

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.

2. Reported Effects in Research Literature

AOD9604 has one of the more extensive human clinical trial histories among RUO peptides, and the story is genuinely mixed:

- 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 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: 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.

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.

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*.

Regulatory/Safety Note: AOD9604 is not approved by the FDA for the diagnosis, treatment, cure, or prevention of any disease.

Verification Update: No new completed human trials were found beyond what's already cited. Some commercial sources mention early, non-peer-reviewed exploratory interest in cartilage/joint tissue repair as a separate research line — this is not well-established and was not added to the reference list.

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