

A new soy peptone from Solabia

A new technology and approach to peptone development.

Soy Evolution A166300 is now available in samples for evaluation and in industrial volumes.

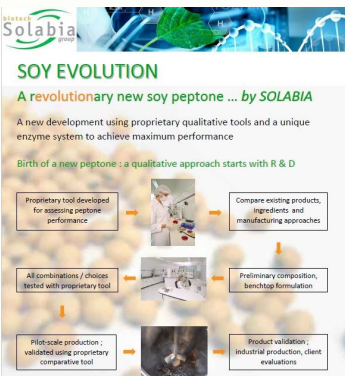
This peptone represents the first peptone from Solabia developed using a **proprietary test to compare peptone growth**. It was determined that such a test was necessary in order to optimize time, materials and provide a tangible record of development and performance. As a result, this peptone has **exceptional growth potential** and a **wide**

range of microbes that respond positively to media conceived around it.

Unlike other peptones at Solabia, Soy Evolution uses a **cascade of enzymes** reacting in synergy. The resulting

molecular weight and amino acid profiles provide excellent results for both **Gram positive** and **Gram negative** and **anaerobic** strains. The peptone is **Kosher** and will be **Halal** certified, and uses IP soy flour in order to address **GMO security issues**. All other necessary **traceability documents** are available.

In addition, its **limpidity** also makes it a prime candidate for use in culture media, where clarity and color are important factors.



Soy Evolution : the first peptone from Solabia produced using a proprietary tool for assessing peptone activity, allowing a window into peptone performance that results in :

- enhancing the formulation to achieve maximum results
- improving the production process while avoiding inhibiting elements
- optimizing the technology transfer to industrial scale.

Soy Evolution : new peptones first start with good R & D

Manufacturing at Solabia during COVID 19

Risk mitigation has taken on a new meaning during the COVID 19 pandemic. Solabia, with two manufacturing sites, has proved this is a critical element.

The COVID 19 pandemic has caused significant stress and chaos throughout the industrial world, and biotechnology, diagnostics and fermentation using peptones have not been spared. Solabia has been fortunate in that its two manufacturing plants, in Beauvais, France and Maringa, Brazil have continued to produce,

therefore honoring all orders and client commitments, even increasing capacity to meet increased customer requests for inventory during uncertain times.



Solabia Brazil (Maringa)

2 manufacturing sites limit risks of production shortages and enables each site to focus on their specialty

products ; meat and casein peptones in Brazil, plant peptones in France.



Solabia France (Beauvais)

Employees of both facilities are to be commended for their commitment under difficult conditions.

Summary :

- ◆ **Soy Evolution** : a unique, new soy peptone
- ◆ **Risk mitigation** and COVID 19
- ◆ **Soy Evolution** and industrially-important strains
- ◆ **Bacillus subtilis** - a key role in industry
- ◆ **Probiotics** and **Coronavirus**



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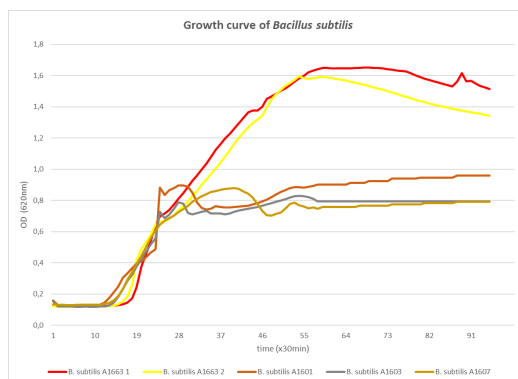
“... EXCELLENT GROWTH HAS BEEN OBSERVED WITH *LACTOBACILLUS CASEI* (A PROBIOTIC AND WIDELY-USED DAIRY STRAIN) AND WITH *BACILLUS SUBTILIS* (USED AS “BACTERIAL FACTORIES”)...”

PROBIOTIC-RELEVANT AND INDUSTRIALLY-IMPORTANT STRAINS HAVE BEEN TESTED AND PERFORMED WELL WITH THE NEW SOY EVOLUTION.

