



# Synergistic Effects of Vanoglipel and Metformin on Glycemic Control and Body Weight Reduction in a Diet-Induced Obese Mouse Model

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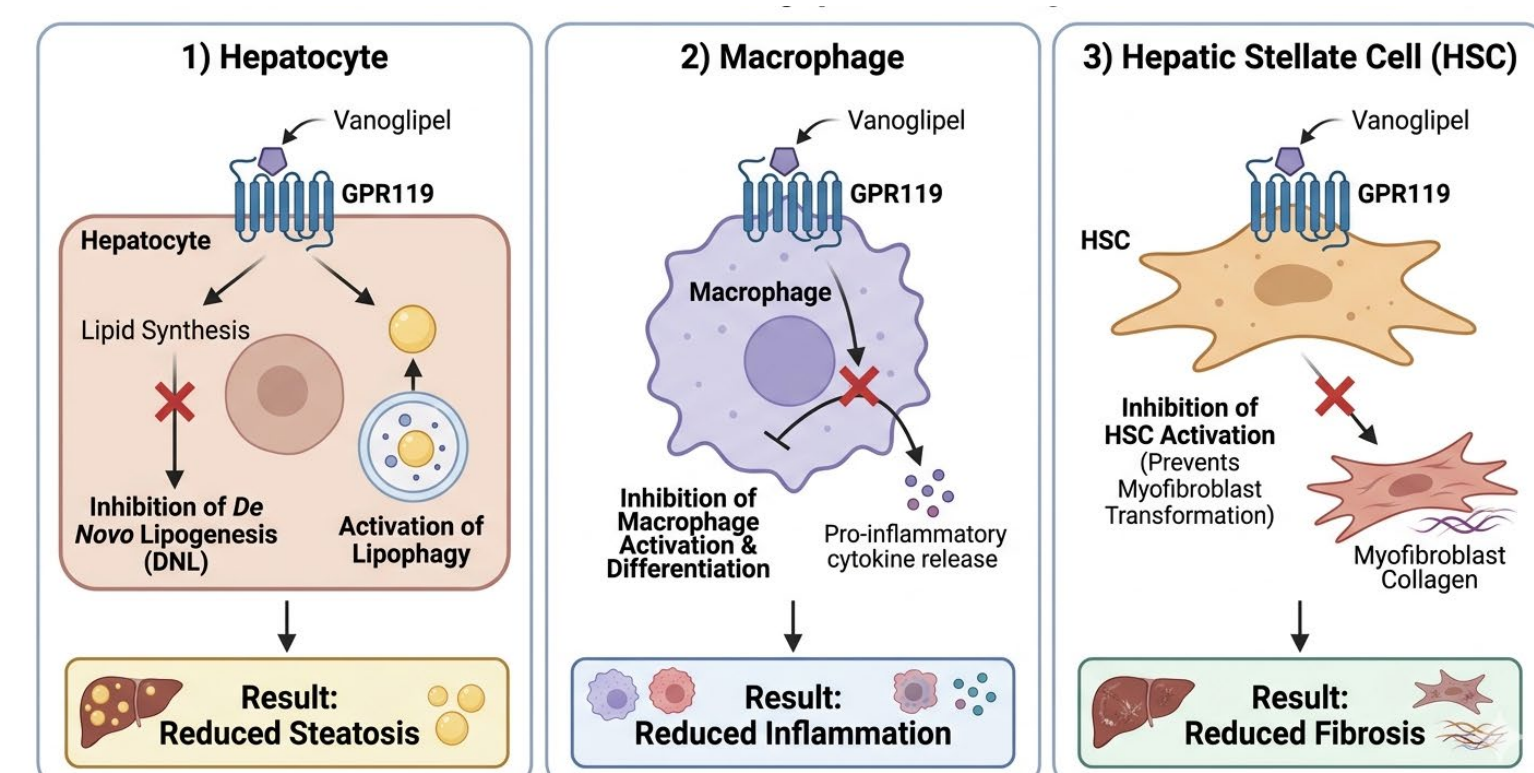
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Please refer to Poster 3043-LB for additional data on Vanoglipel

## BACKGROUND

- Vanoglipel (DA-1241), a first-in-class potential GPR119 agonist, successfully confirmed clinical PoC in T2D patients (Phase 1b, NCT03646721), followed by demonstrated hepatoprotective effects along with improved glucose and lipid control in presumed MASH patients in the US (Phase 2a, NCT06054815).



