



OUR MISSION

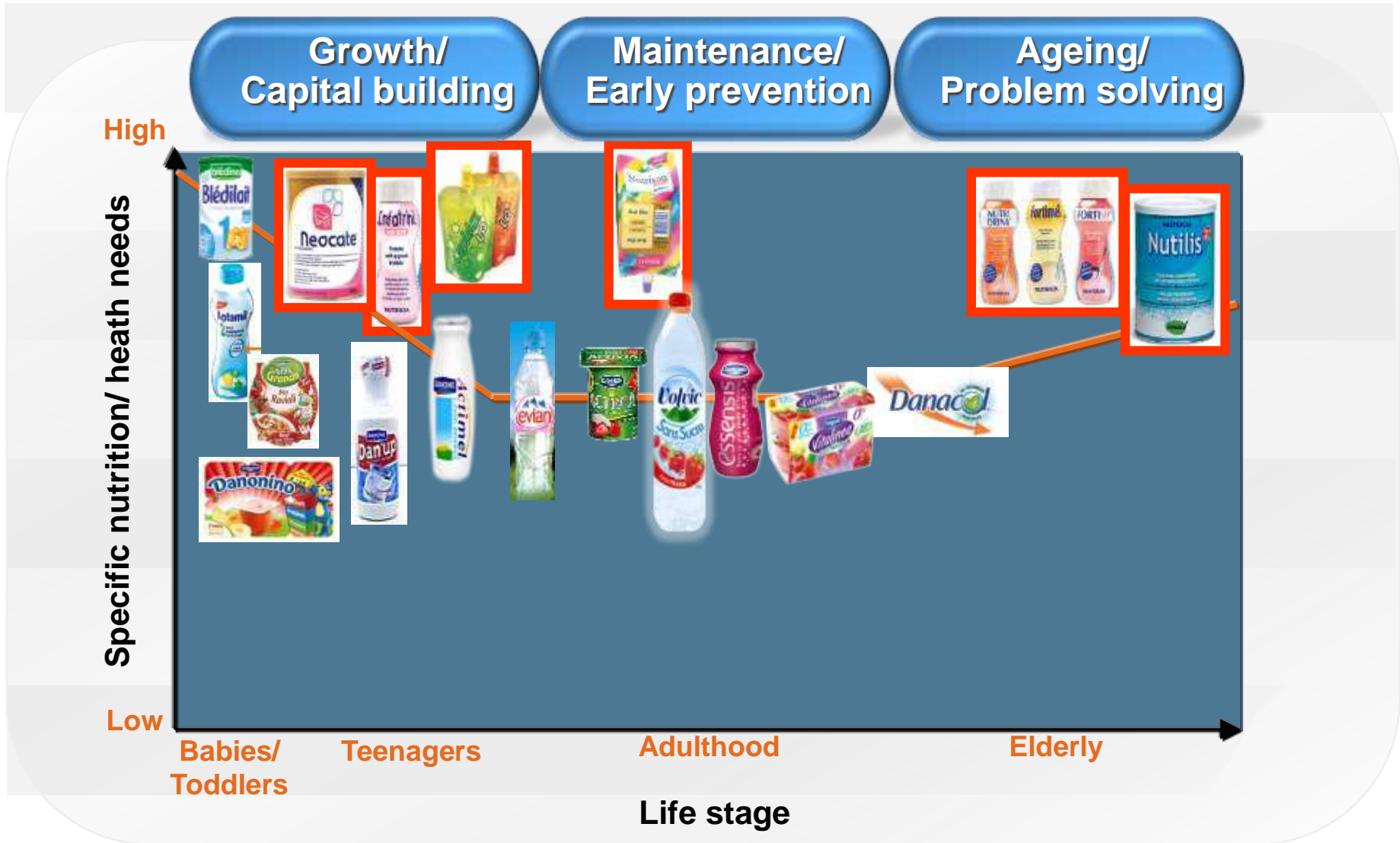


**To bring Health
through food and beverage
to the largest number of people**





A unique Active Health offer to the largest number of people, throughout their lives



Source: internal data



An Active Health based on a strong and expertised R&D





- 1.2% of turnover spent for R&D
- ~ **190 millions** euros of R&D investments
- **1150** R&D people in two major R&D centers
 - Palaiseau
 - Wagenigen



- **100%** of Danone research projects focused on Health and Nutrition
- **500** international scientific cooperations



We build leading market positions in our 4 categories

| | Fresh Dairy Mainly yogurt & assimilated products  | Packaged Water  | Babyfood  | Medical Nutrition  |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Worldwide ranking | #1 | #2 | #2* | #3* |
| Share of world market In value | 21% | 10%** | 14,9% | 16% |
| Relative size versus direct competitor | 4x | >1x | - | 0.6x |
| % of sales in leading positions | ~75% | ~70% | ~70% | - |

