

ProBion®
—— prolongation of life ——

Wasa Medicals stands for quality and innovation of production technique and patents.

Individually customized products with more than 30 years experience amongst therapists and clients.



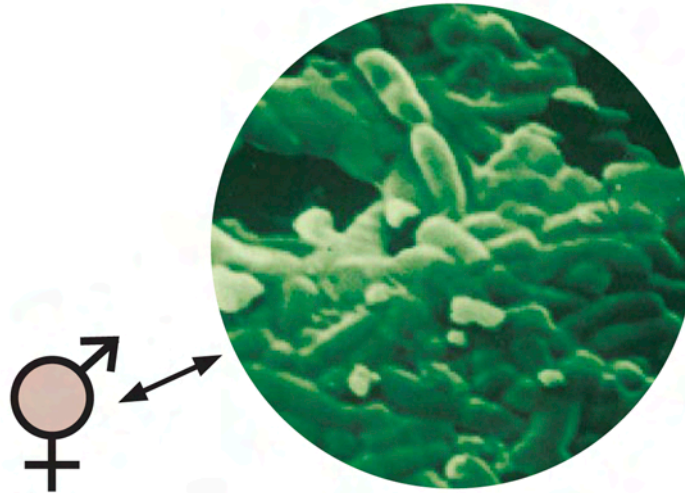
True life with ProBion!

**Swedish innovation with 10 x more sustainable and viable lactic acid bacteria
compared to conventional products!**

Healthy lactic acid bacteria with therapeutic quality!

Made in Sweden

**The intestinal microbes represent 150
times more genetic information
compared with the human body!**

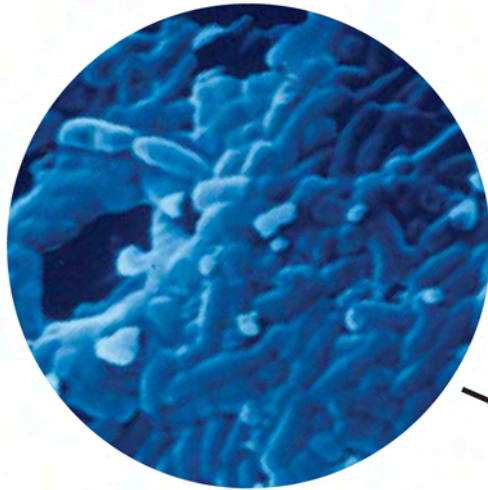


Human genom

Microbial genom

Human consumption of lactic acid bacteria was 10-100.000 times greater before modern preservation technique was introduced!

Past time



Present time

The genetic information included in human cells derives from 30 % bacteria and from 70 % virus equals old history of evolution.

95 % of these sequences are inactivated when embryogenesis is finished means that 5 % of our genetic information is used under normal conditions.

Virus sequences could however under specific conditions be reactivated and virus could emerge from human cells!

We are huge stores of viruses!

New genetic research shows that intestinal microbes interact or conduct the conditions for all human cells!

Lactic acid bacteria is an inheritance from the past – 3 billions years ago!

Healthy, viable and non-compromised Lactic acid bacteria is the basis for a paradigm shift in the science of health and diseases!

ProBion - new innovation with prolonged survival and exposure of Lactic acid bacteria in the digestion tract!



Probiotic View!

