

# Alternative Proteins



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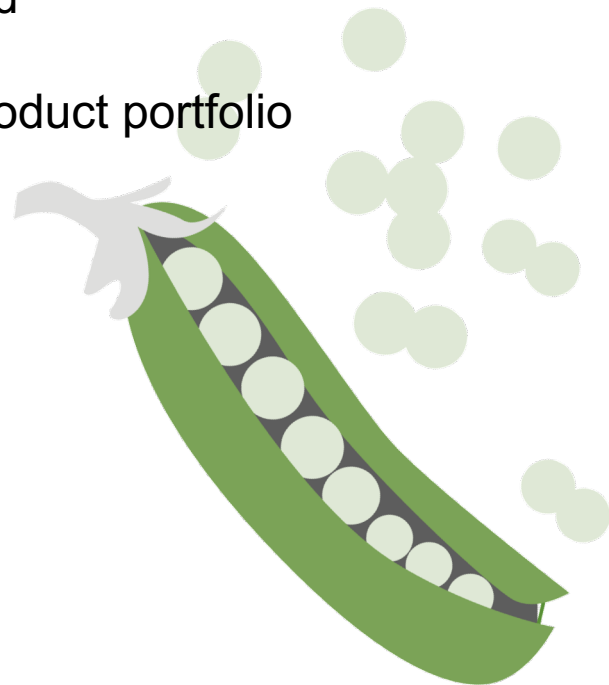
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# A Mega Trend No One Can Ignore

 Natural, more sustainable, ethical and healthier food

 Consumer trends are moving towards a different product portfolio

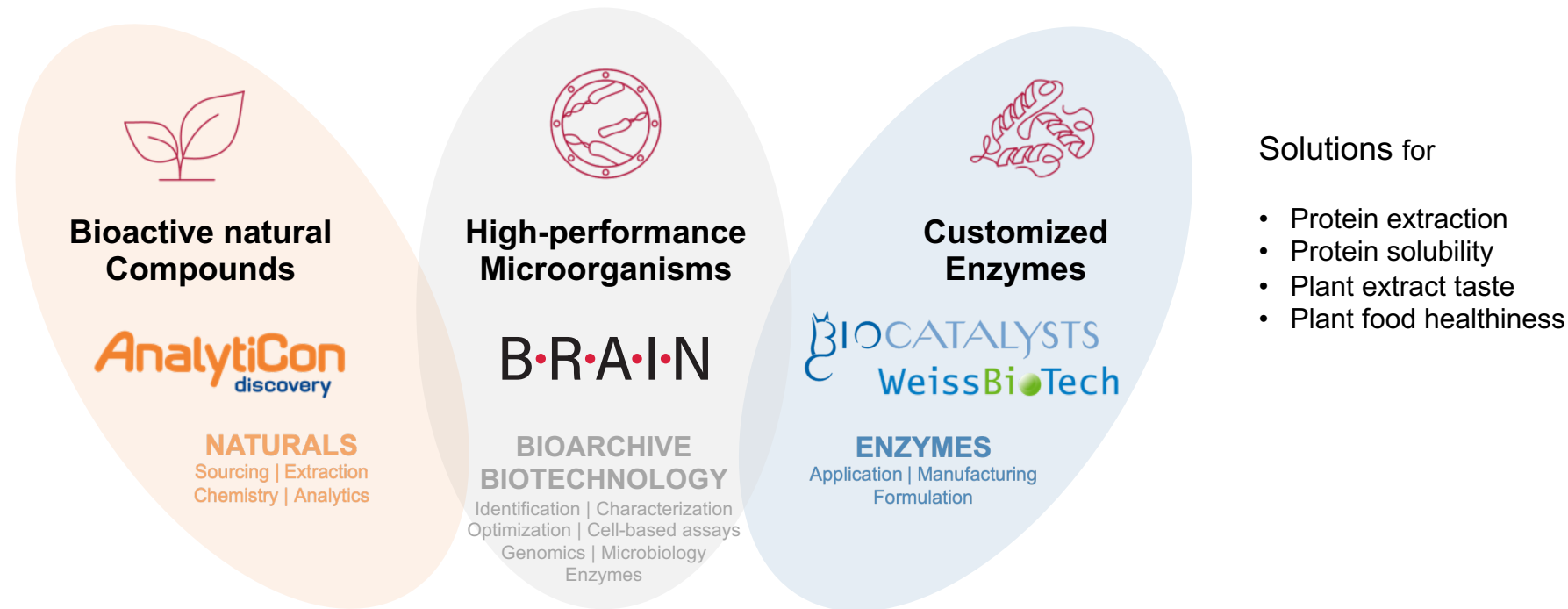
 Plant proteins are central to this trend



We can support you in different ways !