*n° 1 in Europe

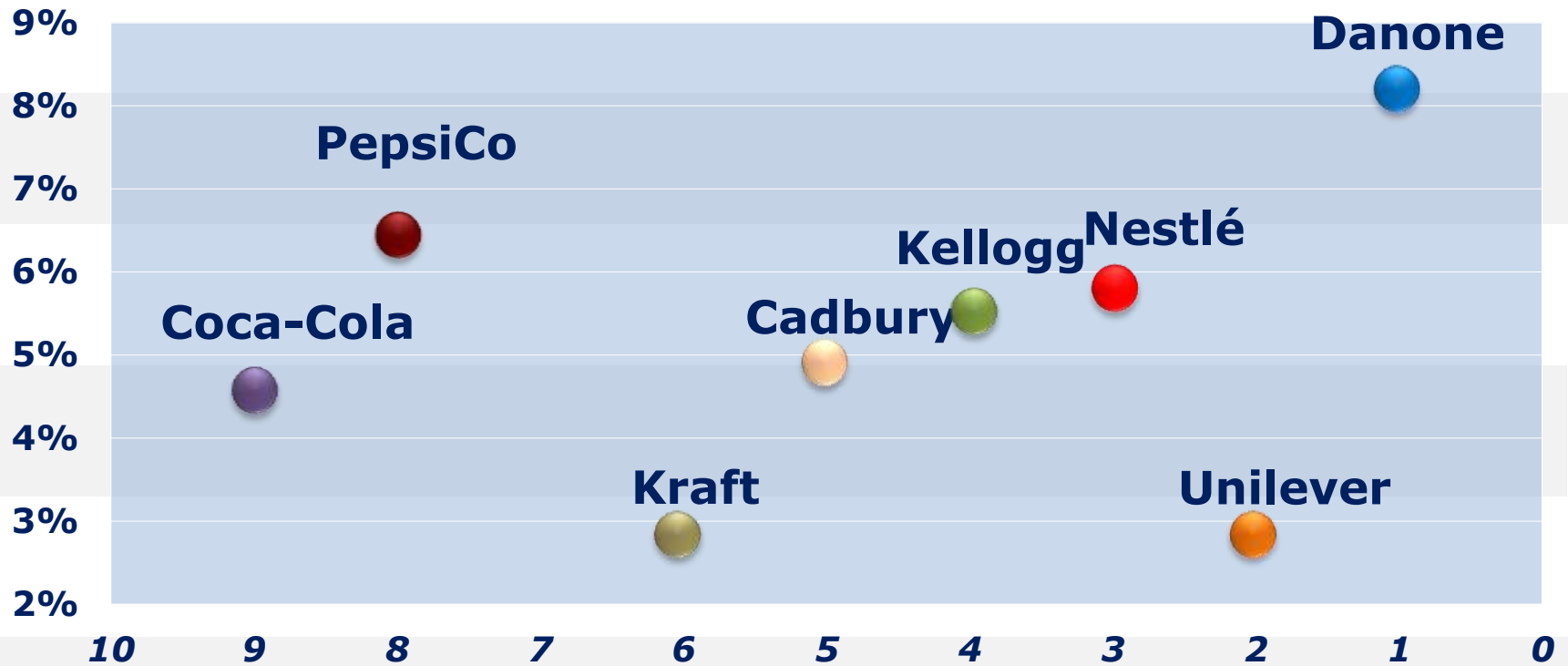
Danone has activities in 120 countries

**market shares in vol



Health Mission

Like-for-like growth
CAGR 03-07



Health ranking Food analyst

Benchmark among 10 largest food companies on "Obesity and Related Health Concerns", presented by JP Morgan and Insight in April 2008.



- **Life style,Diet and Physical activity**
- **Food Functionality**
- **Bioactive Compounds**
- **Probiotics and Health Benefits**
- **Future of probiotics**
- **Create a specific product with health benefit**