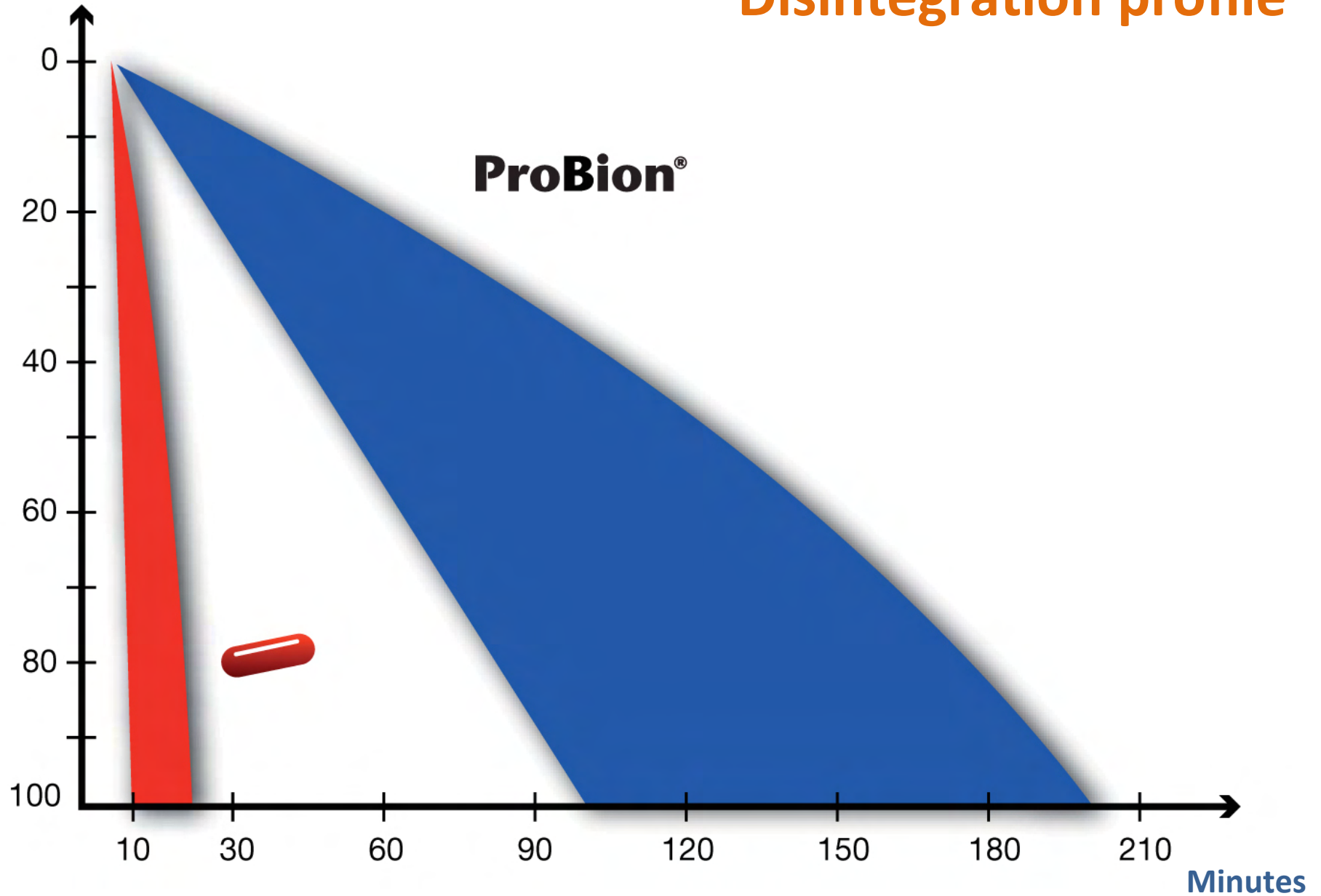
Choice of probiotics

- Probiotic viable, sustainable bacteria with non-compromised cell membranes
- The bacteria must survive the transport into the intestines
- Tablet with controlled release disintegration profile
- ProBion Clinica (**Wasa Medicals**)



