

Nutritional and clinical research performed and presented by Richard Cohen MD and Bioletics

Humapro™ vs whey protein: Affects upon human body composition

There is very little specific validated information available in relation to the human metabolic pathways of both amino acids and whole proteins in regard to NNU, gluconeogenesis, catabolism and effects upon body composition. The pathway of substrate metabolism often affects hormonal levels and responses in a cascade or matrix manner rather than a simple linear action/reaction scenario that is often assumed supplemental and pharmaceutical preparations.

In this study the goal was to evaluate positive exogenous insulinogenic and endogenous lipolytic responses to a supplemental preparation known as Humapro™ compared to whey protein supplements from cow's milk. HumaPro™ provides a specific ratio of EAAs for significant complete protein synthesis™ with specific fractions of bitter melon and coffee bean extracts.

Back Ground:

Whey proteins from cow's milk have been touted as the hallmark of supplemental proteins with claims of fat loss, increased lean mass and high protein content. When foods and/or macronutrients are ingested a series of metabolic events are triggered defining the likely outcome of ingestion of a given food stuff. As an example, when table sugar is ingested a series of metabolic events occur resulting in an elevation in blood glucose (BG). When this occurs, there is a significant increase in insulin secretion to lower to circulatory BG to a safe level. As BG increases so too does the amount of insulin secreted with the potential for adipose tissue storage as well as nutrients being shuttled away from lean mass tissues.

Endogenous Insulin is a transport and storage hormone produced by the pancreas that facilitates glucose and other nutrient up-take or disposal in various forms:

- 1) Storage in proteinaceous tissues in the form of amino acids for repair and growth, glycogen to fuel ATP production and fats to facilitate secondary energy substrates.
- 2) Storage in adipose tissue.

* The pancreas is a gland organ in the digestive and endocrine system of vertebrates. It is both an endocrine gland producing several important hormones, including insulin, glucagon, and somatostatin, as well as an exocrine gland, secreting pancreatic juice containing digestive enzymes that pass to the small intestine. These enzymes help in the further breakdown of the carbohydrates, protein, and fat in the chyme.

Preparation:

9 subjects ranging in age from 18-50 years of age were pre-tested for normal insulin function and glucose disposal and for drug or supplemental use that may alter study results. All subject fasted for 12 hours pre-testing in a placebo double blind cross over study. Blood samples were taken 15 minutes pre-ingestion, 30 minutes post ingestion and 2 hours post ingestion. Results show that blood glucose did remain basal levels and theoretically insulin secretion remained below basal levels as well.

- A) In a published study using whey protein ingested by type-2 diabetics after breakfast and then again after lunch researchers showed a dramatic increase in blood glucose followed by a rise in insulin secretion of 31% and 57% respectively. {1}
- B) However, in another study using the same criteria done with non-diabetics endogenous insulin and glucose rose significantly when whey protein was ingested before the meal but decreased post meal. {3}
- C) In another study titled: “The acute effects of four protein meals on insulin, glucose appetite and energy intake in lean men{4} subjects were fed one of four protein meals, whey, tuna, turkey and egg albumin then fed a buffet meal 4 hours later. The AUC blood insulin after the consumption of the test meal was significantly higher with the whey meal than with the tuna, turkey and egg meals

Results:

Product Ingested	Pre-Ingestion	30 minutes Post	120 minutes Post
10 tablets Humapro™	85mg/dl +- 3mg	75mg/dl +- 2mg	70mg/dl +- 3mg

Conclusions and Summery:

Insulin is one of the most anabolic hormones in human physiology. It facilitates storage or transport into cells of nutrients including amino acids (from protein), fats and carbohydrates in most human tissues including organs, muscle and adiposities. Ingestion of whey protein has been validated to increase insulin secretion at various points of intake though it has also been shown to increase saeity. The latter explains in part why some report weight loss when using whey protein supplementation and has been the subject of several valid studies.

Humapro™ does not hold the same potential in regard to increased insulin secretion as there is a distinct lack of increase in blood glucose from ingestion. This is likely due to near zero waste utilized for caloric storage or gluconeogenesis and the supplements formulary providing a synergistic lipolytic insulin analog that facilitates amino acid up-take into proteinatious tissues for anabolism {2}. Further studies should be performed to validate the mechanism for this occurrence.

In summery these results show HumaPro™ to be a superior source of complete protein amino acids for favorable body composition and lean mass accrument.

References:

- 1) American Journal of Clinical Nutrition, Vol. 82, No. 1, 69-75, July 2005
- 2) [Br J Nutr.](#) 2008 Feb;99(2):230-9. Epub 2007 Jul 26. Bitter melon (*Momordica charantia* L.) inhibits adipocyte hypertrophy and down regulates lipogenic gene expression in adipose tissue of diet-induced obese rats.
- 3) The Effect of Whey Protein on Post-Meal Blood Glucose and Insulin: Tina Akhavan¹, Bohdan L Luhovyy¹ and Harvey G Anderson¹ Nutritional Sciences, University of Toronto, Toronto, ON Canada [Br J Nutr.](#) 2010 May 11:1-8.
- 4) The acute effects of four protein meals on insulin, glucose appetite and energy intake in lean men. School of Public Health, Curtin Health Innovation Research Institute, ATN Centre for Metabolic Fitness, Curtin University of Technology, GPO Box U1987, Perth, WA 6845, Australia.