- Life style, Diet and Physical activity



Recent and spectacular upheavals

Hunter/ picker

Plants

Animals

**Physical work
+ hunt**

Short life span

Monoculture

Cereals

**Domestic
animals**

Physical work

**Decrease of
mortality**

Industrialization

Fat / Sugar

Domestic animals

**Intellectual work/
Hobbies**

**Acceleration of
Lifespan**

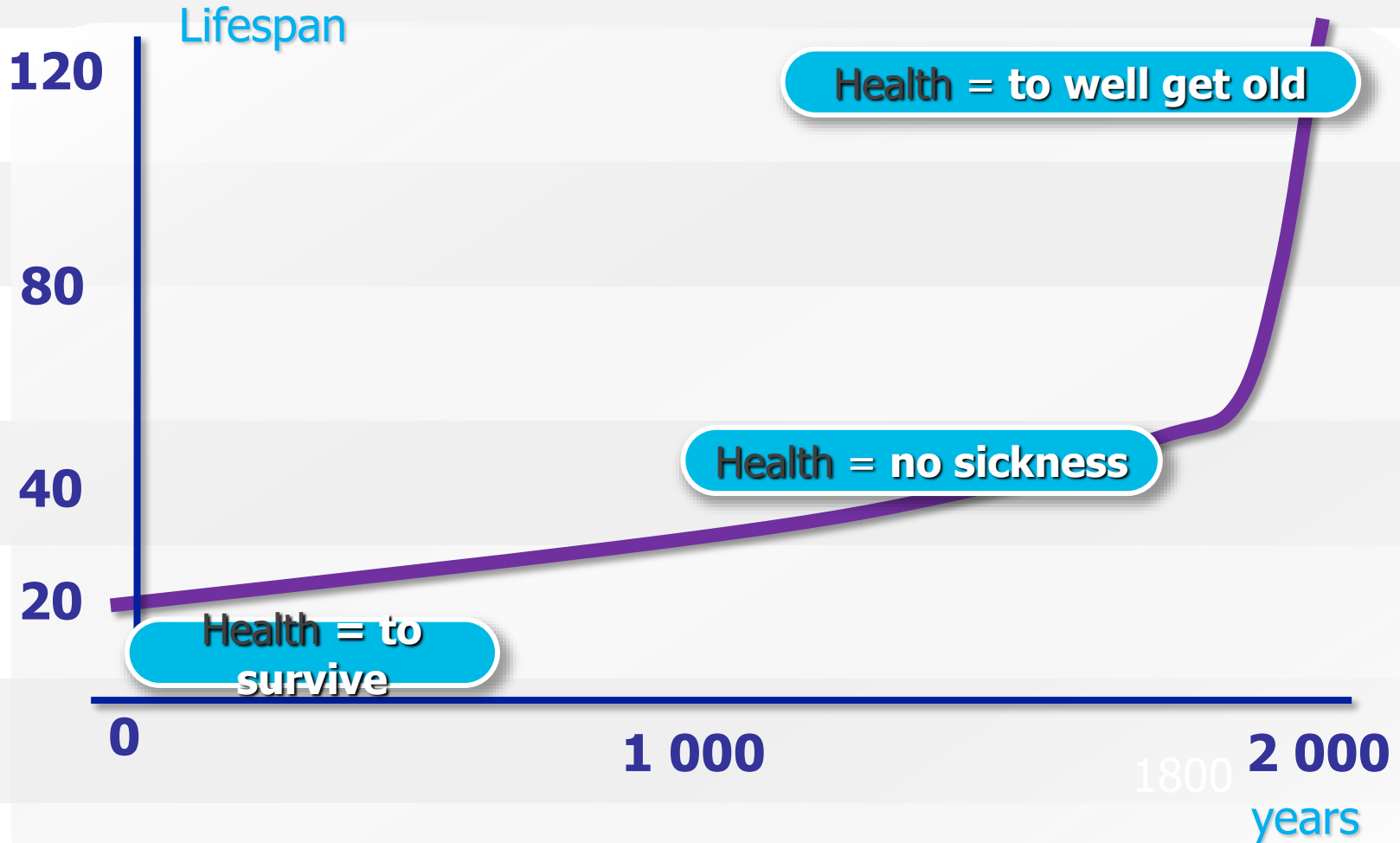
Obesity

Tomorrow





Acceleration of lifespan increase





- Life style,Diet and Physical activity
- **Food Functionality**





FOOD FUNCTIONALITY

LET FOOD BE YOUR MEDICINE

➤ A food that beneficially affects one or more target functions in the body beyond adequate nutritional effects in a way that is relevant to either an improved state of health and well-being and/or reduction of risk disease

- Exert health or physiological effect
- have the form of ordinary foods
- Consumed as a part of an ordinary diet.



FOOD FUNCTIONALITY: defining the concept

➤ From a practical point of view , functional food can be ;

➤ natural ,unmodified food

➤ A food in which one of the components has been enhanced through special growing conditions ,breeding and biotechnological means

➤ A food to which a component has been added to provide benefits

➤ A food in which a component has been modified by enzymatic , chemical or technological means to provide a benefit

➤ A food in which the bioavailability of a component has been modified

➤ A food to which a component has been removed by technological or biotechnological means so that to provide benefits not otherwise available

➤ A food to which a component has been replaced by an alternative component with favourable properties



Where can functional foods play a role ?