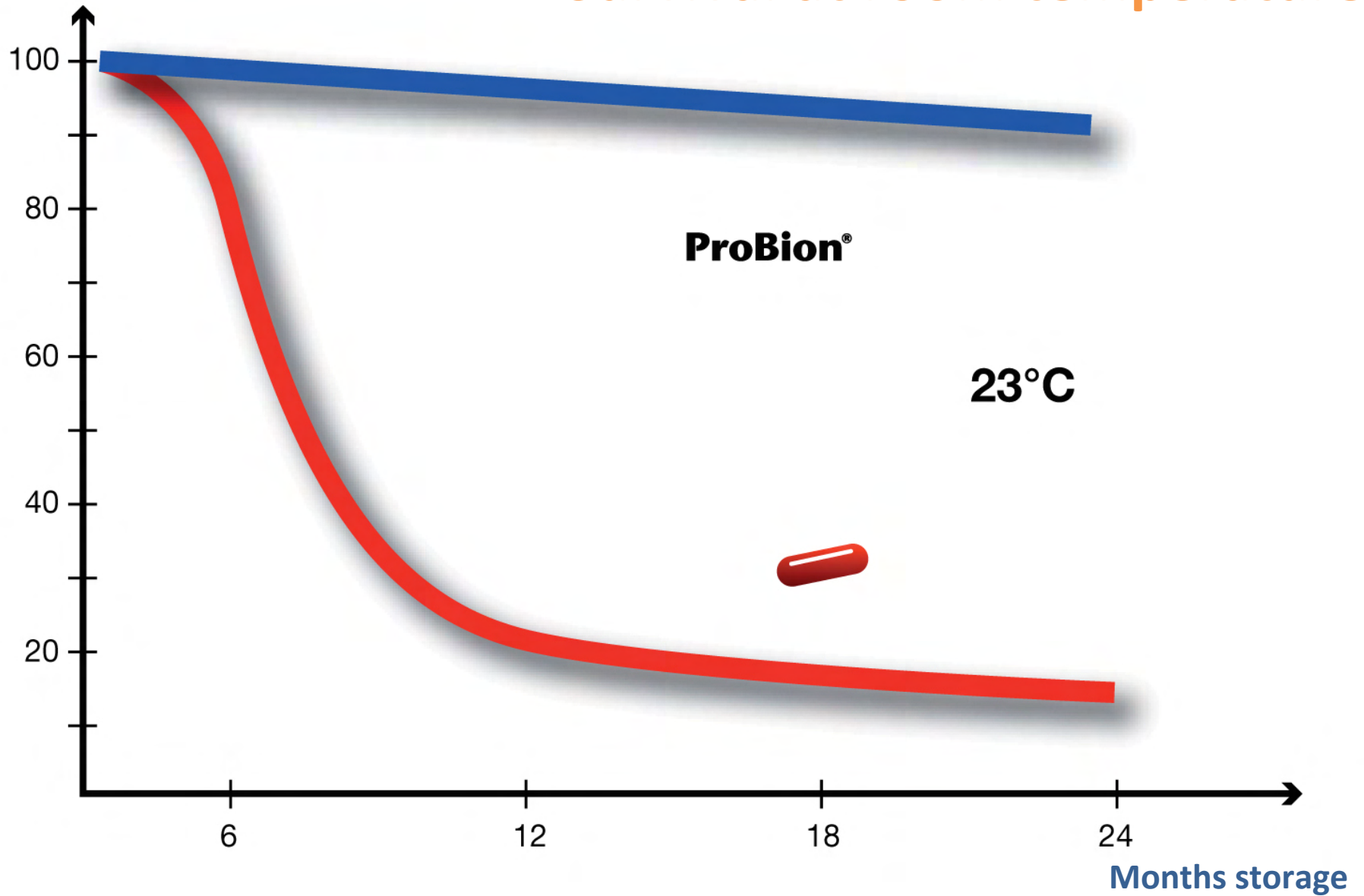
% of the tablet dissolved

Disintegration profile



% non-compromised cells

Survival at room temperature







Sometimes you must choose!

ProBion® - customized for most people.



ProBion is a food supplement that gives you healthy, viable and sustainable lactic acid bacteria.

Individually customized for the speedy or loose digestion.

ProBion[®] active



150 tablets/bottle

**Lactobacillus plantarum LP115 = 20-25 %, Lactobacillus paracasei
LPC37 = 20-25 %, Lactobacillus bulgaricus LB64 = 50-60 %**

2 billions lactic acid bacteria/tablet

1-3 tablets 1-4 x daily

ProBion is a food supplement that gives you healthy, viable and sustainable lactic acid bacteria.

Individually customized for the slow or constipated digestion.

ProBion[®] basic

150 tablets/bottle



Bifidobacterium lactis BL04 = 60-70 %, Lactobacillus plantarum LP115 = 15-20 %, Lactobacillus bulgaricus LB64 = 15-20 %

4 billions lactic acid bacteria/tablet

1-3 tablets 1-4 x daily

ProBion is a food supplement that gives you healthy, viable and sustainable lactic acid bacteria.

Individually customized for almost all types of digestion.

ProBion[®] clinica

50 tablets/bottle



**Bifidobacterium lactis BL04 = 70-80 %, Lactobacillus acidophilus
NCFM = 20-30 %**

10 billions lactic acid bacteria/tablet

1 tablet 1-2 x daily

ProBion is a food supplement that gives you healthy, viable and sustainable lactic acid bacteria.

Individually customized for almost all types of digestion.

