

# Laetose



## TECHNOLOGY DESCRIPTION

Laetose technology is derived from a unique combination of sugar and inositol, which demonstrates the ability to inhibit the inflammatory and metabolic response of sugar alone.

Use of Laetose in a daily diet, compared to sugar, could result in 30% lower sugar consumption and lower glycemic index/load<sup>1</sup>.

## PATENTS/INTELLECTUAL PROPERTY SUMMARY

Laetose U.S. composition and method patent is filed, published, and awaiting issue. The patent filing includes the novel impact of multiple sugars and inositol on anti-TNF alpha effects. Patent Cooperation Treaty (PCT) filing is ongoing.

## MARKET OVERVIEW (SIZE, COMPETITION, TRENDS)

Global sugar production is at an all-time high feeding a \$140B refined U.S. sugar market<sup>2</sup>.

Market size and growth rate will vary by specific indication.

## VALUE PROPOSITION/BASIS FOR DIFFERENTIATION

Globally, obesity has almost doubled since 1980<sup>3</sup> and diabetes incidence is projected to be over 640MM people by 2040<sup>4</sup>.

Excess sugar consumption increases obesity, diabetes, and cardiovascular disease risk.

Compared to sugar, Laetose reduces calories by approximately 30 percent and has the potential to reduce glycemic index and glycemic load<sup>5</sup>.

Laetose is comprised of natural ingredients and provides flavor without an aftertaste.

Nutrition research conducted in the 1970s showed that different carbohydrates did not have the same effects on blood glucose (sugar) levels after eating. These findings challenged the general assumption that all complex carbohydrates (starches) produce lower blood glucose responses than simple sugars and questioned the clinical significance of carbohydrate exchange lists that have regulated the diets of people with diabetes for more than three decades.

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Carbohydrate exchange lists assume that portions of different foods containing equal amounts of carbohydrate will produce the same blood glucose response. Consequently, the glycemic index (GI) was developed in order to rank equal carbohydrate portions of foods according to the extent to which they increase blood glucose levels after being eaten. Foods with a high GI value contain rapidly digested carbohydrate, which produces a rapid and large rise and fall in the level of blood glucose. In contrast, foods with a low GI value contain slowly digested carbohydrate, which produces a gradual, relatively low rise in the level of blood glucose<sup>6</sup>.

A study<sup>7</sup> in healthy human volunteers demonstrated Laetose induces lower and glycemic load (GL) than sugar glucose. It also demonstrated the blood sugar spike from Laetose was less than glucose.

#### PRODUCT DEVELOPMENT STATUS

Product development, stability, and manufacturing capability are complete.

#### FINANCIALS

Time-to-market and time-to-revenue are contingent on target claims and legal and regulatory requirements.

#### POTENTIAL AGREEMENT STRUCTURE(S)

Laetose is available for worldwide licensing, joint venture, and/or co-development agreements.

#### COMPANY SUMMARY AND CONTACT INFORMATION

Impact BioMedical, Inc. is a wholly-owned subsidiary of Document Security Systems, Inc. and drives mission-oriented research and development that addresses unmet needs in human healthcare.

Impact BioMedical, Inc. has worldwide rights to Laetose technology and is seeking partners to develop and/or commercialize this technology.

#### For more information:

<https://www.impbio.com>

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<sup>1,5,7</sup> Source: *Company data on file*

<sup>2</sup> Source: *Sugar Alliance Organization*

<sup>3</sup> Source: *World Health Organization*

<sup>4</sup> Source: *Diabetes Atlas*

<sup>6</sup> Source: *University of Sydney Glycemic Index Research Service*