## OBJECTIVE

- To evaluate the efficacy of vanoglipel plus metformin in DIO mice with mild hyperglycemia
- To assess whether combination therapy confers enhanced glycemic and body weight benefits beyond either agent alone

## METHODS

### Animal Model & Study Design

Male C57BL/6J mice were fed a 60 kcal-% high-fat diet (HFD) for 17 weeks to induce obesity with mild hyperglycemia. Mice were stratified by body weight and fat mass, then randomized into 4 groups (n=7-8/group) and treated for approximately 3 weeks with continued ad libitum access to HFD. Statistical analysis: Treatment effects were analyzed using multiple-comparison tests with correction for multiplicity.

### Treatment Groups

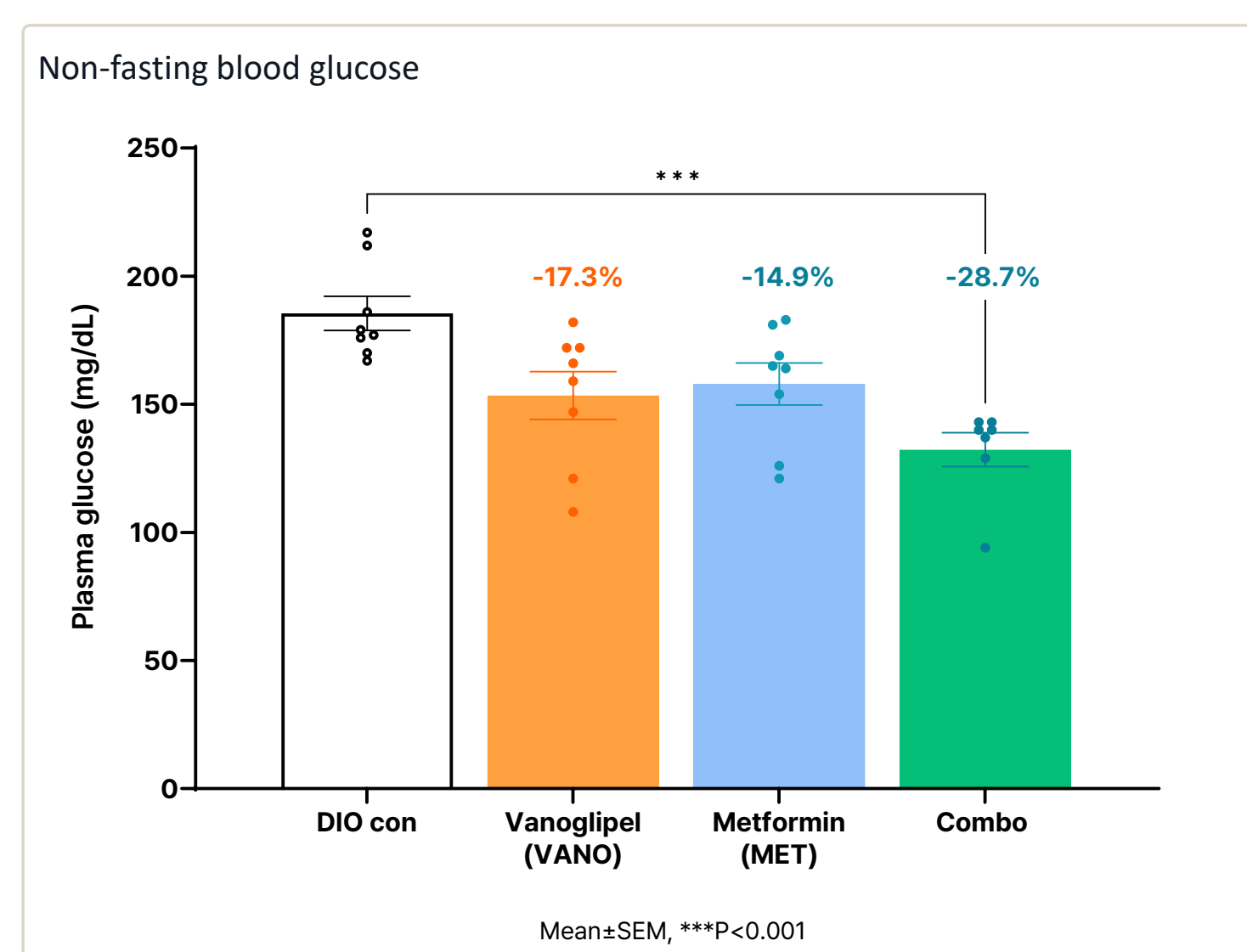
GROUP	TREATMENT	DOSE (MG/KG/DAY)
Control	HFD + vehicle (0.5% MC)	NA
Vanoglipel	Vanoglipel (DA-1241), p.o. b.i.d.	100
Metformin	Metformin, p.o. b.i.d.	300
Combo	Vanoglipel + Metformin, p.o. b.i.d.	100 + 300

