

# Natural gas as a feedstock for bio-production

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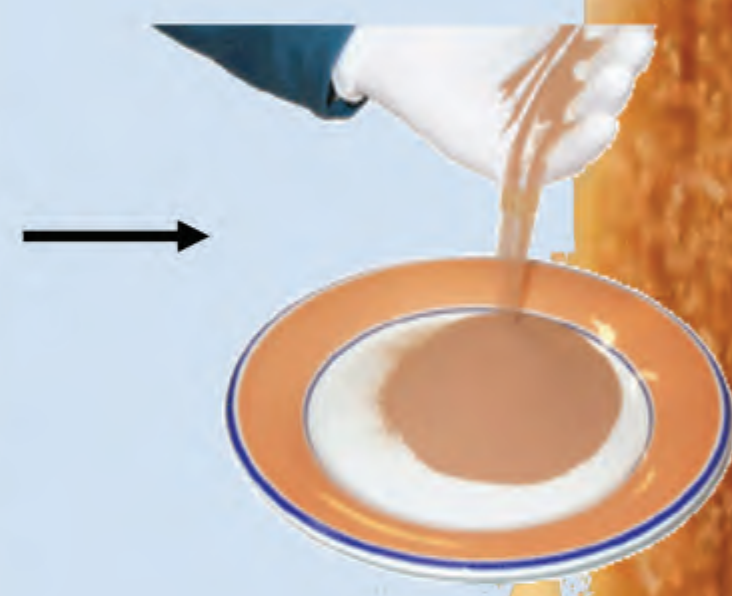
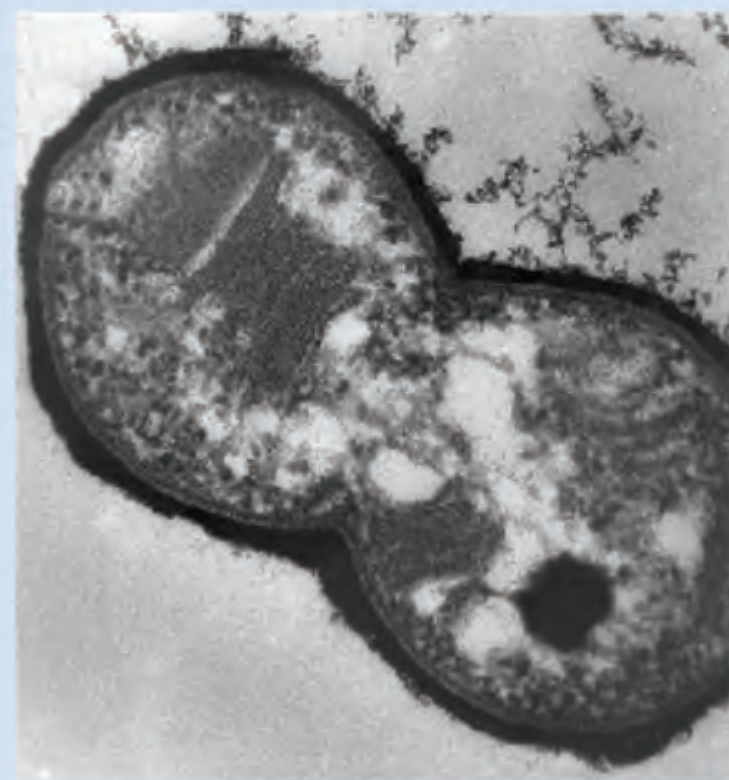
1) Calysta AS, 2) Calysta Inc., 3) International Research Institute of Stavanger

## Introduction

Calysta has developed a large scale gas based fermentation technology utilizing methane for production of bio chemicals. Using natural gas as the sole source of carbon and energy economic production of numerous compounds can be achieved. The Calysta technology includes production of biomass for nutritional purposes, BioProtein<sup>®</sup>, as well as GMO technology for production chemicals.