➤ Early development and growth

➤ Regulation of energy balance and body weight

➤ Cardiovascular function

➤ Defense against oxidative stress

➤ Digestive health

➤ Mental state and performance

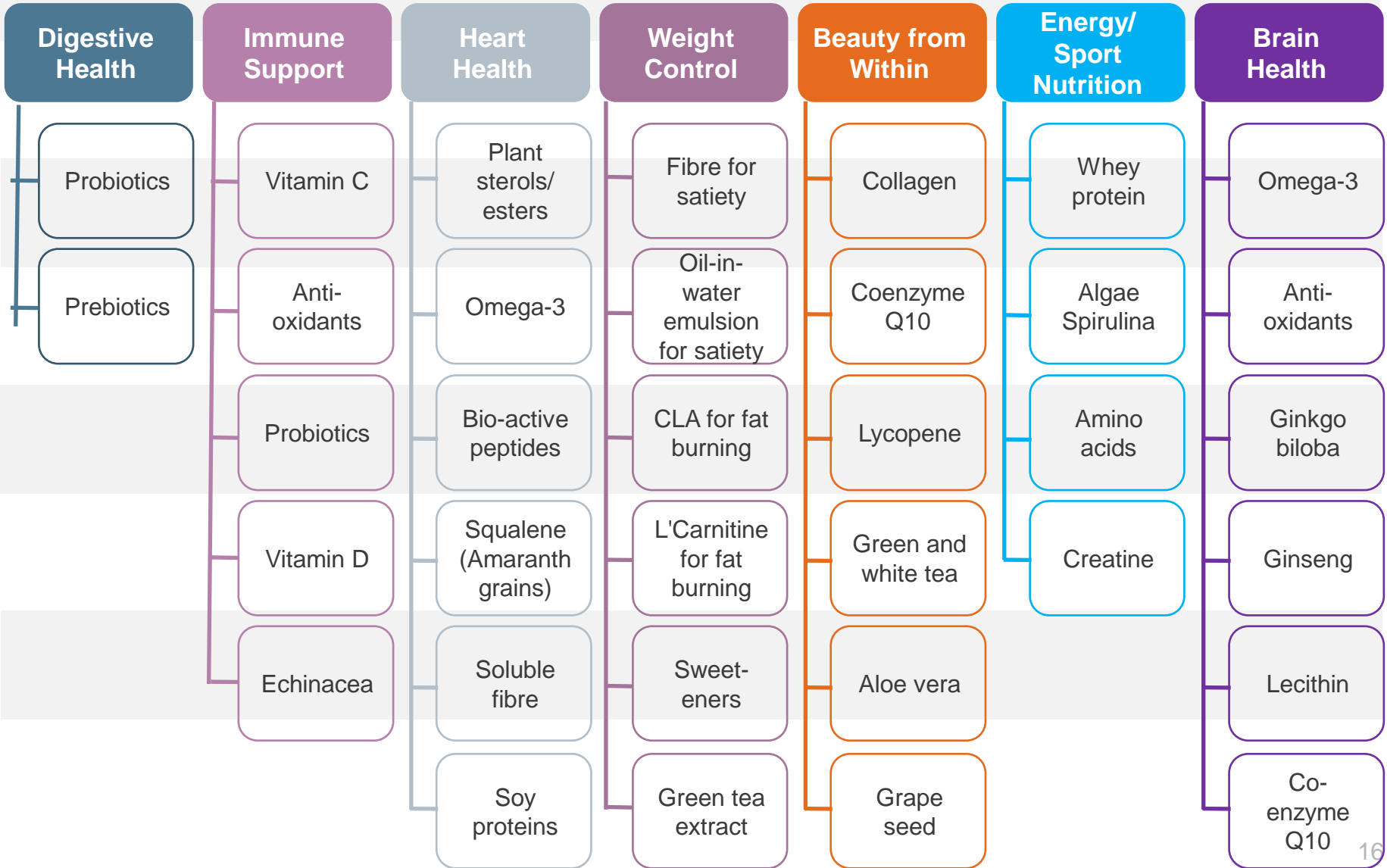
➤ Physical performance and fitness



- Life style,Diet and Physical activity
- Food Functionality
- Bioactive Compounds