All drugs were administered by oral gavage (p.o.) twice daily (b.i.d.) in 0.5% methylcellulose (10 mL/kg) at 9 a.m. and 4 p.m. The daily dose was split equally between the two administrations

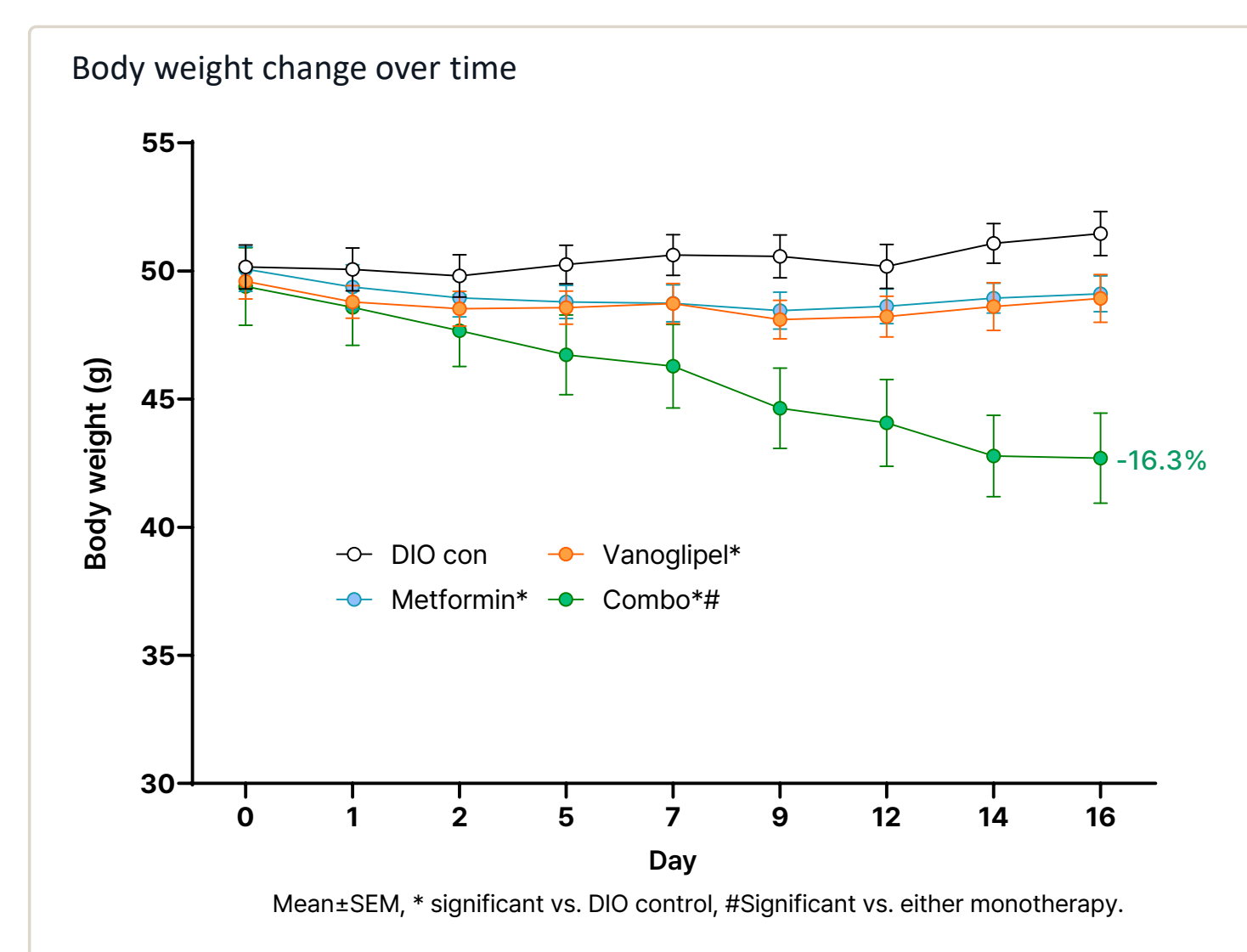
## RESULTS

- The combined use of Vanoglipel and Metformin showed superior glycemic control compared with either monotherapy
- The combined use of Vanoglipel and Metformin reduced body weight and fat mass more than either monotherapy