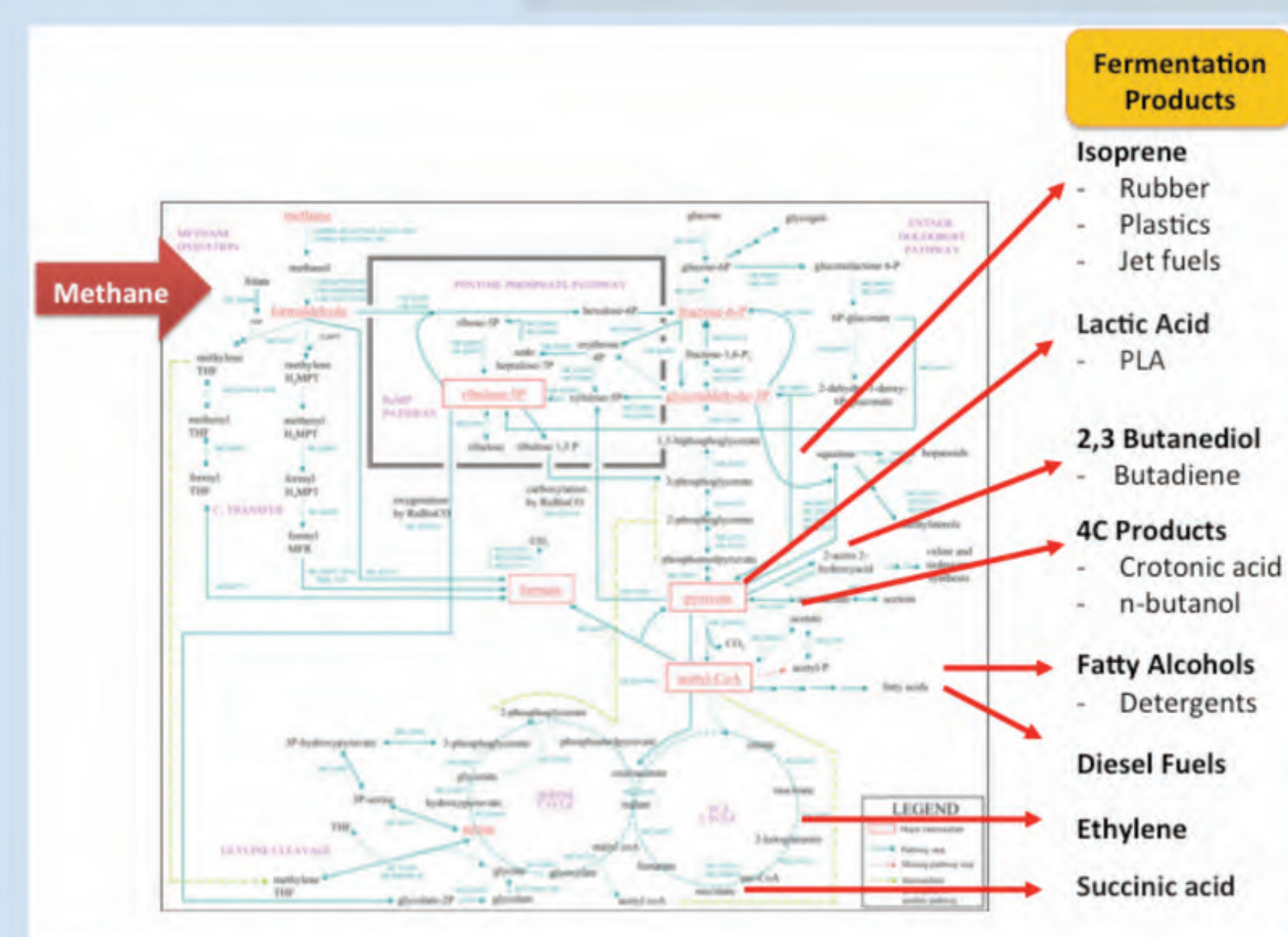
### Nutrition

Methane  
Oxygen  
Ammonia  
Minerals



The BioProtein<sup>®</sup> technology is based on microorganisms that utilize natural gas to produce a protein rich substance for nutritional use.

### Chemicals



Platform chemicals are produced by gene modification technology to convert metabolic intermediates in the cell into platform chemicals.

## Markets

### Nutrition

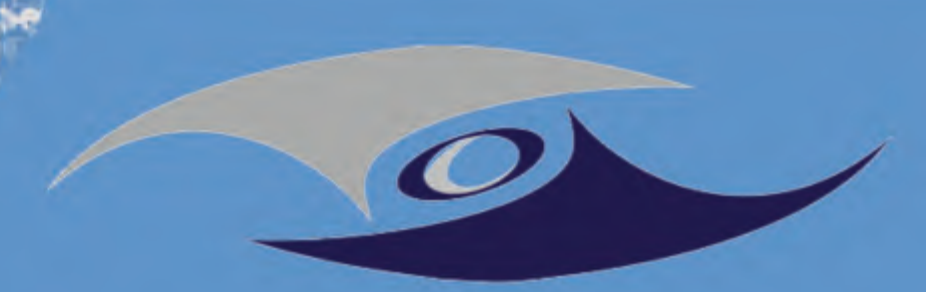
Calysta is focusing on conversion of methane to single cell proteins, where the product has found applications as a nutritional high protein ingredient. BioProtein<sup>®</sup> has obtained registration for use in EU. This business segment is focused on aquaculture species as salmon or trout, but excellent performance in life stock animals such as chicken and pigs has been obtained.

### Platform Chemicals

GMO technology enables Calysta to add new enzyme pathways into the bacterium, for the production of platform chemicals. Calysta cooperates with producers of bio-chemicals for the conversion of metabolic intermediates into platform chemicals such as organic acids for the production of compostable plastics.

**CALYSTA**

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**BioProtein AS**