# Joining Forces to Extract Value From Nature

We master nature's toolkit to unlock the benefits of plants for better foods



# Plant Protein Challenges in the Food Ingredients Sector

Proteins are multi-functional - providing nutrients, colours, texture and flavours

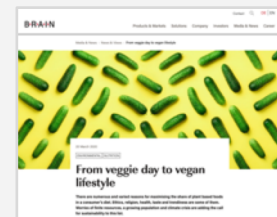
-  **Plant proteins need to be extracted from agricultural crops**
-  **Undesirable off-notes and flavours require attention**
-  **Being natural they age with time**

Let our technologies take care. And there is more on offer

-  **Natural solutions to preserve appeal**
-  **Natural solutions to avoid spoilage**
-  **Natural solutions to healthier ingredients**

You are missing something? Challenge us !

Read our related articles:



→ [From veggie day to vegan lifestyle](#)



→ [Challenges of Plant Proteins in Replacing Animal Proteins](#)

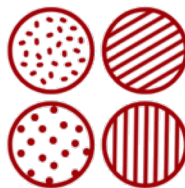
# Plant Protein Foods – What We Can Offer You

We can help, if you want to:



## Optimize the taste of your plant protein foods

- Increase savoury notes
- Identify off-tastes and find natural masking effectors
- Create complex flavours or remove disturbing notes through fermentation



## Protect freshness and appeal

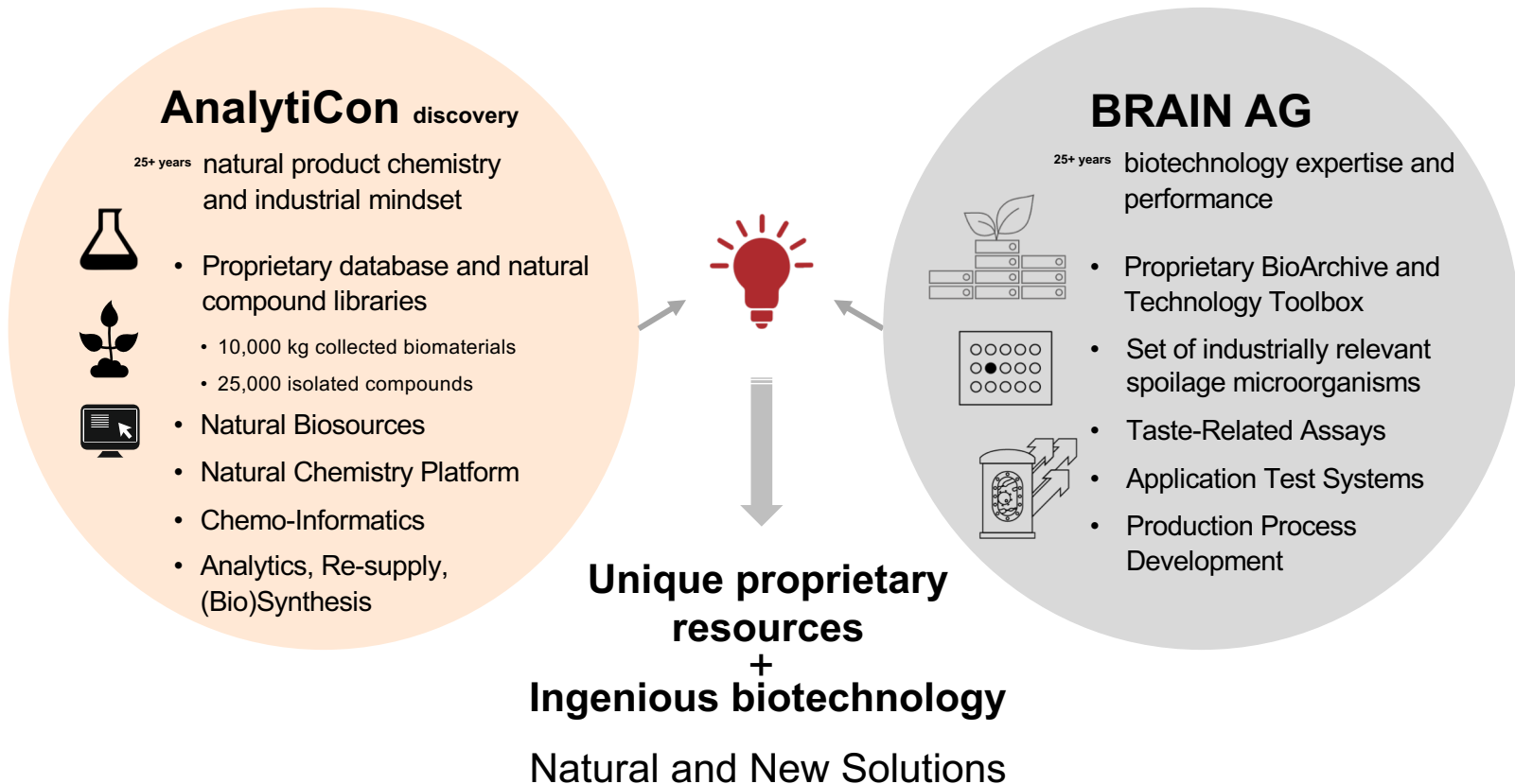
- Protect natural colors and flavours
- Suppress Maillard browning
- Prolong the shelflife with natural anti-spoilage technology (Fresco)



## Make your plant protein products healthier while retaining naturalness

- Improve protein solubility and digestability
- Reduce added salt (Salt-E)
- Reduce added sugar (DOLCE)

