



Green Biologics is Awarded Grant Funding to Advance the Industrial Application of Synthetic Biology

ABINGDON, OXFORDSHIRE, UNITED KINGDOM – 7th March 2013:

Green Biologics Ltd. (GBL), a leading industrial biotechnology company focused on the production of biobutanol and other C4 chemicals from a range of sustainable and renewable feedstocks, today announced it has been awarded grant funding from the Technology Strategy Board (TSB), the UK's innovation agency, to engineer a novel bacterial host for biobutanol production.

The project is in collaboration with the Clostridia Research Group (CRG) at the University of Nottingham which is funded by the Biotechnology and Biological Sciences Research Council (BBSRC). The total project costs are £492k made up from contributions by Green Biologics (£62k), TSB (£185k) and BBSRC (£245k).

The project duration is 18 months and due to commence on 1st May 2013.

The partners aim to develop a novel bacterial host for the production of 1-butanol from renewable feedstocks. The strategy focuses on the modification of a clostridium species (*Clostridium pasteurianum*) for the fast growing renewable chemicals market. This microbe has many desirable features that make it an attractive fermentation host (fast growth rates, robustness and good butanol tolerance) but suffers from technical limitations. In this project, the partners will deploy advanced molecular biology tools for clostridia and introduce synthetic metabolic pathways that increase the range of feedstocks and also improve butanol production. The deliverable will be a novel engineered strain *C. pasteurianum* that ferments starch to butanol in high yield.

Sean Sutcliffe (CEO at GBL) said: "We are extremely pleased to receive grant funding from the TSB. This award recognises GBL's leading technical and commercialisation leadership position and also facilitates collaboration with the CRG led by Professor Nigel Minton from the University of Nottingham, a world expert in clostridial gene technologies."

The CRG, one of the largest labs at Nottingham comprising 35 researchers, develops and patents advanced gene tools for the modification and manipulation of clostridial genomes focused on strain enhancements.

Dr Edward Green (CSO at GBL) said: "Green Biologics is developing next generation products using clostridia as production hosts. This project builds on GBL's extensive industrial strain collection and opens up longer term market

opportunities. We are greatly encouraged by the recent alignment between the TSB and the research councils for Industrial Biotechnology which enables meaningful collaboration between academics and SME's. Funding initiatives are essential to maintain a UK leadership position."

About Green Biologics

GBL is a privately held industrial biotechnology company based in Abingdon, Oxfordshire, UK specialising in the manufacture of renewable chemicals and advanced biofuels. The company's core focus is n-butanol, a chemical precursor for paints, coatings, adhesives, inks, plastics, pharmaceuticals, household cleaners and personal care ingredients with a 4.5 million tonne global market worth \$10 billion. GBL is the global technology leader in renewable n-butanol and has developed advanced fermentation technology to produce renewable chemicals from non-edible cellulosic feedstocks such as agricultural and forestry residuals and municipal solid wastes. GBL has laboratory and production facilities in the U.K. and the U.S. and operates globally in Europe, China, North America, India and Brazil. For more information please visit www.greenbiologics.com.

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About University of Nottingham

The University of Nottingham has 42,000 students at award-winning campuses in the [United Kingdom](#), [China](#) and [Malaysia](#). It was 'one of the first to embrace a truly international approach to higher education,' according to the *Sunday Times University Guide 2013*. It is also one of the most popular universities among [graduate employers](#), one of the [world's greenest universities](#), and winner of the [Times Higher Education Award](#) for 'Outstanding Contribution to Sustainable Development'. It is ranked in the UK's Top 10 and the World's Top 75 universities by the Shanghai Jiao Tong and the QS World Rankings.

More than 90 per cent of research at The University of Nottingham is of international quality, according to the most recent Research Assessment Exercise. The University aims to be recognised around the world for its signature contributions, especially in global food security, energy & sustainability, and health. The University won a [Queen's Anniversary Prize](#) for Higher and Further Education for its research into global food security.

[Impact: The Nottingham Campaign](#), is the University's biggest ever fundraising campaign, designed to deliver the University's vision to change lives, tackle global issues and shape the future.

About the Technology Strategy Board

The Technology Strategy Board is the UK's innovation agency. Its goal is to accelerate economic growth by stimulating and supporting business-led innovation. Sponsored by the Department for Business, Innovation and Skills (BIS), the Technology Strategy Board brings together business, research and the public sector, supporting and accelerating the development of innovative products and services to meet market needs, tackle major societal challenges and help build the future economy. For more information please visit www.innovateuk.org.