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For Immediate Release
April 17, 2017

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ECCMID Presentation to Demonstrate Revolutionary Breakthrough in Malaria Detection *New Testing Procedure Holds Promise As a Critical Tool in the Global Effort to Eliminate Malaria*

Leading malaria researcher Tom van Gool's presentation at the 27th European Congress for Clinical Microbiology and Infectious Diseases (ECCMID) will feature impressive results regarding a revolutionary breakthrough in the world of malaria detection. His presentation at ECCMID is scheduled for April 25, 2017, which is also World Malaria Day.

Dr. van Gool's research focused on the efficacy of *illumigene* Malaria, a molecular-based, field laboratory-deployed test for malaria developed by Meridian Bioscience, Inc. of Cincinnati, Ohio (NASDAQ: VIVO). The test, which is up to 80,000 times more sensitive at detecting the malaria parasite than current diagnostic testing options, was developed by Meridian Bioscience with the technical assistance of the Centers for Disease Control and Prevention (CDC) and Cheikh Anta Diop University of Dakar, Senegal.

Dr. van Gool, MD, PhD, is with the Department of Clinical Parasitology, Academic Medical Center at the University of Amsterdam. His presentation of a pivotal, multi-centre study in a non-endemic West European setting will show that among returning travellers and immigrants, 100 percent accurate detection of malaria was observed utilizing the *illumigene* Malaria molecular test, including detection of all five malaria species and double infections. In the same population, an estimated 10 percent of cases were misjudged as being negative for malaria utilizing RDT testing. The finding of 100 percent accurate detection in patients negative for malaria with *illumigene* Malaria was impressive, as many patients examined for malaria in non-endemic countries prove to be negative for the infection and harbour other diseases. "These findings support burgeoning evidence that *illumigene* Malaria and *illumigene* Malaria PLUS assays are among the first molecular diagnostic tests for malaria in which high sensitivity and specificity, ease of handling and short time to result are combined – all being essential elements in the emergency setting of malaria diagnosis in clinical laboratories," said Dr. van Gool.

“*illumigene* Malaria has the potential to change current practices. Faster and more accurate diagnosis is vital in the fight against malaria,” said Professor Daouda Ndiaye, Department of Parasitology-Mycology, Cheikh Anta Diop University. “Earlier diagnosis enables the correct treatment to be prescribed, which leads to better clinical outcomes for the person with malaria and keeps malaria treatments for the right people. And because detecting the malaria parasite in people with a low parasite count has proven difficult, a robust, sensitive and field laboratory-deployable diagnostic tool is needed to track the malaria reservoir in pre-elimination regions. *illumigene* Malaria shows this capacity.”

illumigene Malaria was awarded first place for innovation in emergency treatment and point-of-care testing at the prestigious Journées Internationales de Biologie /Association des Colloques Nationaux des Biologistes Conference in Paris, and is CE marked for sale in Europe.

Despite a 60 percent decline in malaria deaths since 2000 due to better prevention and increased control measures, malaria is still one of the top three killers of children worldwide, claiming one life every minute of every day. ⁽¹⁾ According to the latest data from the World Health Organization, nearly half of the world’s population is at risk of malaria. ⁽²⁾ In 2015, there were roughly 212 million malaria cases and an estimated 429,000 malaria deaths. ⁽³⁾ Also that year, Sub-Saharan Africa was home to 90 percent of malaria cases and 92 percent of malaria deaths. ⁽⁴⁾ More than two-thirds (70 percent) of all malaria deaths occur in children under the age of five. ⁽⁵⁾

While malaria is preventable and treatable ⁽⁶⁾, proper diagnosis is critical. Molecular testing has proven to be more effective than current options in detecting the malaria parasite at very low levels, known as “loads.” Identifying low-load individuals has the dual benefit of ensuring they receive treatment and preventing the spread of the disease to others.

“People can be carriers of malaria without showing any symptoms, and detecting these asymptomatic individuals can be challenging,” said Slava Elagin, Executive Vice President, Research & Development at Meridian Bioscience. “If testing doesn’t identify them, eliminating malaria is impossible because these individuals can spread the disease to others.”