Bioactive compounds





**HEALTH AND WELLNESS FOOD
AND BEVERAGES**
US\$547 billion

Organic
US\$26 billion

Fortified/Functional
US\$172 billion

Better for you
US\$163 billion

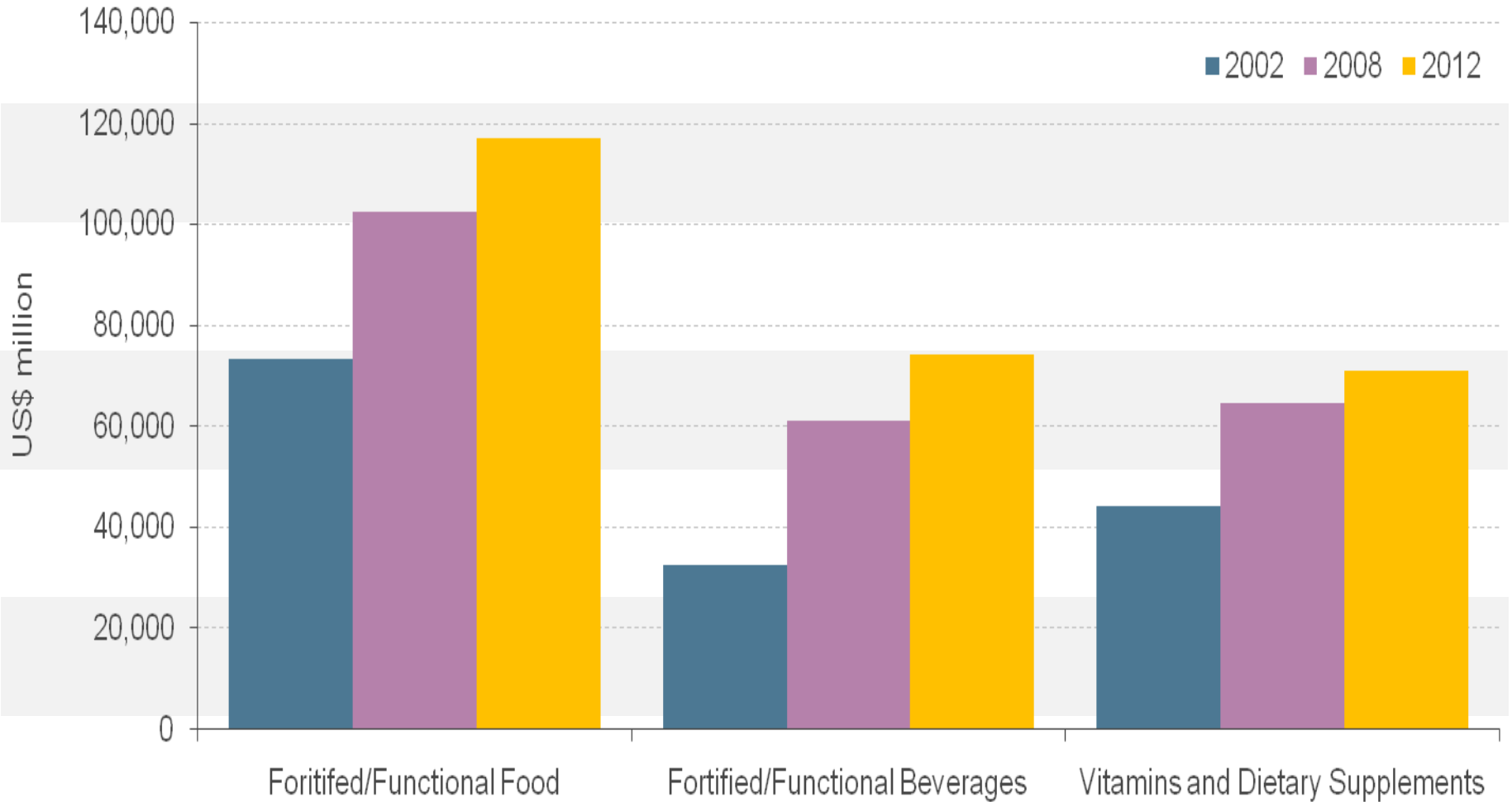
Naturally healthy
US\$180 billion

**Food intolerance
products**
US\$7 billion



Market Value Projection 2008-2012

Global Nutraceuticals Market Retail Value Sales 2002-2012

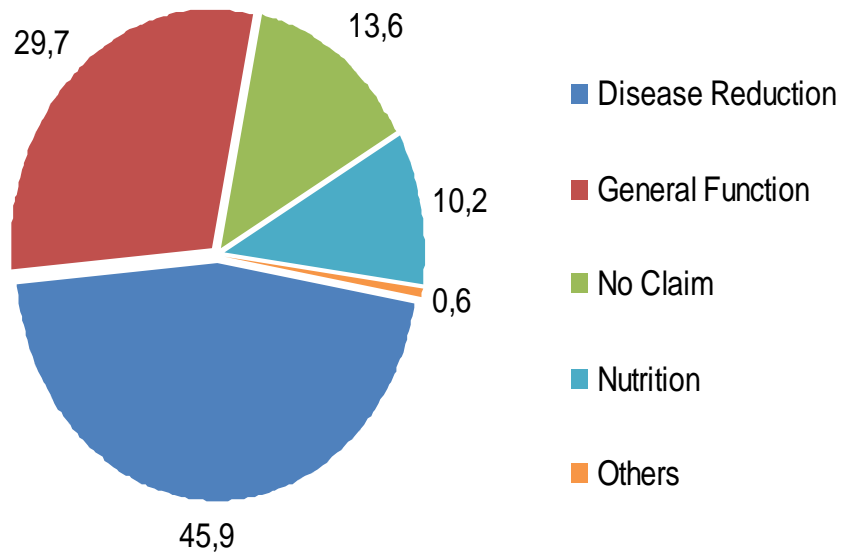




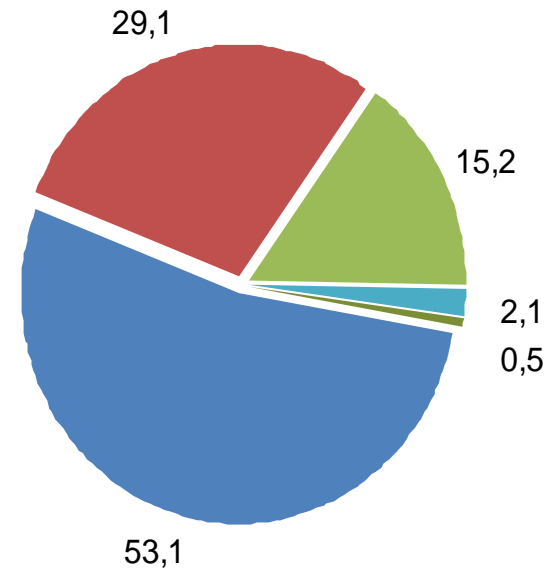
Disease Reduction Now Accounts for Over Half of All Claims

