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UCT breakthrough named Project of the Year by Medicines for Malaria Venture

Award to be conferred at 15h30-16h00, Friday 12 July 2013
in Bremner Building, Lovers Walk, Middle Campus, UCT

Cape Town, 12 July 2013. The first antimalarial compound to be researched on African soil was named Project of the Year for 2012 by Medicines for Malaria Venture (MMV). The compound, MMV390048, was developed by an international collaboration led by a team of scientists from the University of Cape Town (UCT).

The award was given in recognition of the potential of this compound to become part of a single-dose cure for malaria. Prof Kelly Chibale, the Founder and Director of H3-D, UCT's drug discovery and development centre, received the award on behalf of the team at the International Malaria Symposium* at UCT today.

More potent than chloroquine or artemisinin

"We are very excited about the promise shown by MMV390048 against the blood stage of malaria," said Dr Timothy Wells, Chief Scientific Officer at MMV. "The compound is showing more potency than chloroquine or even artemisinin. It also has activity against other stages of the malaria parasite's life-cycle as well as all known resistant strains of the parasite. The development of the MMV390048 shows once again that African scientists are rising to the challenge and taking the lead in malaria drug research, using the partnership model to achieve success."

The search for new antimalarials is a global endeavour. MMV is one of the world's leading organisations driving the quest to find a single-dose cure for this disease. It is working in partnership with UCT, which focuses its research on critical issues affecting developing countries. Every year, malaria kills between 600,000 and one million people. Of those affected, over 90% are from Sub-Saharan African and 86% are below the age of 5. The malaria parasite is beginning to display signs of resistance to drugs currently being used in

the treatment of malaria, and thus there is an urgent need to develop new drugs to effectively treat the disease.

Professor Chibale, who is also a member of UCT's Institute of Infectious Disease and Molecular Medicine, was proud to receive the award. "UCT launched H3-D to focus drug discovery research on the development of an African solution to this largely African problem. Working with MMV and partners from around the world, we have been able to develop MMV390048 into a clinical candidate in record time and provide excellent, world-class training for the next generation of African scientists," he said. "Today, through a unique model for successful use of technology platforms and generic pharmaceutical industry expertise, the compound is progressing towards clinical development and we hope to test its safety and efficacy in humans next year."

MMV390048 has now entered preclinical development, with partnerships in India, South Korea, the United Kingdom and the United States. The compound is expected to be ready for human testing in March 2014.

*The International Malaria Symposium, "Rising to the Challenge: Southern African scientists meet malaria head on" is being held at University of Cape Town on 12 July 2013.

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Editor's notes

MMV390048 belongs to the aminopyridine series of compounds. This chemical class was initially identified by Griffith University scientists in Australia as part of MMV's extensive malaria screening campaign of around 6 million compounds. A team of scientists from H3-D, University of Cape Town, led by UCT Professor Kelly Chibale, further scrutinised and explored the antimalarial potential of the series. With parasitological, pharmacological and contract chemistry support from the Swiss Tropical and Public Health Institute (Switzerland), the Centre for Drug Candidate Optimization at Monash University (Australia) and Syngene (India) respectively, the H3-D team selected the most promising compounds from the series to be optimised and retested. In just 18 months the team had identified and developed a candidate suitable for preclinical development.

What is unique and exciting about MMV390048

The compound was identified by the University of Cape Town team in collaboration with partners from across the world: Griffith University and Monash University in Australia, Swiss TPH, and Syngene in India.

- It is very potent: In preclinical models it kills the parasite in a single dose given orally, and thus has the potential to cure millions of people.
- It is active against a wide panel of resistant strains of the malaria parasite.
- Developing the drug has made possible the training of more than 10 local scientists and cemented a strong relationship with an international partner.
- The compound is forecasted to enter trials in man in March 2014.

The compound is currently in preclinical development, led by MMV in partnership with UCT, India, S. Korea the UK and the US.

About Medicines for Malaria Venture

MMV is a leading product development partnership (PDP) in the field of antimalarial drug research and development. Its mission is to reduce the burden of malaria in disease-endemic countries by discovering, developing and facilitating delivery of new, effective and affordable antimalarial drugs.

Since its foundation in 1999, MMV has developed and brought to registration four new medicines with its partners: Pyramax®, (pyronaridine-artesunate) co-developed with Shin Poong; Eurartesim® (dihydroartemisinin-piperaquine) with Sigma-Tau; Guilin's artesunate injection for the treatment of severe malaria, Artesun®; and Coartem® *Dispersible* (artemether-lumefantrine), a child-friendly formulation developed with Novartis. Since 2009, almost 200 million courses of *Coartem Dispersible* treatment have been supplied to 35

malaria-endemic countries.

Managing the largest portfolio of antimalarial R&D projects ever assembled, of over 65 projects, MMV has seven new drugs in clinical development addressing unmet medical needs in malaria, including medicines for children, pregnant women and relapsing malaria, and drugs that could support the elimination/eradication agenda. MMV's success in research and access & product management comes from its extensive partnership network of over 300 pharmaceutical, academic and endemic-country partners in 50 countries.

MMV's vision is a world in which innovative medicines will cure and protect the vulnerable and under-served populations at risk of malaria, and ultimately help to eradicate this terrible disease.

About UCT & H3-D

The University of Cape Town is the highest-ranking university in Africa, with more than 100,000 alumni, including the late Professor Christiaan Barnard, the pioneer of the heart transplant; Neville Isdell, WWF Board Chair and former chair and CEO of The Coca-Cola Company; rising opera sensation Pretty Yende; and five Nobel Laureates: Max Theiler, Ralph Bunche, Sir Aaron Klug, Alan MacLeod Cormack and JM Coetzee.

In 2007 Professor Kelly Chibale considered the possibility of launching a drug discovery centre in South Africa. At about the same time, UCT was actively promoting an institutional policy framework for the establishment of inter-disciplinary research "signature themes" that stimulate high-level collaborative research. This process led to the selection of drug discovery as a signature theme at UCT, formally linking research groups in the faculties of science, health sciences, and engineering to create a new dynamism and collective collaborative mind-set.

The South African Department of Science and Technology (DST) was experimenting with a new concept of awarding key scientists research chairs under the South African Research Chairs Initiative (SARChI). This initiative was administered through the National Research Foundation (NRF) in a number of disciplines in academia in South Africa. Following competitive rounds, Prof Chibale was subsequently awarded the DST/NRF SARChI Chair in Drug Discovery from 1 January 2008.

The remit of the appointment was to concentrate on the discovery and pre-clinical development of novel medicines or treatment modalities for the major communicable diseases in South Africa, while training a new generation of South African scientists with the key modern pharmaceutical industry skills required to discover modern medicines.

Seeking to be better equipped to deliver on the outputs of the sort required by the DST/NRF SARChI Chair, Prof Chibale spent a sabbatical (September-December 2008) as a visiting professor at Pfizer, Sandwich, in the UK. During this sabbatical he was exposed to integrated modern drug discovery and recognised the essential skill and infrastructure components that would be the pillars of H3-D – the first drug discovery centre in Africa. It has an initial focus on TB and malaria, two of the leading health challenges on the continent.

Zambian-born Professor Chibale and his H3-D team have made international headlines for the malaria breakthrough. The news of the possible single-dose cure was voted the most popular story of 2012 in Elsevier's *Malaria Nexus Review*. Elsevier publishes *The Lancet*, among other leading publications.

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