- The combined use of Vanoglipel and Metformin enhanced gut peptide secretion and reduced food intake

### 1. Combination treatment reduced non-fasting blood glucose by 28.7% versus 17.3% and 14.9% with monotherapies



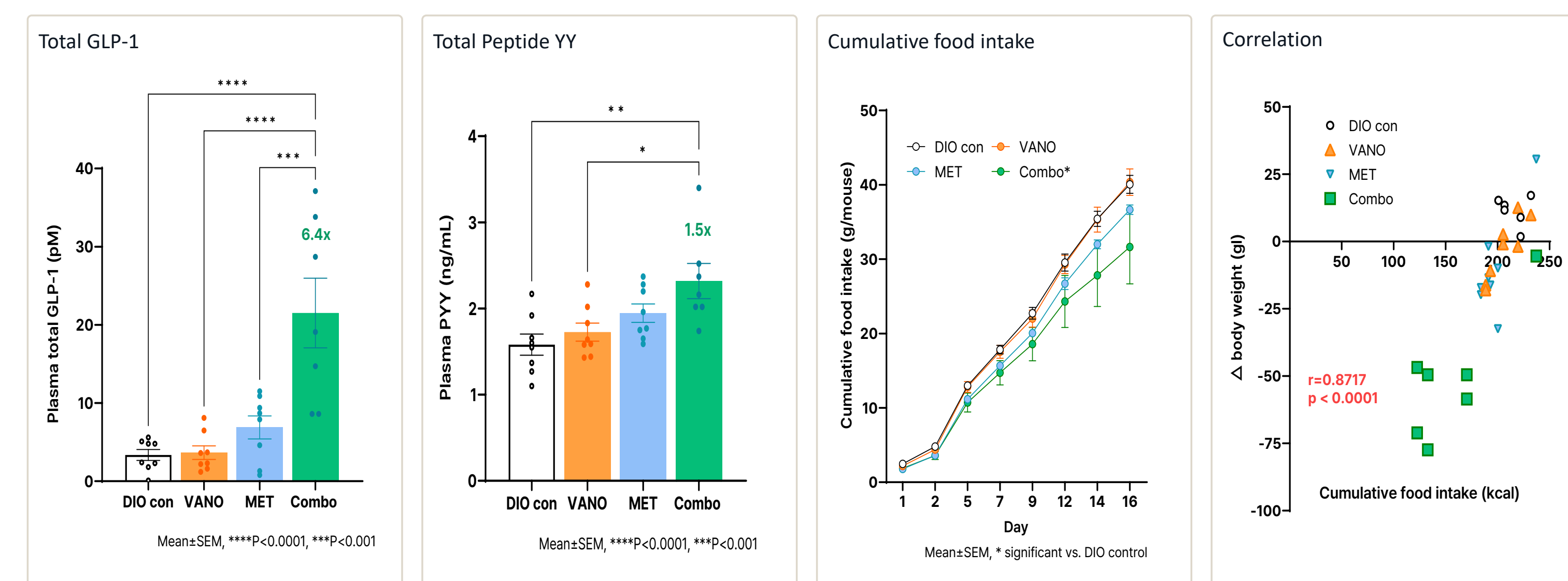
### 1. Vanoglipel and metformin monotherapies each reduced body weight by approximately 4%, whereas combination achieved a 16.3% reduction versus control



