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Oragenics, Inc. Announces Publication Detailing the Development of Blueprints for Designing a New Class of Anti-Infectives

TAMPA, Fla.--(BUSINESS WIRE)-- Oragenics, Inc. (NYSE American: OGEN) (the "Company"), a clinical stage biotechnology company, today announced the publication of a research paper titled "Blueprints for the rational design of therapeutic mutacin 1140 variants," in *Chemical Biology & Drug Design* (CBDD).

The study, which can be accessed via <https://onlinelibrary.wiley.com/doi/abs/10.1111/cbdd.13365> focused on structure-activity relationships of the lantibiotic Mutacin 1140 (MU1140) that expand the "drugability" of the MU1140 pipeline. Lantibiotics are a novel class of peptide antibacterial compounds naturally produced by a variety of Gram-positive bacterial strains to attack competing bacteria. The outcomes from the study enabled investigators, Kers et. al., to conceptualize variants of MU1140 that eliminated the commonly found limitations in drug manufacturing that has made the development of lantibiotics challenging, while also improving efficacy, solubility, stability and longer half-life, as demonstrated in biological systems. This is the first study that proposes that a therapeutic variant of MU1140 would require multiple substitutions in order to present all of the desired properties necessary to justify further development.

Oragenics is developing OG716, a second generation multiple variant of MU1140. The lead compound is derived from the company's proprietary lantibiotic discovery and characterization platform, and has shown positive results in nonclinical testing, including the absence of recurrence in animal models for *C. difficile* infection (CDI).

Dr. Alan Joslyn, Oragenics' president and CEO stated: "The findings of this study provide insight into a more streamlined and effective development and manufacturing of this new class of anti-infectives. OG716 is targeted for the treatment of *C. difficile* infections, which have become an increasing health risk worldwide. New drug resistant strains have caused an increase in mortality by more than 400 percent, which are expected to continue to increase until we are able to counter against the resistance. We believe our compound may be an effective treatment for recurrent CDI. In the meantime, we anticipate submitting an Investigational New Drug application with the U.S. Food and Drug Administration to begin clinical development during 2019."

About Oragenics, Inc.

Oragenics, Inc. is focused on becoming a leader in novel antibiotics against infectious disease and on developing effective treatments for oral mucositis. The company has established two exclusive worldwide channel collaborations with Intrexon Corporation and its subsidiaries, which allow Oragenics to accelerate the development of much needed new antibiotics that can work against resistant strains of bacteria and the development of biotherapeutics for oral mucositis and other diseases and conditions of the oral cavity, throat, and esophagus.

For more information about Oragenics, please visit www.oragenics.com.

Safe Harbor Statement: Under the Private Securities Litigation Reform Act of 1995: This release includes forward-looking statements that reflect management's current views with respect to future events and performance. These forward-looking statements are based on management's beliefs and assumptions and information currently available. The words "believe," "expect," "anticipate," "intend," "estimate," "project" and similar expressions that do not relate solely to historical matters identify forward-looking statements. Investors should be cautious in relying on forward-looking statements because they are subject to a variety of risks, uncertainties, and other factors that could cause actual results to differ materially from those expressed in any such forward-looking statements. These factors include, but are not limited to, risks and uncertainties described in our filings with the U.S. Securities and Exchange Commission. Oragenics assumes no responsibility to update any forward-looking statements contained in this press release or with respect to the matters described herein.

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Oragenics, Inc.

Corporate:

Michael Sullivan, 813-286-7900

Chief Financial Officer

msullivan@oragenics.com

or

Investors:

John Marco

Managing Director

CORE IR

310-819-2948

johnm@coreir.com

Media:

Jules Abraham

CORE IR

917-885-7378

julesa@coreir.com

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