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Oragenics, Inc. Announces Peer-Reviewed Publication Detailing Discovery of OG716 for *C. difficile* infections

TAMPA, Fla.--(BUSINESS WIRE)-- Oragenics, Inc. (NYSE American: OGEN) (the "Company"), a clinical stage biotechnology company, today announced the publication of a research paper entitled "[OG716: designing a fit-for-purpose lantibiotic for the treatment of *Clostridium difficile* infections](#)" in *PLOS ONE*, a peer-reviewed open access scientific journal published by the Public Library of Science.

Researchers sought to discover a lead candidate for the treatment of *Clostridium difficile* (*C. difficile*) based on a second-generation library of over 300 variants of the lantibiotic Mutacin 1140 (MU1140). MU1140 remains an attractive lantibiotic due to its novel mechanism of action that may limit the development of drug resistance. In the study, researchers selected eight top performing compounds based on testing for superior potency, solubility, manufacturability, and physicochemical and/or metabolic stability in biologically-relevant systems and compared them to Oragenics' previous lead compound, OG253. The best performing candidates in vitro were further evaluated orally using the Golden Syrian hamster model of *C. difficile* associated Diarrhea (CDAD). In vivo testing ultimately identified OG716 as the lead compound over first generation OG253, demonstrating 100% survival rate with no relapse at 3 weeks post infection.

"Lantibiotics remain an untapped avenue for the discovery and development of novel antibiotics, particularly MU1140, which has the potential address the increasing problems of drug resistance. In this second-generation study, we identified OG716 as our new lead compound for the treatment of *C. difficile* infections. OG716 has a comparable microbiology profile and similar potency to OG253, while effectively simplifying the production process and clinical administration compared to OG253," commented Dr. Alan Joslyn, Chief Executive Officer and President of Oragenics. "*C. difficile* infections have become an increasing health risk worldwide as new drug resistant strains have appeared, causing an increase in mortality rates by more than 400%. We believe that OG716 holds the potential to be an effective treatment for *C. difficile* while reducing the risk of developing drug resistance and look forward to submitting an Investigational New Drug application in 2019."

Clostridium difficile is an infection causing colitis by producing toxins that damage the lining of the colon. It is considered an urgent threat by the Centers for Disease Control and Prevention with an incidence rate of 500,000 infections per year and a mortality rate of 29,000 deaths per year *C. difficile* infections, which are one of the most frequent hospital-acquired infections, have more recently affected people traditionally not considered high risk, triggering an increased health risk amongst the broader population.

About Oragenics, Inc.

We are focused on becoming a leader in novel antibiotics against infectious disease and on developing effective treatments for oral mucositis. Oragenics, Inc. has established two exclusive worldwide channel collaborations with Intrexon Corporation and its subsidiaries. The collaborations allows 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.oralgenics.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, whether the reverse stock split will be beneficial to the Company and its shareholders, any inability to meet the NYSE American continued listing standards in the future for any reason, and those other factors described in our filings with the U.S. Securities and Exchange Commission. Any responsibility to update forward-looking statements is expressly disclaimed.

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