Anti-obesity and Weight Control Drugs Target Melanocortin Receptor

*Technology #20160320*

**Novel chemical scaffold comprised of both activating and blocking molecules**

Chimeric peptide molecules that potentially activate the melanocortin-4 receptor (MC4R) are derived from molecules that both activate and block the receptor. The chimeric molecules contain a group that activates MC4R and inserts it into a chemical structure that potently blocks MCR4. This novel chemical scaffold incorporates an activating sequence (His-DPhe-Arg-Trp) into an antagonist octapeptide scaffold (of AGRP) to target MCR4 for molecular probes and potential anti-obesity drugs.

**None of the current MCR4-targeting drug side effects**

The melanocortin-4 receptor (MCR4) is one of many signaling systems that control appetite and body weight. Some molecules activate MCR4 (resulting in decreased food intake) and other molecules block it (resulting in increased food intake). Developing anti-obesity drugs that target MCR4 has been a significant effort, but existing compounds have led to negative, off-target effects such as increased blood pressure and erectile activity. By generating chimeric molecules derived from both activating and blocking molecules, this new scaffold could generate compounds that activate MCR4 without the previously reported side effects.

**Phase of Development**

- Limited in vivo studies.

**Benefits**

- Novel chimeric molecules potently activate the melanocortin-4 receptor (MC4R)

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Features

- Derived from both activating and blocking molecules
- Novel chemical scaffold incorporates an activating sequence (His-DPhe-Arg-Trp) into an antagonist octapeptide scaffold (of AGRP)

Applications

- Weight control
- Obesity management and associated co-morbidities (e.g., diabetes, heart disease and hypertension)
- Anti-obesity drugs
- Dietary supplements
- Molecular probes

Interested in Licensing?

The University relies on industry partners to further develop technologies for commercial purposes. The license is available for this technology and would be for the sale, manufacture or use of products claimed by the issued patents. Please contact Kevin Anderson to share your business needs and technical interest in this technology and if you are interested in licensing the technology for further research and development.

Inventors

Carrie Haskell-Luevano, PhD

Professor, Medicinal Chemistry

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For additional information, contact

Kevin Anderson
Technology Licensing Officer
exprlic@umn.edu
612-624-8293

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