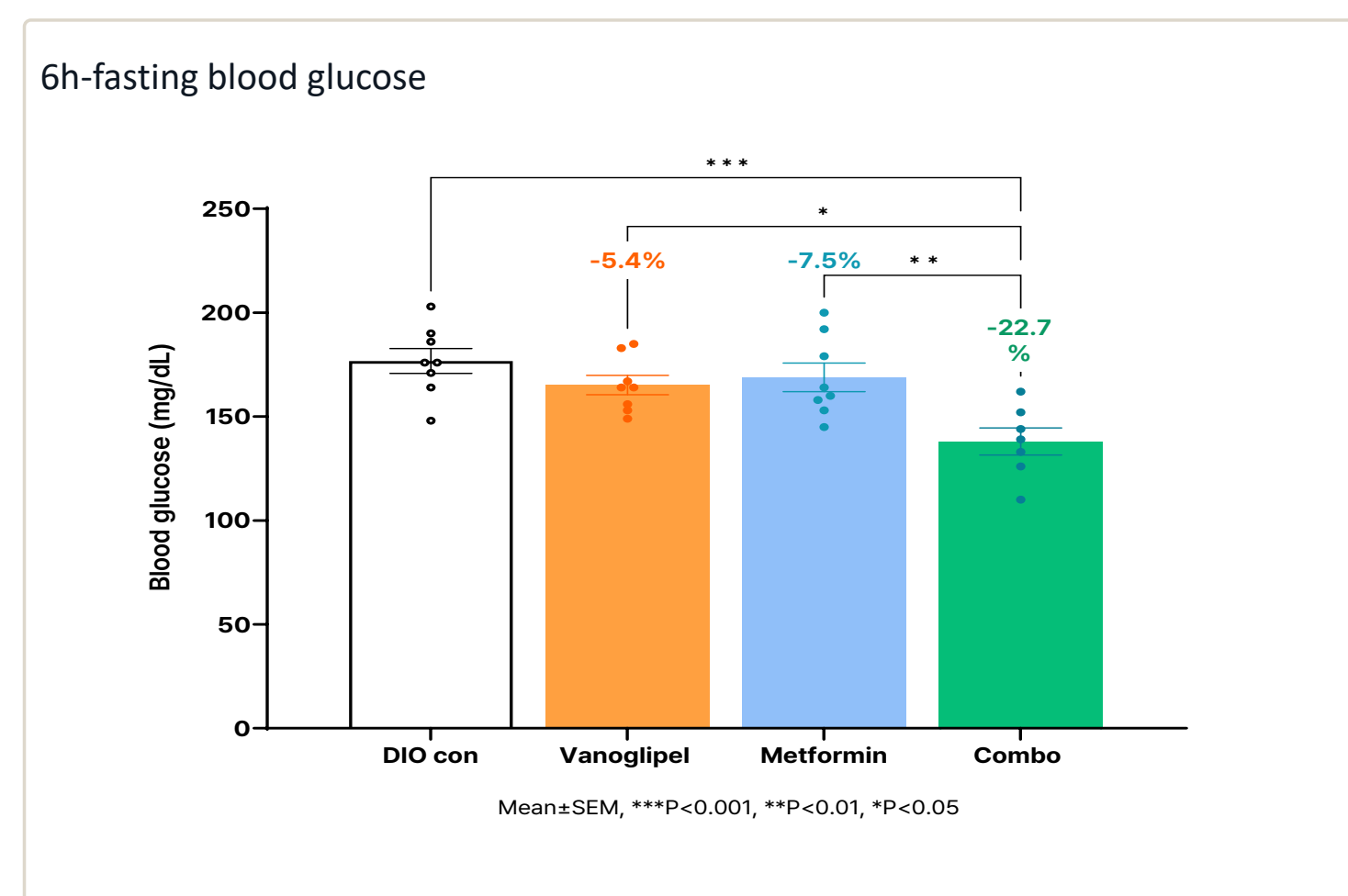
### 1. Combination increased plasma total GLP-1 by 6.4-fold and PYY by 1.5-fold versus control

