

zuChem, Inc.



Contact:
Rajni Aneja

Location:
Chicago, IL

Email:
raneja@zuchem.com

Tel:
(312) 997-2150

Website:
<http://www.zuchem.com>

Company Profile

Industry Sector: Nutritive and non-nutritive food and pharmaceutical ingredients.

Company Overview: zuChem is a venture-backed biotechnology company focused on the production of unique, high-value carbohydrates (aka glycochemicals) for the pharmaceutical, food ingredients, and specialty/fine chemical industries. Founded in 2003, the Company is headquartered in Chicago, with R&D facilities in Peoria, Illinois.

zuChem's long term mission is to enable access to sugar-based chemical diversity at both research and commercial scale.

Target Market(s): End users of food ingredients and pharmaceutical building blocks, principally in the confectionary, dental hygiene, infant nutritional and pharmaceutical manufacturing industries.

Key Value Drivers

Technology*: zuChem's proprietary bioprocess platform allows the production of glycochemicals that are currently too expensive, impractical, or impossible to make.

Competitive Advantage: The Company's technology platform addresses two specific synthetic chemistry hurdles: 1) the conversion of inexpensive agricultural biomass and other commodity sugars into rare monosaccharides, including those not found in nature; and 2) the specific linking of these rare sugar monosaccharides to other molecules (including, but not limited to other sugars). The result is the ability to economically produce, at commercial scale, a wide range of glycochemical products with diverse applications, including nutritionals (such as polyol sweeteners and prebiotic oligosaccharides) to fine chemicals and pharmaceutical intermediates (such as rare sugars, therapeutic oligosaccharides, and macrolide glycoconjugates).

Plan & Strategy: zuChem commercializes its technology in two ways:

- It provides researchers with an expanded number of sugar building blocks and the synthetic tools to design and develop new glycochemical products in human health and nutrition applications. zuChem subsequently supplies the necessary sugar building blocks and/or technology licenses to enable these new glycochemical products achieve commercial scale.
- It reserves certain products and their applications to be commercialized by the Company, either by itself or with strategic partners. This includes its polyol sweeteners production technologies (specifically for producing xylitol and mannitol), followed by products from its human milk oligosaccharides program (such as 2'-fucosyllactose).

Management

Leadership: David C. Demirjian, Ph.D., President & CEO; Director; Founder. Dr. Demirjian was previously Founder and President of ThermoGen, Inc., a Chicago-based bioprocess company that pioneered the use of biocatalysis technologies for the production of pharmaceutical intermediates and chiral chemicals. Dr. Demirjian was subsequently Vice President of Technology Strategy for MediChem Life Sciences (MCLS) after its acquisition of ThermoGen in May 2000. At MCLS he oversaw the strategic development and integration of MCLS's drug discovery and development platform. He was also one of the leaders of MCLS's IPO, raising over \$52 MM in October 2000 and served as a Director until its acquisition in May 2002 by deCode Genetics. He holds a Ph.D. in Genetics from The University of Chicago and B.S.A. in Molecular Biology from The University of Michigan.

Rajni Aneja, Vice President, Corporate Development; Founder. Ms. Aneja was previously VP, Corporate Development, MediChem Life Sciences (MCLS) where she was responsible for negotiation and oversight of MCLS's strategic relationships, including MCLS's alliance with the global fine chemicals manufacturer, Degussa AG. In her prior position of VP, Corporate Development, ThermoGen she had an instrumental role in the 2000 merger between MediChem Research and ThermoGen, to form MCLS. She has more than twenty years of experience in commercializing early stage life sciences products. Ms. Aneja holds a M.B.A. in Business Economics and Finance from The University of Chicago Booth School of Business and an M.S. in Biochemistry from Cornell University.

Scientific Advisory Board:

Robin Cooper, Ph.D., D.Sc., Snr. VP, Pharmaceutical Sciences, Rigel Pharmaceuticals (ret.)
David Dodds, Ph.D., Dodds and Associates. (prev. Bristol Myers Squibb, Schering-Plough, Sepracor).
William Dowd, Ph. D., Global R&D Director, Industrial Biotechnology, Dow Chemicals (ret.).
Ian Fotheringham, Ph.D. President, Ingenza, Ltd. (prev. NSC Technologies and NutraSweet).

Product Pipeline

1. Primary Product Opportunity: Xylitol. Near-term revenue opportunities exist for zuChem's proprietary bioprocess to manufacture xylitol. Due to its flavor profile and beneficial oral hygiene characteristics, xylitol is the most prevalent sweetener for gum and other confectionary products in Asia and its use is growing in Europe. Growth in the U.S., however, has been limited due to a shortage of the current raw material (pure xylose) needed to produce xylitol via chemical hydrogenation methods. By using an alternative, more readily available, and less expensive renewable feedstock (i.e. waste hemicellulose), zuChem's fermentation-based process technology overcomes this limitation. The zuChem process is projected to significantly expand the market for xylitol by ensuring a stable product supply, thereby enabling the launch of new candy and dental hygiene products containing xylitol.

2. Secondary Product Opportunities: Human Milk Oligosaccharides (HMOs). Infant formula is generally lacking in Human Milk Oligosaccharides (HMOs) - sugar-based components of human breast milk. These short chains of sugars can help improve infant immunity and cognitive development. A significant market opportunity exists for differentiated infant formula products that contain these missing HMOs. Researchers at zuChem have been developing a deep portfolio of proprietary bioprocess technologies to produce oligosaccharides in high yield and volume from inexpensive agricultural and dairy sugars. The Company is currently focusing on expanding its portfolio of HMOs (including 2'-fucosyllactose, 3'-fucosyllactose, lacto-N-neofucopentaose, and related molecules) available for evaluation by strategic partners, and improving its production system to enable the large-scale commercial launch of these products.