FOR IMMEDIATE RELEASE

A significant step in understanding the binding of the malaria parasite to blood cells enabled by the ExpreS^2 technology platform

Hørsholm, Denmark, and Oxford, UK, 18th August, 2014 – Biotech company ExpreS^{2}ion® Biotechnologies today announced the publication of the article: **'Structure of malaria invasion protein RH5 with erythrocyte basigin and blocking antibodies'** in the high impact scientific journal *Nature*, with teams at the University of Oxford.
The scientists have been working together since the University of Oxford took a license to ExpreS^{2}ions' *Drosophila* Schneider-2 cell-based protein production technology platform - ExpreS^2.

The RH5 protein is essential for the invasion of human erythrocytes by the parasite that causes the most deadly form of malaria, *Plasmodium falciparum*. This is an essential stage in the life cycle of the parasite and a target for development of therapeutics to prevent the disease. The data now published reveals the structure of RH5 and shows how it interacts with its binding partner, basigin, from the human erythrocyte. It also demonstrates how antibodies can be used to prevent RH5 from binding to basigin. These findings will allow the development of improved vaccines to prevent malaria.

Dr Wian de Jongh, ExpreS^{2}ion's CSO, and one of the authors of the Nature paper commented: "We are thrilled that our work with this challenging-to-produce malaria protein is contributing to the advancement of this promising vaccine antigen. The collaboration with the teams at the Jenner Institute and the Department of Biochemistry at the University of Oxford is providing relevant scientific advances to malaria research. This publication in a high impact scientific journal is a recognition of the relevance of the ExpreS^2 platform in advancing malaria and vaccine research through enabling the production of difficult and complex proteins, in a GMP-compatible system."

Dr Simon Draper, Associate Professor at the Jenner Institute and Group Leader for the Blood-Stage Malaria Vaccine Programme commented: "these new data on the structure of the RH5 protein will greatly expedite our ability to develop a highly effective vaccine against this important and critical target within the blood-stage malaria parasite. We can now begin to understand how human antibodies neutralise red blood cell invasion by the malaria parasite and use this information to design improved versions of the vaccine that focus the immune response on the most susceptible regions of the RH5 protein. Our collaboration with ExpreS^{2}ion, and access to the ExpreS^2 platform at the Jenner Institute in Oxford, has greatly expanded our capabilities to develop new clinically-relevant protein vaccines against difficult pathogens, such

as malaria. We are looking forward to working further with ExpreS^{2}ion Biotechnologies as we progress this important new RH5 malaria target into early-phase clinical trials at Oxford.

Professor Matthew Higgins' team at the Department of Biochemistry study interactions between the malaria-causing parasites and their human ligands. He commented: 'the RH5 protein from the malaria parasite proved to be very difficult to express in large quantities and we were delighted when ExpreS^{2}ion showed that they could produce enough for the heavy requirements of structural biology. ExpreS^{2}ion were extremely helpful as we transferred the S2 cell system to the lab' and their system was absolutely necessary for us to solve the RH5:basigin structure.'

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About ExpreS^{2}ion® Biotechnologies

ExpreS^{2}ion Biotechnologies has developed a complete proprietary protein expression platform, ExpreS^2, based on engineered *Drosophila* Schneider-2 (S2) cells to serve recombinant protein production needs in the biopharmaceutical industry as well as in academia. ExpreS^2 is a stable, non-lytic protein expression platform, fully cGMP compatible, that allows quick access to proteins, excellent protein expression capability, scalability, applicability to high cell density production processes and regulatory friendliness.
ExpreS^{2}ion Biotechnologies offers technology platform licensing opportunities for use in R&D and commercial protein manufacturing. For more information visit www.expres2ionbio.com

About The Jenner Institute:

The Jenner Institute is a research partnership between the University of Oxford and the Pirbright Institute (formerly Institute for Animal Health). The Institute focuses on the parallel development of human and veterinary vaccines against major global diseases – from early-stage research through to clinical trials. For more information on the Oxford vaccine programmes visit: www.jenner.ac.uk

About Oxford University:

Oxford University's Medical Sciences Division is one of the largest biomedical research centres in Europe, with over 2,500 people involved in research and more than 2,800 students. The University is rated the best in the world for medicine, and it is home to the UK's top-ranked medical school.

From the genetic and molecular basis of disease to the latest advances in neuroscience, Oxford is at the forefront of medical research. It has one of the largest clinical trial portfolios in the UK

and great expertise in taking discoveries from the lab into the clinic. Partnerships with the local NHS Trusts enable patients to benefit from close links between medical research and healthcare delivery.

A great strength of Oxford medicine is its long-standing network of clinical research units in Asia and Africa, enabling world-leading research on the most pressing global health challenges such as malaria, TB, HIV/AIDS and flu. For more information visit www.medsci.ox.ac.uk/about

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