### 2. Combination treatment significantly reduced food intake, potentially related to increased gut peptide levels

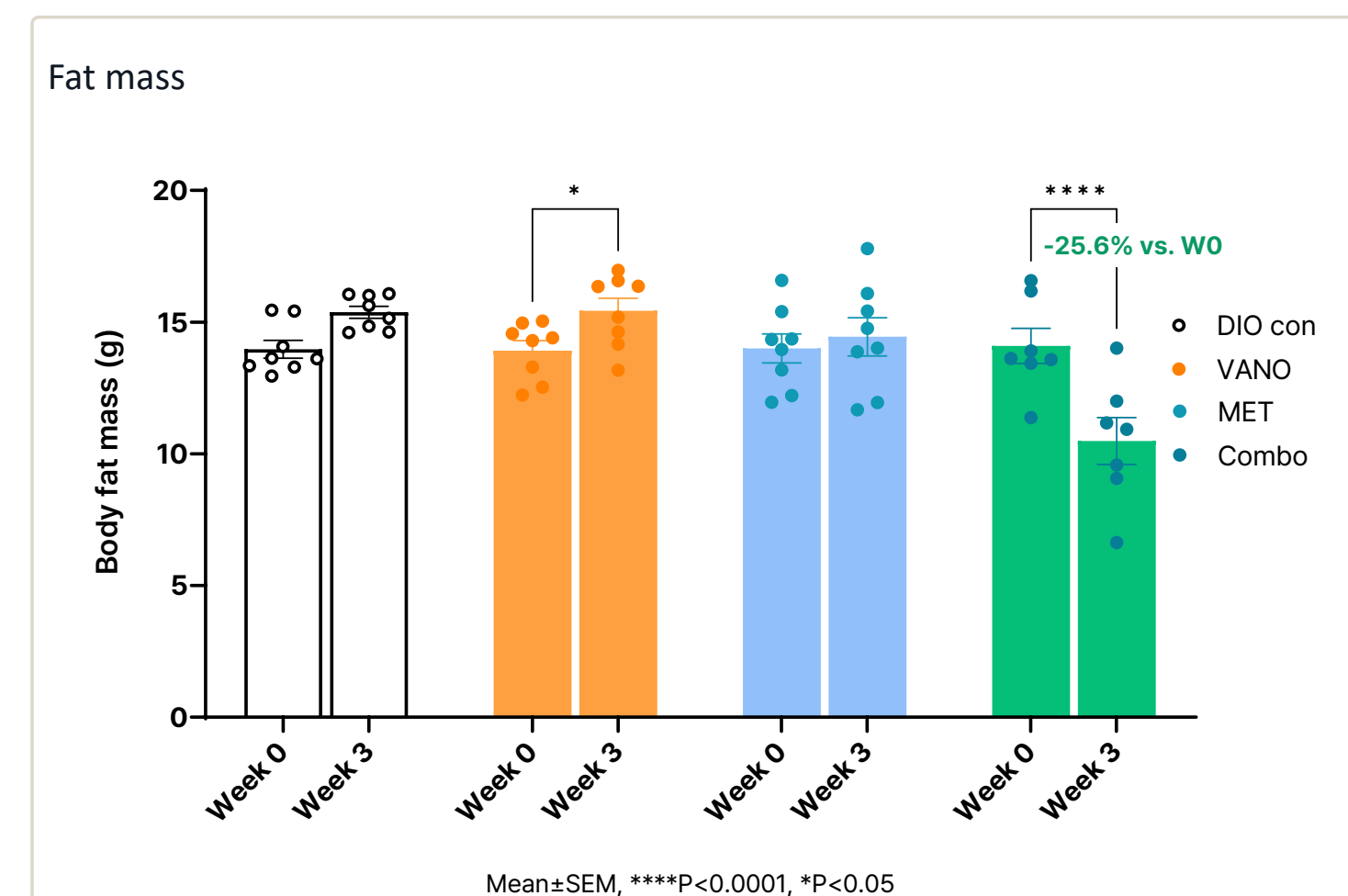
### 3. Body weight showed a significant correlation with food intake.



### 2. Combination treatment reduced 6-h fasting glucose by 22.7%, superior to either monotherapy



### 2. Combination treatment reduced fat mass by 3.6 g, while the control and monotherapy groups gained 0.4–1.4 g of fat mass



## CONCLUSION

- Vanoglipel combined with Metformin produced **synergistic metabolic benefits** in DIO mice with T2D and obesity.
- The combination improved **glycemic control** and reduced **body weight and fat mass** beyond either monotherapy.
- These effects may reflect **complementary mechanisms**, including Metformin-mediated **AMPK activation** and enhanced **GLP-1/PYY signaling** with reduced food intake.
- Together, these findings support **Vanoglipel as a potential add-on partner to Metformin** for additional metabolic benefit in **T2D with obesity**.