



TITLE: Circulating MIR148A Associates with Sensitivity to Adiponectin levels in Human Metabolic Surgery for Weight Loss

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ABSTRACT (upto 300 words)

We sought to discover secreted biomarkers to monitor the recovery of physiological adiponectin levels with metabolic surgery, focusing on epigenetic changes that might predict adiponectin function. We conducted a prospective observational study of patients undergoing metabolic surgery by Roux-en-Y Gastric Bypass (RYGB) for weight loss in a single center (IRB GHS # 1207-27). Patients lost on average 47±12 % excess BMI (%EBMI) after 12 weeks. Adiponectin pre, post or delta [post minus pre] did not correlate with %EBMIL. The presence of plasma MIR148A allows identification of patients that appear to be adiponectin insensitive at baseline. We combined the presence of plasma MIR148A, the concentration of total adiponectin and the expression of DNA methyltransferase 1 (DNMT1) in liver biopsy tissue to identify patients with non-physiological adiponectin. Weight loss and physical activity interventions complemented with the new method presented here could serve to monitor the physiological levels of adiponectin, thought to be important for long-term weight loss maintenance. A clinical diagnostic model that includes the analysis of gene expression levels in liver biopsied samples is being used as a molecular medicine personalized method to identify the full picture of weight loss maintenance etiologies both in vivo and in vitro.

BIOGRAPHY (upto 200 words)

Magnolia Ariza-Nieto Ph.D. has been a scientist for over 35 years and has worked in multidisciplinary, multicultural research teams that focus on the links between agriculture and human health. Magnolia worked in academia until 2015, when she spin her research findings form academia into business. Her company holds intellectual property of biomarkers methods to identify patients with rare etiologies associated with long term weight loss maintenance. Her PCR diagnostic kit uses human secretory fluids as well as liver biopsied samples. She has been serving as a peer manuscript reviewer for several reputed journals, including “The Journal of Clinical Endocrinology & Metabolism”.



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