In recent years, health claims on health and wellness food became more tightly focused, shifting away from general functionality and nutritional benefit and towards very specific disease reduction claims.

Retail Value Sales of H&W Food and Beverages by Type of Claim (%) 2005



Retail Value Sales of H&W Food and Beverages by Type of Claim (%) 2009





- Life style,Diet and Physical activity

- Food Functionality

- Bioactive Compounds

- Probiotics and Health Benefits



Food and Agriculture Organization
of the United Nations

Amerian Córdoba Park Hotel,
Córdoba, Argentina
1-4 October 2001



World Health Organization

Health and Nutritional Properties of Probiotics in Food including Powder Milk with Live Lactic Acid Bacteria

Report of a Joint FAO/WHO Expert Consultation on
Evaluation of Health and Nutritional Properties of Probiotics in Food Including
Powder Milk with Live Lactic Acid Bacteria

**‘Live micro-organisms which
when administered in adequate amounts
confer a health benefit on the host’**



Health effects of probiotics must be demonstrated on a case by case basis, as their effects can be specific

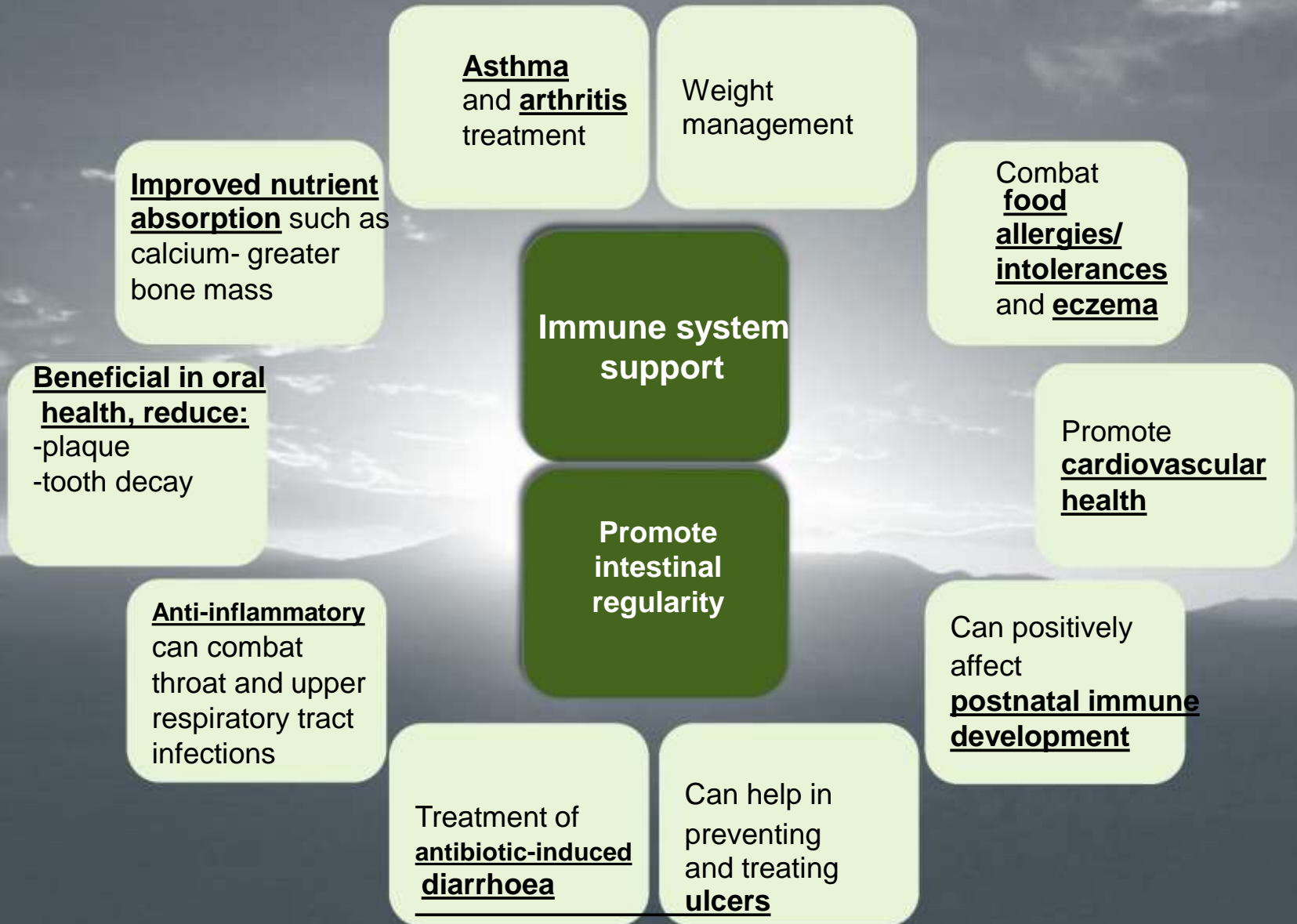
Probiotics and Their Potential Health Claims

