



PhytoQuest Limited specialises in the development and commercialisation of novel bioactives from plants in high-margin, value-added applications including food, pharmaceuticals, and cosmetics. We invited Dr Robert Nash to talk us through the company and the vital work it undertakes in this field.

PhytoQuest specialises in the identification, elucidation and extraction of the scientific and commercial potential of iminosugars, small carbohydrate-like molecules derived from plants. The company has built a strong portfolio of IP relating to iminosugars, with a particular focus on their bioactive properties and supporting methods for their identification, extraction and manufacture.

This research is critical because carbohydrates have crucial roles within the body related to immune function, cell-cell interactions, signalling and are strongly regulated in healthy individuals. Aberrations in carbohydrates occur in most disease states. While the great opportunities of carbohydrate-related medicines have been recognised for many years, the difficulties in analysis, isolation, synthesis and the complexity of the biology have slowed new developments. However the latest generation of iminosugars provide highly specific modifiers of carbohydrate-related disorders and open up exciting new opportunities for research in this area.

As such, PhytoQuest has been working hard to understand this area and build upon our knowledge. Recently the company has been focusing on development of an orally available Th-1 immune priming iminosugar, also an anti-inflammatory that directly reduces TNF-alpha and new molecules that can regulate blood sugar via novel mechanisms.

Our work in this area has provided us with a unique insight into this particular field of research. The discovery of new bioactive molecules from natural sources has suffered in the past from the focus on combinatorial chemistry and the use of bioactivity-guided fractionation. There are many components produced by plants and micro-organisms that were missed due to the preference for the use of organic solvents, fractionation processes used or the highly selective in vitro assays not recognising in vivo potential. Most herbal medicines were traditionally prepared in hot water and yet aqueous solvents were rarely used, even though the greatest diversity of bioactive plant components are water-soluble.

Therefore the demand for new high quality leads for Pharma companies can be met by natural products but they need to be discovered using improved methods and not eliminating small water-soluble compounds that can interact with novel receptors and often have high oral availability by utilising active transport systems.

Ultimately PhytoQuest aims to dominate the iminosugar field based on the experience of our team and the use of the best technology, both of which are key factors in the success of any project in this area.

Our staff are a key asset, and as such we like to ensure that they are able to expand their interest and grow their knowledge whilst working for the firm. Therefore they are encouraged to input ideas and interests of their own on clinically relevant plant uses where the published chemistry and biology seems weak, and these projects are then reviewed and selected for their own exploratory R&D projects.

It is these motivated and talented staff, alongside our top quality technology, that have made the firm a world leader in discovery of iminosugars from plants. The health-promoting compounds in many fruits, vegetables and herbal medicines have been difficult to define in many cases and bandwagons such as anti-oxidants have misdirected many companies and consumers.

PhytoQuest believes the iminosugars, which are usually missed in routine analysis of other plant constituents, are often the elusive active compounds. Plants have been the source of many important medicines in the past and the iminosugars now provide many new molecules with IP potential.

Moving forward the firm intends to grow as a business in order to explore this exciting potential. PhytoQuest has been exclusively a Pharma discovery and Development Company to date, but the company is now entering an exciting new phase of producing ingredients and finished products for cosmetic, food supplement and food use utilising the IP and knowhow developed over the last 17 years. This new retail business will help to subsidise the Pharma development business interests.

A professional headshot of a middle-aged man with short, dark hair, looking directly at the camera with a slight smile. He is wearing a dark grey suit jacket, a white dress shirt, and a blue and white striped tie. The background is a plain, light grey.

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