OpGen's Whole Genome Mapping Technology Provides Critical Genomic Information for Malaria Research

October 11, 2011 3:30 PM ET

New Genetic Variation Discovered in Multi-drug Resistant *Plasmodium falciparum* Malaria Strain

Media Contact:
Dan Budwick
Pure Communications, Inc.
(973) 271-6085
dan@purecommunicationsinc.com

OpGen Contact:
Judy Macemon
VP Marketing, OpGen, Inc.
(240) 813-1279

GAITHERSBURG, MD, October 11, 2011 – The Walter Reed Army Institute of Research (WRAIR) and OpGen, Inc. today announced publication of findings by the WRAIR that indicate a breakthrough in malaria research (Malaria Journal www.malariajournal.com/content/10/1/252). Malaria affects over 250 million people, resulting in one million deaths each year and is considered a critical global health threat (WHO 2010 World Malaria Report). The team at WRAIR identified new areas of genetic variation in a multidrug-resistant malaria strain and reference sequence strains used in vaccine development, potentially identifying DNA associated with resistance and immune response.

"Automated whole genome mapping technology allowed us to rapidly produce high quality optical maps that spanned all 14 chromosomes of four *P. falciparum* genomes," commented Captain Matthew Riley, chief of genomics for the Multidrug-resistant Organism Repository and Surveillance Network (MRSN). "In addition, we identified new regions of interest in these malaria strains, including novel copy number variation that may be related to drug resistance, virulence factors and immune evasion." The MRSN studies important pathogens to enhance performance improvement and focus infection control for U.S. military troops.

OpGen's Argus® Whole Genome Mapping System provides rapid, accurate analysis of microbial genomes with complete, ordered, high-resolution DNA maps. The technology is widely used by public health labs and microbial researchers who study the emergence of disease outbreaks and hospital acquired infections that are increasingly difficult to treat with standard therapies.

"This study clearly demonstrates the practical application and value of combining OpGen's Whole Genome Mapping capabilities with sequencing data to achieve high resolution genetic structure information required to identify important genomic regions associated with virulence and drug resistance," commented Doug White, OpGen CEO. "DNA sequencing technologies are challenged with sorting out areas of genetic expansion and contraction, highly repetitive areas and locations in the genome where genes are presented in varying copy number from strain to strain. Whole Genome Mapping presents a clear picture of each genome's architecture."

About OpGen, Inc.
OpGen, Inc. is a leading innovator in rapid, accurate genomic and DNA analysis systems and services. The company developed the Argus® Whole Genome Mapping System and also offers MapIt™ Services that provide high resolution, whole genome DNA sequence maps and finished DNA sequence information. OpGen's proprietary *de novo* technology has none of the limitations of sequencing-based methodologies, PCR or gels. The company's technology is used by public health agencies and research labs worldwide to rapidly analyze microbial genomes, monitor disease outbreaks and emerging drug resistance. A new application of Whole Genome Mapping is also being applied large genome sequence improvement including mammals, vertebrates, humans and plants. OpGen's customers include leading genomic research centers,

biodefense organizations, academic institutions, clinical research organizations and biotechnology companies. For more information, visit www.gbbetasite.com/opgen.

About WRAIR

The Walter Reed Army Institute of Research is the largest and oldest laboratory in the U.S. Army Medical Research and Material Command. It conducts research on a range of medical issues relevant to the military, including naturally occurring infectious diseases, operational health hazards (poor sleep and psychological health of Soldiers), and traumatic brain injury. For more information on new Centers of Excellence for Infectious Disease Research and Military Psychiatry and Neuroscience, visit www.wrair.army.mil.