New research targets efficient renewable chemical production

December 1 2015

New research led by a biochemist from the University of Lincoln, UK, will aim to improve the production of an important renewable chemical used in many well-known products.

A major new collaboration has been awarded funding to explore ways of improving the production of n-butanol - an central building block for a number of household and industrial substances. It occurs naturally as a product of the fermentation of sugars and other carbohydrates and is used in a range of domestic and industrial products, predominantly in paints and coatings, but also in diverse areas such as perfumes, food ingredients, natural resins, and as an extractant in the manufacture of antibiotics and vitamins.

Dr Alan Goddard, from the University of Lincoln's School of Life Sciences, will lead the project with Dr Preben Krabben from Green Biologics Ltd and Professor Ian Graham and Dr Tony Larson from the Centre for Novel Agricultural Products at the University of York.

The collaboration has been awarded a CBMNet (Crossing Biological Membranes Network) grant to explore more efficient and cost-effective ways of generating n-butanol from a variety of feedstocks – the term used to describe plant and algal materials in the production of renewable chemicals. In particular the purification step of n-butanol from the natural fermentation process can be expensive and the research aims to contribute towards improving this process.

Using expertise developed at the University of York, the researchers aim to identify the specific changes that occur during the creation of n-butanol. The changes that are identified will then be incorporated into a new model system, developed at the University of Lincoln, with a view to improving the production process and enhancing the yield.

Dr Goddard, Senior Lecturer in Lincoln's School of Life Sciences, said: "The funding awarded by CBMNet will provide an exciting opportunity for our lab to continue industrially-relevant collaborations with Green Biologics Limited. The award will benefit the work of Green Biologics Limited as well as provide new opportunities for researchers here at Lincoln. I hope that our partnership will continue to develop based on the findings of this work."

Provided by University of Lincoln