That scenario is playing out in the fact that malaria is no longer only a disease of Sub-Saharan Africa and southern Asia. Increasing numbers of people emigrating from countries where malaria is endemic have resulted in a higher incidence in Europe and the Middle East. The proportion of imported malaria cases has increased during the last few years from 14 percent to 86 percent in more recent studies. On pooling the reports, nearly 43 percent of malaria cases registered in key European centers occurred in non-nationals. The rates of malaria are much higher in settled immigrants who travel to visit friends and relatives in their country of origin. They can account for up to 70 percent of the cases in several reports and this increase highlights the need for better diagnostic tools in both non-endemic and endemic countries.

While not a new concept, molecular testing has traditionally been a complex process requiring fully-equipped laboratories and highly trained testing personnel. The breakthrough of *illumigene* Malaria by Meridian Bioscience is that it can be deployed in the field laboratory, where malarial infection is the

highest and low load detection most challenging to diagnose and treat. *illumigene* Malaria is user-friendly, does not require special training or capital investment, yields results in under one hour and the testing materials can be stored at room temperature.

“This is a major step forward in the fight to bring better care to those infected with malaria and to stop its spread,” said John A. Kraeutler, Chief Executive Officer and Chairman of the Board of Meridian Bioscience.

The availability of the field laboratory-deployable and user-friendly, *illumigene* Malaria, will enhance rather than replace existing testing protocols. It will join rapid diagnostic tests (RDTs) and microscopy to create a web of detection protocols that will help direct treatment where it is needed most.

“Malaria is a devastating disease and we are proud to work with all the talented and dedicated individuals around the world in the fight to eliminate it,” said Kraeutler.

illumigene Malaria will be distributed in the European, Middle Eastern and African regions by Meridian Bioscience Europe and in additional international markets by the Company’s global distribution network. It is the tenth assay now available on our *illumigene* platform that is used in nearly 1,500 institutions around the world.

1 – Meridian news release, “New Malaria Test, *illumigene* Malaria, Sets a New Gold Standard for Diagnosis”, 1.26.16

2 - World Health Organization: 10 facts on malaria (<http://www.who.int/features/factfiles/malaria/en/>) Updated December 2016

3 – ibid

4 – ibid

5 – ibid

6 – The World Health Organization, *Global Technical Strategy for Malaria: 2016-2030*

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About Meridian Bioscience, *illumigene* Malaria & LAMP Technology

- *illumigene* Malaria is a diagnostic test for malaria developed by Meridian Bioscience. It is a molecular test that uses Loop-Mediated Isothermal Amplification (LAMP) technology to amplify DNA and detect the presence of the malaria parasite.
- LAMP (Loop Mediated Isothermal Amplification) is molecular detection technology which targets DNA and uses premeasured and self-contained reagents. Unlike current polymerase chain reaction (PCR) testing, it does not require temperature cycling. LAMP incubates, detects and reports at a single temperature, allowing for faster results. *illumigene* testing kits can be stored under ambient conditions, while current molecular methods require cold storage.
- *illumigene* technology is simple, accurate and easy to use, which means that no special technical expertise is needed to perform the test. Results are available in under an hour.
- LAMP-based *illumigene* tests are already used to diagnose infectious diseases including *C. difficile*, whooping cough and Herpes Simplex Virus, where they have proved highly accurate.
- *illumigene* tests have been approved and used in other diseases for over five years.

About Meridian Bioscience, Inc

Meridian is a fully integrated life science company that develops, manufactures, markets and distributes a broad range of innovative diagnostic test kits, purified reagents and related products and offers biopharmaceutical enabling technologies. Utilizing a variety of methods, these products and diagnostic tests provide accuracy, simplicity and speed in the early diagnosis and treatment of common medical conditions, such as gastrointestinal, viral and respiratory infections. Meridian’s diagnostic products are used outside of the human body and require little or no special equipment. The Company’s products are designed to enhance patient well-being while reducing the total outcome costs of healthcare. Meridian

has strong market positions in the areas of gastrointestinal and upper respiratory infections, serology, parasitology and fungal disease diagnosis. In addition, Meridian is a supplier of rare reagents, specialty biologicals and related technologies used by biopharmaceutical companies engaged in research for new drugs and vaccines. The Company markets its products and technologies to hospitals, reference laboratories, research centers, diagnostics manufacturers and biotech companies in more than 70 countries around the world. The Company's shares are traded on NASDAQ's Global Select Market, symbol VIVO. Meridian's website address is www.meridianbioscience.com.