# From Biodiversity to Improved and Healthier Products



# Novel Bioactives – Adding Value to Plant-based Products

**Target** – Perception and Preservation



**Fermented Food** – novel flavours and value-added products



**Flavours** – mitigate unpleasant tastes using targeted off-taste blockers



**Taste** – improve mouthfeeling and taste through natural salivation enhancers



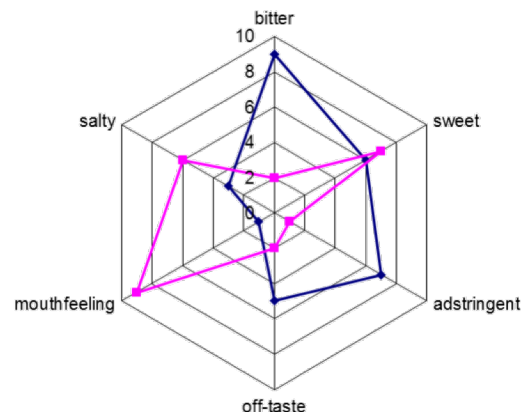
**Health Benefits** – reduce salt, not taste with natural salt taste enhancers



**Shelf Life Extension** – new, natural anti-oxidants to prevent off-tastes



**Product Safety** – natural preservation to maintain quality, safety and shelf life



**FRESCO**

**Salt...E**

**Natural AOX**

# Small Molecules – Big Effects



Salt...E



## Natural compounds enhancing salty taste of NaCl

- Proprietary cell-based assays (ScreenLine®) to **emulate sodium taste perception**
- Salt taste models
- Validated natural ingredients that enhance the taste of sodium chloride

## Natural compounds for KCl-taste improvement

- Proprietary cell-based assays (ScreenLine®) to **find natural KCl-off-taste modulators**
- KCl-taste model
- Tested ingredients improve the (salty) taste of KCl

# From Application Knowhow to Enzyme Manufacturing

## Biocatalysts Ltd

35+ years customer focus and enzyme production

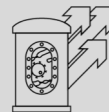
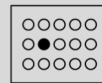


- 80+ enzyme products ready to use
- Proteins, Dairy, Egg, Flavour
- Customised production
- Multiple Expression Platforms
- ISO 9001, 14001, 45001, FSSC 22000
- Kosher & Halal certified



## BRAIN AG

25+ years biotechnology expertise and performance





- Proprietary BioArchive and Technology Toolbox
- Protein engineering
- Assay Development
- Application Test Systems
- Production Process Development

**Enzyme Know how  
+  
Production capabilities**  
**Customised Solutions**

# Enzymes – Tools to Unlock the Value in Plant Foods


## Target – Functionality

 **Protein Hydrolysates** – solubility, digestibility, side stream value

 **Flavours** – releasing or modifying natural taste improvers

 **Foam** – Increasing stability of oat/plant milks

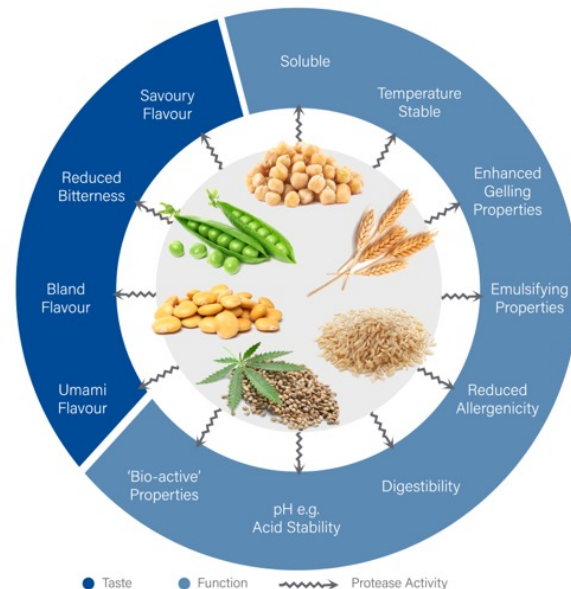
 **Colour** – Inhibiting Maillard reaction and browning in plant-based milks

 **Valorisation** – Reprocessing protein containing side streams – improving product extractions (vegetable oils)

 **Extraction** – Lysis of microalgae cell walls

 **Biopeptides** – Improving access

Benefits of using proteases to create plant protein hydrolysates



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# We Choose a Business Model Suiting Your Needs

Buy our off-the-shelf products or team up with us for the joint development of new and customized products that will differentiate your business



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## Product Sales

Choose from more than 100 of our Off-the-shelf products


















































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## Tailor-made Solutions

- (IP) license income
- milestone payments
- tech access fee
- strain/molecule sale
- joint ventures

# Track-Record of Industry Partnerships

More than 100 exclusive partner collaborations successfully completed

	 <p><b>Enzymes</b></p>	 <p><b>Microorganisms</b></p>	 <p><b>Bioactive Natural Compounds</b></p>
Industrial Partner*	          	                	               

\*confidential partnerships not disclosed

# Thank You for Your Attention.


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exceeding enzyme expectations

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