg	5.0 mL	2 mg/mL	0.20 mg
GLP-2TZ · TIRZEPATIDE (GIP/GLP-1 Dual Agonist SC Weekly)				
GLP-2TZ	5 mg	1.0 mL	5 mg/mL	0.50 mg
GLP-2TZ	5 mg	2.0 mL	2.5 mg/mL	0.25 mg
GLP-2TZ	10 mg	1.0 mL	10 mg/mL	1.0 mg
GLP-2TZ	10 mg	2.0 mL	5 mg/mL	0.50 mg
GLP-2TZ	15 mg	1.5 mL	10 mg/mL	1.0 mg
GLP-2TZ	15 mg	3.0 mL	5 mg/mL	0.50 mg
GLP-2TZ	30 mg	3.0 mL	10 mg/mL	1.0 mg
GLP-2TZ	30 mg	6.0 mL	5 mg/mL	0.50 mg
GLP-2TZ	60 mg	6.0 mL	10 mg/mL	1.0 mg
GLP-2TZ	60 mg	12.0 mL	5 mg/mL	0.50 mg
GLP-3RT · RETATRUTIDE (GLP-1/GIP/Glucagon Triple Agonist SC Weekly)				
GLP-3RT	5 mg	1.0 mL	5 mg/mL	0.50 mg
GLP-3RT	5 mg	2.5 mL	2 mg/mL	0.20 mg
GLP-3RT	10 mg	2.0 mL	5 mg/mL	0.50 mg
GLP-3RT	10 mg	4.0 mL	2.5 mg/mL	0.25 mg
GLP-3RT	15 mg	3.0 mL	5 mg/mL	0.50 mg
GLP-3RT	15 mg	5.0 mL	3 mg/mL	0.30 mg

Product	Vial Size	BAC Water Added	Concentration	Dose per 0.1 mL (10 units)
GLP-3RT	30 mg	6.0 mL	5 mg/mL	0.50 mg
GLP-3RT	30 mg	10.0 mL	3 mg/mL	0.30 mg
GLP-3RT	50 mg	5.0 mL	10 mg/mL	1.0 mg
GLP-3RT	50 mg	10.0 mL	5 mg/mL	0.50 mg
GLP-3RT	60 mg	6.0 mL	10 mg/mL	1.0 mg
GLP-3RT	60 mg	12.0 mL	5 mg/mL	0.50 mg

Insulin Syringe Dosing Calculator (Units to Draw)

Reference for U-100 insulin syringes (100 units = 1.0 mL). Find your dose in the left column, then read across to your concentration column.

GLP-1CG — Cagrilintide Units to Draw per Dose			
Weekly Dose	1 mg/mL (5mg vial + 5mL)	2 mg/mL (5mg + 2.5mL or 10mg + 5mL)	4 mg/mL (10mg + 2.5mL)
0.10 mg	10 units	5 units	2.5 units
0.30 mg	30 units	15 units	7.5 units
0.50 mg	50 units	25 units	12.5 units
0.70 mg	70 units	35 units	17.5 units
1.20 mg (max)	—	60 units	30 units

GLP-1MZ — Mazdutide Units to Draw per Dose		
Weekly Dose	3 mg/mL (10mg + 3.3mL)	5 mg/mL (10mg + 2mL)
1.5 mg	50 units	30 units
3.0 mg	100 units	60 units
4.5 mg	—	90 units
6.0 mg	—	—
9.0 mg (max)	—	—

△ Mazdutide at 6–9 mg requires 30 mg vials. Use 5mL BAC water → 6 mg/mL (100 units = 1.67 mg per draw) or 10mL → 3 mg/mL (200 units = 6 mg). Confirm vial label before use.

GLP-1SG — Semaglutide | Units to Draw per Dose

Weekly Dose	2 mg/mL (5mg + 2.5mL)	2.5 mg/mL (5mg + 2mL or 10mg + 4mL)	5 mg/mL (10mg + 2mL or 30mg + 6mL)	3 mg/mL (30mg + 10mL)
0.25 mg	12.5 units	10 units	5 units	8 units
0.50 mg	25 units	20 units	10 units	17 units
1.0 mg	50 units	40 units	20 units	33 units
1.7 mg	85 units	68 units	34 units	57 units
2.4 mg (max)	—	96 units	48 units	80 units

GLP-1SV — Survodutide | Units to Draw per Dose

Weekly Dose	2 mg/mL (10mg + 5mL)	4 mg/mL (10mg + 2.5mL)
0.30 mg	15 units	7.5 units
0.60 mg	30 units	15 units
1.20 mg	60 units	30 units
2.40 mg	—	60 units
3.60 mg (max)	—	90 units

