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Office of Technology Management

TRANSMEMBRANE PROTEIN TARGETED TO TREAT OBESITY AND ASSOCIATED METABOLIC DISEASES

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Value Proposition: *Novel target for therapeutic treatment of obesity and related metabolic diseases.*

Technology Description

Researchers at Washington University in St. Louis have developed a therapeutic targeting MXRA8 to treat obesity and associated metabolic diseases. The chikungunya receptor MXRA8 was is discovered to be highly expressed in white adipose tissue (WAT) and is upregulated in obesity in both mice and humans.

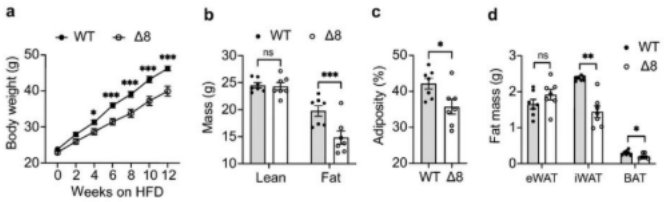

Fig 1: Mice with truncated MXRA8 are shown to be resistant against diet-induced obesity (A), with significantly less fat mass (B), gaining substantially less body fat (C), inguinal white adipose tissue and brown adipose tissue(D) relative to control.

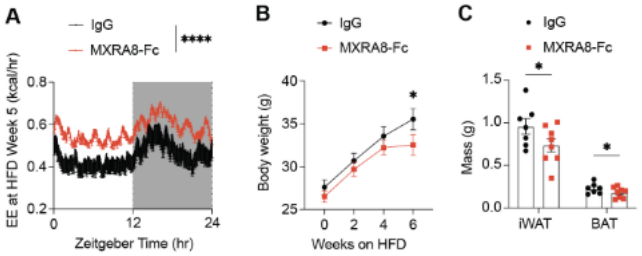

Fig 2.: Mice with truncated MXRA8 are shown to be resistant against diet-induced obesity (A), with significantly less fat mass (B), gaining substantially less body fat (C), inguinal white adipose tissue and brown adipose tissue(D) relative to control.

Stage of Research

Proof of concept: Therapeutic tested in mice. Found that in mice, fusion protein targeting MXRA8 can protect from diet-induced obesity by increasing energy expenditure and decreasing weight gain, fat mass, adiposity and white adipose tissue.

Publications

MXRA8 promotes adipose tissue whitening to drive obesity. bioRxiv 2024 (Pre-print)

Applications

- Obesity treatment

Key Advantages

- Novel target for obesity and other metabolic diseases

Patents

- US Non-Provisional filed 01/26/2025; additional IP in US Patent issued 10/21/2025

Related Web Links – Jonathan Brestoff Profile; Brestoff Lab; Michael Diamond Profile; Diamond Lab