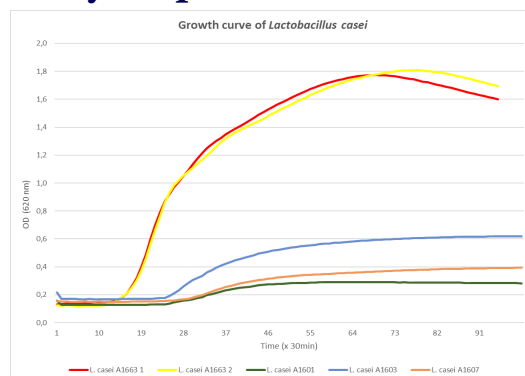
Soy Evolution and industrially important strains

Solabia’s newest soy peptone, **Soy Evolution**, code **A166300** has been extensively tested as part of its development, and in particular has shown excellent growth for several industrially-important strains.

Excellent growth has been observed with *Lactobacillus casei* (a probiotic and widely-used dairy strain) and with *Bacillus subtilis* (used as “bacterial factories” e.g. enzyme production). Other strains have shown equally promising results for a variety of applications.



Bioscreen results (red & yellow) for *Bacillus subtilis* Comparison to other Solabia soy peptones



Bioscreen results (red & yellow) for *Lactobacillus casei* Comparison to other Solabia soy peptones

Bioscreen testing provides a valuable platform for testing peptones with a variety of strains. The strains used in Solabia studies were from both commercially available (**ATCC**) strains or **wild-type strains** originating from food & biotech industry isolates provided by customers or from our own Solabia / Biokar Diagnostics strain collection. As significant variety exists even between two strains of the same genus/species, customer-specific evaluations are always needed.



FRANCE COORDINATES :

SOLABIA HEADQUARTERS IN PANTIN, FRANCE HAS MOVED DOWN THE STREET INTO LARGER OFFICES ; THE CORPORATE LEADERSHIP, MARKETING AND COMMERCIAL TEAMS ARE LOCATED AT :

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Bacillus subtilis : a key role in industry

Bacillus subtilis is a Gram positive, rod-shaped, spore-forming bacterium found primarily in soil. In biotechnological applications, *B. subtilis* belongs to a category of bacterial known as “**cell factories**”. Indeed, *B. subtilis*, *Bacillus amyloliquefaciens* and *Bacillus licheniformis* have become most popular due to their excellent fermentation properties, high product yields (20 to 25 gram per litre) and the **complete lack of toxic by-products**.

Applications of *B. subtilis* include its role as a **fungicide** : the bacterium competes with and suppresses plant disease fungal organisms such as *Rhizoctonia*, *Fusarium*, *Aspergillus*, and others. As a cell factory, it is widely used in the production of **enzymes** including

α-Amylase, protease, cellulase, lipase, pullulanase and xylanase enzymes. It adapts well to changing environmental conditions and has the additional advantage of being considered **GRAS** (Generally recognized as safe organism). Its extracellular secretion feature enables **direct secretion** of high amounts of enzymes into **fermentation medium**, making for easy recovery.

INDUSTRIAL APPLICATIONS OF *BACILLIS SUBTILIS*

- FUNGICIDE
- BAKING
- BIOFUELS
- DETERGENTS
- FOOD PRODUCTION (NATTO)
- ANIMAL FEED SUPPLEMENTS

Probiotics and Coronavirus

Many **probiotic** manufacturers are seeing increased production as demand for probiotics have soared during the **COVID 19** pandemic. This may be linked to the very real perception that probiotics may **increase the immune response** and help ward off illness. However, an April 24 communiqué in the online edition of the highly respected British medical journal *The Lancet* suggests that there are only **indirect benefits** and probiotics are unlikely to have a direct effect specifically on severe acute respiratory syndrome caused by Coronavirus. Even if probiotics are indeed useful, more studies are needed to better our understanding of the pathogenesis of **SARS-CoV -2** and its effect on **gut microbiota**.