# AOD9604 — Research Summary

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## 1. What It Is

AOD9604 is a synthetic 16-amino-acid peptide fragment of human growth hormone (hGH), specifically the C-terminal fragment (Tyr-hGH177-191). It was engineered to isolate the fat-metabolizing ("lipolytic") region of the hGH molecule while excluding the portions responsible for hGH's growth-promoting and diabetogenic effects.

- **Origin:** Developed by Professor Frank Ng and colleagues at Monash University, Australia; later developed commercially by Metabolic Pharmaceuticals Limited (Melbourne).
- **Research focus:** obesity/fat metabolism, with a specifically "metabolic" (non-appetite-suppressing) proposed mechanism.

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## 2. Reported Effects in Research Literature — a mixed, unusually well-documented history

AOD9604 has one of the more extensive human clinical trial histories among RUO peptides, and the story is genuinely mixed — useful context for accurate customer-facing documentation.

- **Trial scale:** Six randomized, double-blind, placebo-controlled human clinical trials were conducted in the UK and Australia (2001–2007), involving roughly 925 patients total, plus two intravenous and two oral dosing pilot studies. Over $50 million was invested in its development.
- **Safety:** Across all human studies, AOD9604 was found to be safe and well tolerated, with no effect on serum IGF-1 levels (confirming it does not act via the IGF-1 pathway) and no evidence of adverse effects on glucose tolerance or insulin resistance typically associated with hGH.
- **Efficacy — early trials:** An early Phase II study (34 low-dose oral AOD9604 patients vs. 37 placebo, 12 weeks) reported statistically significant weight loss (~2kg more than placebo) and improved glucose tolerance, without the post-treatment weight rebound typical of other weight-loss drugs.
- **Efficacy — later, larger trials:** A subsequent Phase 2b trial in ~300 obese adults, and a follow-up ~500-patient study incorporating an intensive diet and exercise regimen, did **not** replicate the earlier weight-loss signal. A later program review concluded AOD9604 was ineffective for weight loss as a standalone intervention, while reaffirming it had no negative effect on carbohydrate metabolism.
- **Preclinical (animal):** Reported to reduce body fat gain in obese Zucker rats without affecting IGF-1 or insulin sensitivity, and to reduce body weight in obese mice — findings that did not fully translate to the larger human efficacy trials.

**Bottom line for documentation purposes:** AOD9604's safety data is unusually robust for an RUO peptide, but its efficacy signal for weight loss specifically is contested — early positive trials were not replicated in larger, later-stage studies.

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## 3. Clinical & Preclinical Study References


- Wittert GA, et al. "AOD9604, an orally active peptide for the treatment of obesity: Results of a phase 2b study." *Diabetes.* 2005;54.
- Herd C, et al. "The effect of AOD9604 on weight loss in obese adults: Results of a randomized, double-blind, placebo-controlled, multicenter study." *2005.*
- Stier H, Vos E, Kenley D. "Safety and tolerability of the hexadecapeptide AOD9604 in humans." *J Endocrinol Metab.* 2013. Full text

- Heffernan M, Summers RJ, Thorburn A, et al. “The effects of human GH and its lipolytic fragment (AOD9604) on lipid metabolism.” *Endocrinology.* 2001.
- Moré MI, et al. “Safety and Metabolism of AOD9604, a Novel Nutraceutical Ingredient for Improved Metabolic Health.” *J Endocrinol Metab*. Full text


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# 4. Reconstitution Process

*For research/laboratory handling purposes only.*

**Keep out of reach of children. Not for use by pregnant or nursing individuals. For laboratory research use by qualified personnel only.**

1. **Materials needed:** lyophilized (freeze-dried) AOD9604 powder, bacteriostatic water, alcohol swabs, syringe with needle.
2. **Bring the vial to room temperature** before reconstitution.
3. **Sanitize** the rubber stopper of both vials with an alcohol swab.
4. **Draw the bacteriostatic water** into the syringe.
5. **Add the water slowly** down the *inside wall* of the vial, to reduce shear/foaming.
6. **Do not shake.** Gently swirl or roll between palms until fully dissolved.
7. **Inspect the solution** — should be clear and free of particulates.
8. **Label the vial** with reconstitution date and concentration.
9. **Storage:** refrigerate (2–8°C); avoid freeze-thaw cycles.

### Reference: Bacteriostatic Water Volume by Vial Size

| Vial Size | BAC Water Added | Resulting Concentration |
|---|---|---|
| 5 mg | 1 mL | 5 mg/mL |
| 5 mg | 2 mL | 2.5 mg/mL |
| 5 mg | 5 mL | 1 mg/mL |
| 10 mg | 1 mL | 10 mg/mL |
| 10 mg | 2 mL | 5 mg/mL |
| 10 mg | 4 mL | 2.5 mg/mL |
| 10 mg | 5 mL | 2 mg/mL |
| 10 mg | 10 mL | 1 mg/mL |

**Notes:** Higher water volume = more dilute solution; lower volume = more concentrated. Always use bacteriostatic water (0.9% benzyl alcohol) for multi-draw vials; sterile water without preservative should be discarded within 24 hours.

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