



VCU

VIRGINIA COMMONWEALTH UNIVERSITY

“Novel Biomarker and Potential Therapeutic for Obesity-Induced Insulin Resistance”

VCU # 12-104

Applications

- Insulin resistance
- Obesity
- Diabetes
- PCOS
- Metabolic disorders (pre-diabetes, dysglycemia)

Advantages

- Early diagnostic
- Development of a potential early therapeutic
- Easy and straightforward to examine

Inventors

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Contact

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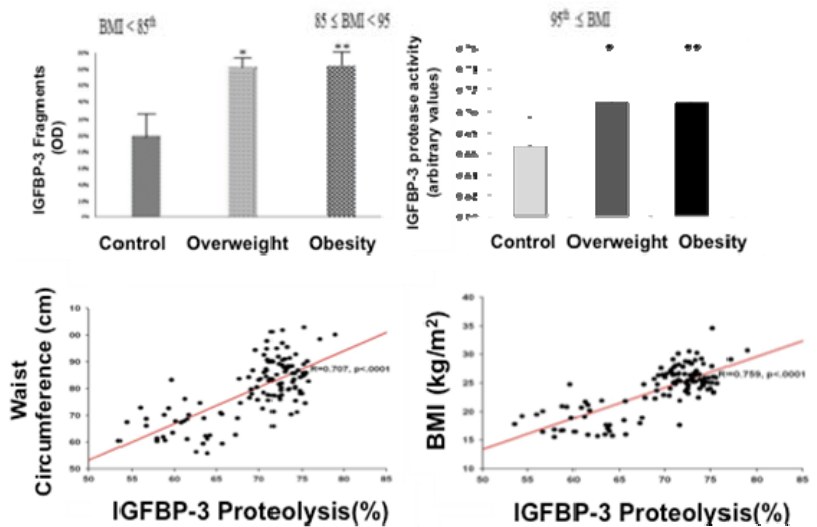
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Market Need

It is estimated that approximately 25% of the USA adult population have insulin resistance, which further leads to obesity, type 2 diabetes and other metabolic disorders. Currently, the only available diagnosis of insulin resistance focuses on blood glucose/insulin level and does not allow for early detection and potential prevention of this condition.

Technology Summary

This technology describes potential early diagnostic and therapeutic for insulin resistance, diabetes and obesity-induced metabolic disorders. Dr. Oh has shown that increasing degradation of Insulin-like Growth Factor-Binding Protein 3 (IGFBP-3) was found in circulation during progression from lean to overweight/obese condition in patients, resulting in systemic insulin resistance (Fig. below). Neutrophil proteases and IGFBP-3 proteolysis can be used as a potential biomarker for disease progression from high-risk state of developing diabetes to Type 2 Diabetes Mellitus (T2DM). Furthermore, clinically available neutrophil protease inhibitors could be used as an early intervention for obesity-induced disorders, such as prediabetes, dysglycemia and diabetes.



Technology Status

Patent pending: U.S. and foreign rights are available.

In vitro and *in vivo* data available.

This technology is available for licensing to industry for further development and commercialization.