# Breakthrough for Bio-Derived Butadiene ? Metabolic Toolkit for Gas Fermentation

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A new metabolic ‘toolkit’ enables the production of bio-derived butadiene: Invista and Lanza Tech announce a breakthrough in technology development for a new direct, 2-step processes for butadieneutilizing gas-fermentation.

The metabolic toolkit integrates detailed knowledge about a bacterium’s genetic configuration with the tools to precisely customize that configuration in order to make a particular product, together with a model to accurately predict the performance of the bacterium. This work is in an early stage of development with an aim to commercialize within the next several years.

Butadiene, a key intermediate chemical used in the production of synthetic rubber and various plastics, is used by Invista in its proprietary, butadiene-based adiponitrile (ADN) production technologies. ADN is a critical intermediate chemical used in the manufacture of nylon 6,6.

“This development underscores the progress made on butadiene production via gas-fermentation technology as a result of Invista’s collaboration with Lanza Tech,” said Bill Greenfield, president of Invista’s Intermediates business. “While we are still early in the process, we are encouraged by this breakthrough. Our ongoing collaboration will continue to leverage the strong biotechnology capabilities of both companies.”

***The Benefits of a Metabolic Toolkit***

This breakthrough highlights the value a metabolic toolkit can bring in developing new pathways for bio-based and bio-derived chemical production. According to Jennifer Holmgren, CEO of Lanza Tech, “The work with Invista represents a significant step in integrating the chemicals supply chain into a circular economy model. By utilizing waste carbon resources, we are decoupling the production of butadienefrom today’s commodity feedstocks.”

Invista believes biotechnology has the potential to significantly improve the cost and availability of several chemicals and raw materials that are used to produce its current products. It views gas fermentation as a key enabling technology that will allow the use of potentially advantaged gas feedstocks, such as waste industrial gases including carbon monoxide and carbon dioxide.

*SOURCE Process Worldwide Online*