Sylvia Santosa, BAsC, Edward Farnworth, PhD, and Peter J.H. Jones, PhD

Nutrition Reviews®, Vol. 64, No. 6 June 2006: 265–274

Many studies have attempted to identify specific positive health effects of probiotics. One of the challenges in generalizing health effects of probiotics is that different strains exert disparate effects on human health. As a result, the efficacy of one strain or species cannot necessarily be inferred from another. The objective of this review is to examine the current scientific literature that could be used as the basis for

Probiotics Beneficial in Preventive Healthcare Can help in





Probiotics at DANONE



Danone strain collection : > 3500 strains



Geographic diversity

Strains isolated from various countries



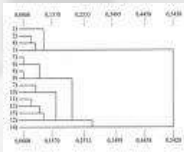
Ecosystems diversity

Strains isolated from dairy products and cereals



Temporal diversity

Strains isolated from 60's to nowadays



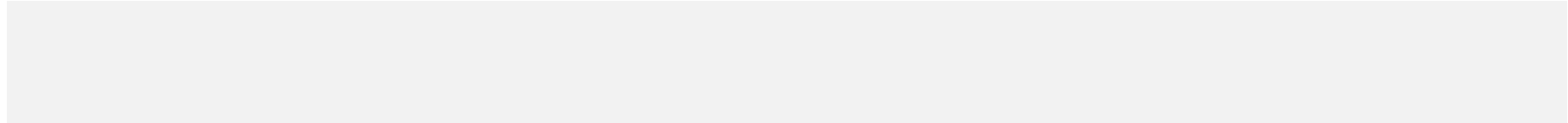
Genetic diversity :

77 species present in the collection

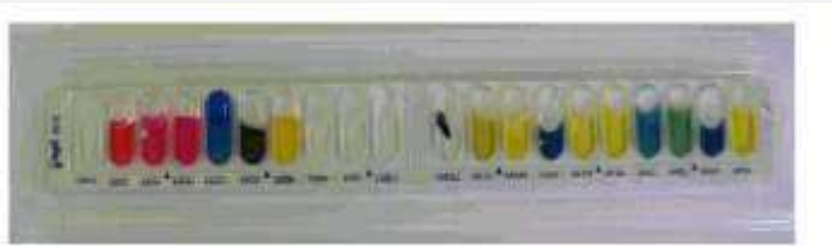
***Constant work to gain wider access to new strains
from different ecosystems and new species of interest***



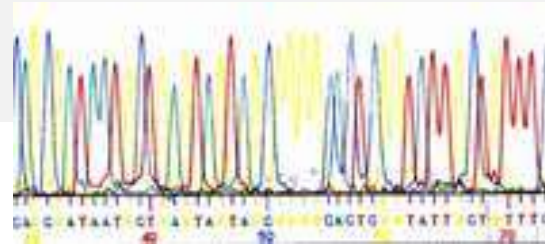
Which species does this strain belong to?



Before...
Only biochemical methods...
not really efficient...



Today...
molecular methods : 100% efficient

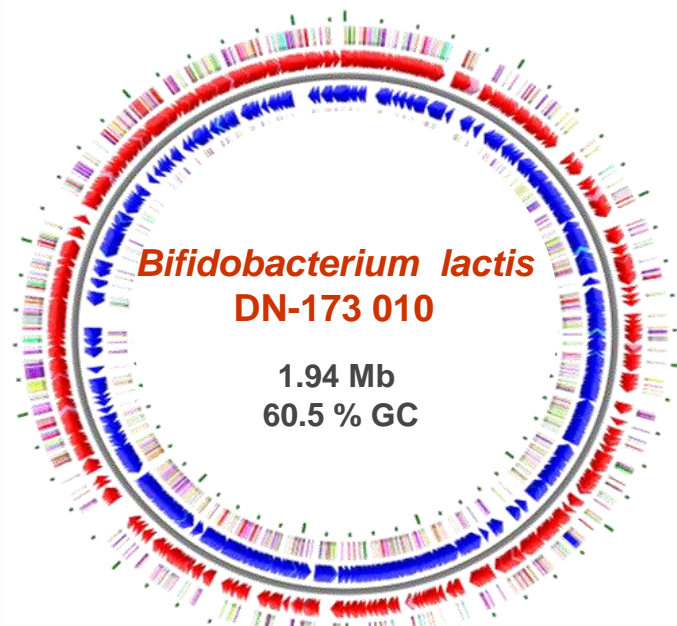


Growth in glucose, lactose, galactose and rhamnose □..
It should be a *Lactobacillus rhamnosus* □.
or a non typical *L. casei* ?