GLP-2TZ — Tirzepatide | Units to Draw per Dose

Weekly Dose	2.5 mg/mL (5mg + 2mL)	5 mg/mL (various)	10 mg/mL (various)	20 mg/mL (60mg + 3mL)
2.5 mg	100 units	50 units	25 units	12.5 units
5.0 mg	—	100 units	50 units	25 units
7.5 mg	—	—	75 units	37.5 units
10.0 mg	—	—	100 units	50 units
12.5 mg	—	—	—	62.5 units
15.0 mg (max)	—	—	—	75 units

GLP-3RT — Retatrutide | Units to Draw per Dose

Weekly Dose	2 mg/mL (5mg + 2.5mL)	2.5 mg/mL (10mg + 4mL)	5 mg/mL (various)	10 mg/mL (50mg + 5mL or 60mg + 6mL)
0.5 mg	25 units	20 units	10 units	5 units
1.0 mg	50 units	40 units	20 units	10 units

Weekly Dose	2 mg/mL (5mg + 2.5mL)	2.5 mg/mL (10mg + 4mL)	5 mg/mL (various)	10 mg/mL (50mg + 5mL or 60mg + 6mL)
1.5 mg	75 units	60 units	30 units	15 units
2.0 mg	100 units	80 units	40 units	20 units
3.0 mg	—	—	60 units	30 units
4.0 mg (max)	—	—	80 units	40 units

Titration Protocol – All Products

Titrate no faster than every 4 weeks. Slower titration improves GI tolerability. Doses shown are weekly subcutaneous.

Week	GLP-1CG Cagrilintide	GLP-1MZ Mazdutide	GLP-1SG Semaglutide	GLP-1SV Survodutide	GLP-2TZ Tirzepatide	GLP-3RT Retatrutide
1–4	0.10 mg	1.5 mg	0.25 mg	0.30 mg	2.5 mg	0.5 mg
5–8	0.30 mg	3.0 mg	0.50 mg	0.60 mg	5.0 mg	1.0 mg
9–12	0.50 mg	4.5 mg	1.0 mg	1.2 mg	7.5 mg	1.5 mg
13–16	0.70 mg	6.0 mg	1.7 mg	2.4 mg	10.0 mg	2.0 mg
17–20	1.0 mg	7.5 mg	2.4 mg	3.0 mg	12.5 mg	3.0 mg
21+	1.2 mg †	9.0 mg †	2.4 mg †	3.6 mg †	15.0 mg †	4.0 mg †

† Maximum therapeutic dose. Always use lowest effective maintenance dose thereafter.

Phase	GLP-1CG	GLP-1MZ	GLP-1SG	GLP-1SV	GLP-2TZ	GLP-3RT
Therapeutic Dose	0.5–1.2 mg	6–9 mg	1.7–2.4 mg	2.4–3.6 mg	10–15 mg	2–4 mg
Maintenance Dose	0.1–0.3 mg	3–4.5 mg	0.5–1.0 mg	1.2–2.4 mg	2.5–5 mg	0.5–1.5 mg
Treatment Duration	6–12+ mo	6–12 mo	6–12 mo	6–12 mo	6–12 mo	6–12 mo
Washout (new course)	2–4 wks	4–6 wks	4–6 wks	4–6 wks	4–6 wks	4–6 wks
Expected Weight Loss	6–10% mono; 15–25%+ combo	15–20%	10–16%	15–18%	15–22%	20–25%

Storage & Stability – All Products

Condition	Lyophilized (Powder)	Reconstituted (Solution)
Refrigerated 36–46°F (2–8°C)	Up to 24 months*	28 days — RECOMMENDED
Room Temperature 68–77°F	3–6 months*	7 days maximum
Frozen	Acceptable for long-term storage	NEVER FREEZE reconstituted solution

Condition	Lyophilized (Powder)	Reconstituted (Solution)
Light Exposure	Store in original packaging or amber vials — protect from UV and direct light	

*Stability varies by manufacturer — always verify expiration date on vial label

Critical Handling & Safety Reminders

- **NEVER SHAKE** — Shaking denatures the peptide. Swirl gently or roll between palms only.
- **Bacteriostatic Water ONLY** — BAC water contains 0.9% benzyl alcohol. Sterile water lacks preservative and limits multi-dose stability to <24 hours.
- **Inject Along Vial Wall** — Dispense BAC water slowly down the inside wall, never directly onto the powder cake.
- **Inspect Before Use** — Solution must be clear and colorless (or faint yellow). Discard if cloudy, particulate, or abnormally colored.
- **One Needle Per Entry** — Use a fresh needle each time you enter the vial to maintain sterility.
- **Never Share Vials or Syringes** — Single-patient use only. Cross-contamination risk.
- **Rotate Injection Sites** — Abdomen, thigh, and upper arm; same day each week; minimum 2-inch separation from prior site.
- **Discard After 28 Days** — Do not use reconstituted vials beyond 28 days even if refrigerated.

