

# GLP-1 (9-36) Indicated in Diabetes

GLP (9-36), previously thought to be the “inactive” form of GLP-1, has been found to have a role in glucose regulation. It does not activate the GLP-1 receptor, yet it may have a role in diabetes.

## GLP-1 (9-36) Amide, Cleavage Product of GLP-1 (7-36) Amide, Is a Glucoregulatory Peptide

### Objective:

Glucagon-like peptide-1 (GLP-1) (7-36) amide is a glucoregulatory hormone with insulinotropic and insulinomimetic actions. We determined whether the insulinomimetic effects of GLP-1 are mediated through its principal metabolite, GLP-1 (9-36) amide (GLP-1m).

### Methods and Procedures:

Glucose turnover during two, 2-h, euglycemic clamps was measured in 12 lean and 12 obese (BMI <25 or >30 kg/m<sup>2</sup>) male and female subject volunteers with normal oral glucose tolerance test. Saline or GLP-1m were infused from 0 to 60 min in each study. Additionally, seven lean and six obese subjects underwent a third clamp in which the GLP-1 receptor (GLP-1R) antagonist, exendin (9-39) amide was infused from -60 to 60 min with GLP-1m from 0 to 60 min.

### Results:

No glucose infusion was required in lean subjects to sustain euglycemia (glucose clamp) during saline or GLP-1m infusions. However, in obese subjects glucose infusion was necessary during GLP-1m infusion alone in order to compensate for a marked (>50%) inhibition of hepatic glucose production (HGP). Plasma insulin levels remained constant in lean subjects but rose significantly in obese subjects after termination of the peptide infusions. During GLP-1R blockade, infusion of glucose was immediately required upon starting GLP-1m infusions in all subjects due to a more dramatic reduction in HGP, as well as a delayed and modest insulinotropic response.

### Discussion:

We conclude that GLP-1m potently inhibits HGP and is a weak insulinotropic agent. These properties are particularly apparent and pronounced in obese but only become apparent in lean subjects during GLP-1 (7-36) receptor blockade. These previously unrecognized antidiabetogenic actions of GLP-1m may have therapeutic usefulness.

*Elahi D., et al. Obesity (2008) 16 7, 1501–1509. doi:10.1038/oby.2008.229*

Model	Product Name	Standard Size
028-12	GLP-1 (9-36)-Amide	200 µg



**PHOENIX PHARMACEUTICALS, INC.**  
330 BEACH ROAD, BURLINGAME CA, 94010, USA  
PHONE: (650) 558-8898 EMAIL: [info@phoenixpeptide.com](mailto:info@phoenixpeptide.com)  
[WWW.PHOENIXPEPTIDE.COM](http://WWW.PHOENIXPEPTIDE.COM)

**PHOENIX EUROPE GMBH**  
VIKTORIASTRASSE 3-5, D-76133 KARLSRUHE, GERMANY  
PHONE: +49-721-1611950 EMAIL: [germany@phoenixpeptide.com](mailto:germany@phoenixpeptide.com)  
[WWW.PHOENIXPEPTIDE.COM](http://WWW.PHOENIXPEPTIDE.COM)