The 16S sequence shows 100% homology with *L. rhamnosus* in databanks.



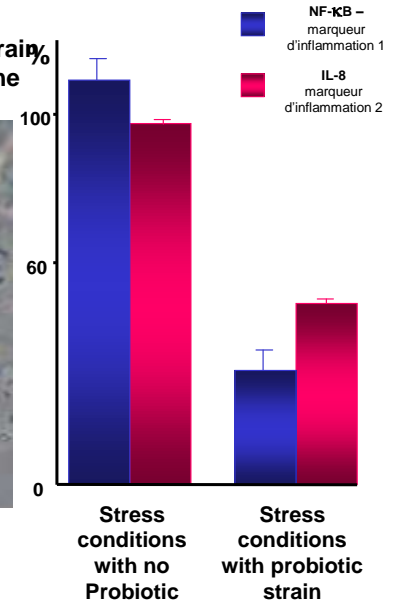
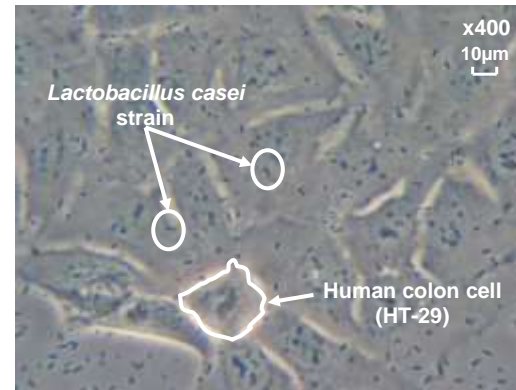
Probiotic Strain Functional Characterization



Work out images

Molecular Microbiology

Lactobacillus casei Immunitas™ Probiotic strain
in interaction with a Human intestinal cell-line



Biochemical & Cell Biology

> 50 functional tests in hands to select probiotics



- Life style,Diet and Physical activity

- Food Functionality

- Bioactive Compounds

- Probiotics and Health Benefits

- Future of probiotics

Future of Probiotics in Food and Beverages

□ Digestive health will become even more prominent

- New food products coming such as pro/prebiotic spreads and biscuits
- Delivery formats such as microencapsulation gain in prominence



□ Immune support

- Yogurts
- Mints supporting nasal and upper respiratory health
- Juice



□ Weight management:

- Cheese and fromage frais/quark: with probiotics and satiety-enhancing fibers, which also serve as a prebiotic
- Meal replacement slimming products: shakes, dairy-based drinks and snack bars



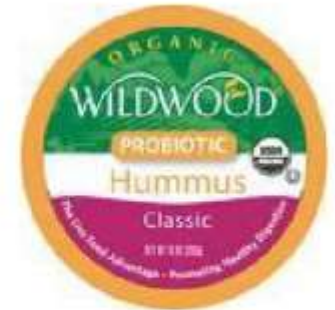
□ Oral health:

- Gum
- Sugar confectionary: lozenges, mints
- Trends expected to spread to oral hygiene products such as toothpaste and mouthwashes



New Formats Coming...

- **Naked Pizza** – a pro/prebiotic pizza, 2 slices provide 1bn CFU
- **Frozen Yoghurt**, Yogen Fruz, Canada
- **Mars –Galaxy shot** probiotic milk drink launched in the UK in 2009
- **Wildwoods“ Probiotic Soy Milk and Hummus**, Pulmuone Wildwood, US
- **Kids Boost Essential with probiotic straws**, Nestlé, US



Probiotic Supplements– Development Directions

- Digestive health
- Immune health against colds and flu
- Combination products:
 - Immune boosters (eg with Vitamin C, Zinc and Selenium)
 - Beauty from within (eg with Vitamin E and Green Tea Extract)
- Oral health
 - Chewable tablets protecting from bad breath, tooth decay
- Cardiovascular health
- Diabetes (type 2) prevention
- Probiotics for weight management





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Create a product with a specific health benefit ...

Research: ingredients & cultures, Sensory identity, Technology, Food Safety



Helps to regulate digestive health problems

Bloating
Intestinal transit
Women

Bifidobacterium lactis
DN 173 010

Product & Claim: ok
Need for human study

RCT studies with the end product



Proven & credible claim



Finally

TREATMENT OUT – PREVENTION IN!!!

Nature

- Well balanced diet
- Sugar, fat, salt reduction
- Organics

Nutraceuticals

- Digestive health
- Immune system support
- Heart health
- Weight Management
- Beauty from within
- Urinary tract health
- Brain health



Elie Metchnikoff 1907

THANK YOU FOR YOUR ATTENTION