Contraindications — All GLP Agents

- **Absolute:** Personal or family history of medullary thyroid carcinoma (MTC) or MEN2 syndrome; pregnancy; breastfeeding; active gallbladder disease (Cagrilintide/Survodutide/Mazdutide)
- **Relative:** Gastroparesis, history of pancreatitis, severe GERD, severe hepatic impairment, GI motility disorders, renal impairment (monitor closely)
- **Drug Interactions:** Reduce sulfonylurea or insulin dosing to prevent hypoglycemia in diabetic patients. Monitor oral medications with narrow therapeutic windows — GLP-1 agents slow gastric emptying and may alter absorption.

Quick Dosing Formula Reference

Step 1 — Determine Concentration: Peptide (mg) ÷ BAC Water (mL) = mg/mL

Step 2 — Calculate Units to Draw: Desired Dose (mg) ÷ Concentration (mg/mL) × 100 = Units on insulin syringe

Example A: 0.5 mg Semaglutide from 2.5 mg/mL solution → $0.5 \div 2.5 \times 100 = 20$ units

Example B: 5.0 mg Tirzepatide from 5 mg/mL solution → $5.0 \div 5.0 \times 100 = 100$ units (1.0 mL)

Example C: 0.3 mg Cagrilintide from 1 mg/mL solution → $0.3 \div 1.0 \times 100 = 30$ units

Product-Specific Clinical Notes

Product	Key Clinical Characteristics & Use Considerations
GLP-1CG Cagrilintide	Amylin analog — most effective when combined with GLP-1 agonist (semaglutide or tirzepatide). Synergistic combination produces 15–25%+ weight loss. Ideal for weight maintenance bridging and GLP-1 plateau rescue. Slower onset; excellent appetite suppression mechanism via hypothalamic pathways distinct from GLP-1.
GLP-1MZ Mazdutide	GLP-1/Glucagon dual agonist. Superior lean mass retention during weight loss — favorable for body recomposition goals. Thermogenic enhancement via glucagon receptor activation. Excellent for metabolic syndrome. Anticipated 15–20% total body weight loss. GI side effects generally mild to moderate.
GLP-1SG Semaglutide	Pure GLP-1 agonist — first-line agent, most extensive clinical data. 10–16% expected weight loss. Longest half-life of class (~7 days). Excellent cardiovascular safety profile. Standard for diabetes management and weight loss. Can add Cagrilintide or AOD-9604 at plateau. Consider biweekly dosing for maintenance.
GLP-1SV Survodutide	GLP-1/Glucagon dual agonist. Particularly effective for NASH/NAFLD — glucagon pathway enhances thermogenesis and promotes hepatic fat reduction. 15–18% weight loss. Consider for patients with visceral adiposity, elevated liver enzymes, or GLP-1 mono-therapy plateau. Monitor for increased GI side effects during titration.
GLP-2TZ Tirzepatide	GIP/GLP-1 dual agonist. GIP component often reduces GI side effect severity vs. pure GLP-1 agents. 15–22% weight loss expected. Dual mechanism provides enhanced insulin secretion, improved beta-cell function, and reduced food intake. Superior glycemic control. Excellent for T2DM with obesity. Can be combined with Cagrilintide for additive effect.
GLP-3RT Retatrutide	Triple agonist (GLP-1/GIP/Glucagon) — most potent weight loss agent available. 20–25% expected weight loss. Addresses all three metabolic pathways simultaneously. Enhanced thermogenesis via glucagon receptor. Strong visceral fat mobilization. Highest efficacy ceiling; titrate slowly to manage GI side effects. Next-generation metabolic therapy.

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This document is for educational purposes only and does not constitute medical advice. Reconstitution and administration of peptides must follow appropriate sterile technique and must only be performed by individuals lawfully authorized to handle such materials. Peptides referenced may constitute off-label or investigational use. Always exercise independent clinical judgment. Consult current literature and institutional protocols.

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