ProBion[®] daily

150 tablets/bottle



Bifidobacterium lactis BL04 = 65-75 %, Lactobacillus acidophilus NCFM = 5-10 %,
Lactobacillus plantarum LP115 = 5-10 %, Lactobacillus paracasei LPC37 = 5-10%,
Lactobacillus bulgaricus LB64 = 5-10 %

6 billions lactic acid bacteria/tablet

1-2 tablets 1-2 x daily

Tablets with prolonged disintegration and sustainability.

These protect and prolongs the life for the lactic acid bacteria with 80-90 % viable and non-compromised bacteria stored at 20-23°C in 24 months.

This implies 10 times improved survival compared to other probiotic food supplements as capsules.

ProBion[®] contains well-documented bacterial cultures sustainable at room temperature.

ProBion[®] is packaged in bottles with caps and dessicants giving optimal sustainability.

Wasa Medicals guarantees the amount bacteria at best before date.

**Statement: the ProBion Technique is the
most optimal vehicle for probiotics!**

ProBion®
—— prolongation of life ——

ProBion[®] - the ingenious tablet

Wasa Medicals patented technique
and its innovative characteristics:



ProBion[®] - the ingenious tablet

**Tableting with reduced compression force and
splint forces.**



ProBion[®] - the ingenious tablet

Reduced water activity = a_w exipients in the tablet = 0,1-0,2



ProBion[®] - the ingenious tablet

Unique survival at production = 90-99 %

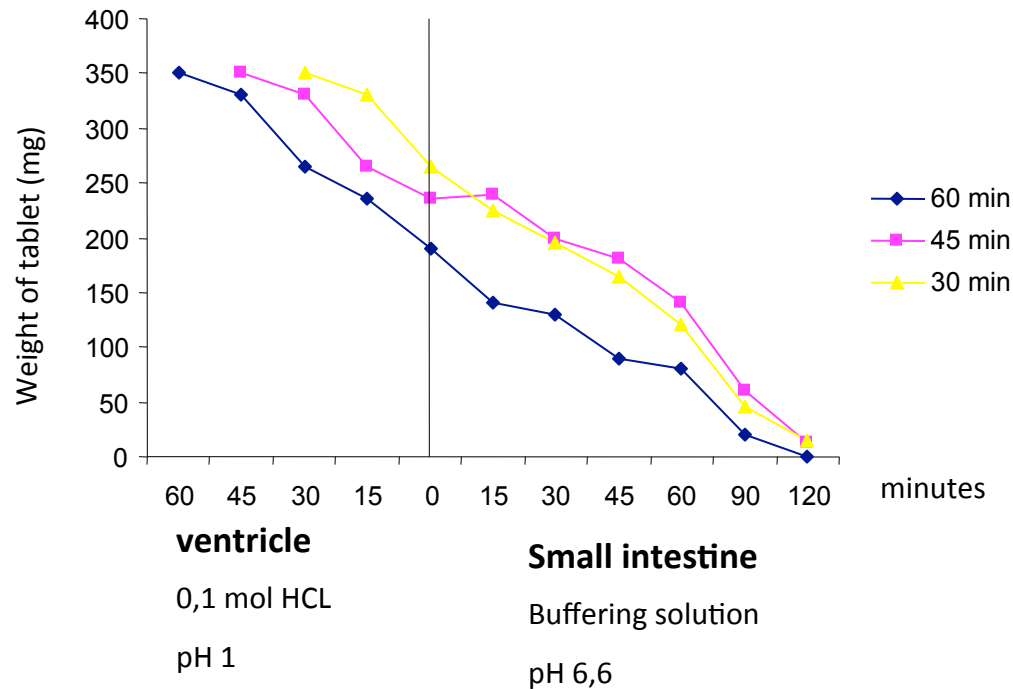


ProBion[®] - the ingenious tablet

The tablets are dissolved in a controlled prolonged manner.
Viable and non-compromised bacteria are exposed continuously.



Disintegration profile for ProBion[®] ref. Européan Pharmacopé 4.1.3.



The active ingredients in a tablet are exposed for ...

- **Compression forces**
- **Splint forces**
- **Heat**
- **Moisture**

Conclusion:

Conventional tablets are not the best solution!

Capsules contains gelatin or cellulosa and starch.

Starch hydrolysate: "Capill"

Hydroxypropyl methyl cellulosa ("Vegicaps")

Hard gelatin-capsules contain 10-15% moisture!

Vegicaps contain 5-10% moisture!

The water content dramatically reduces the viability and sustainability of the bacteria!

Packaging of capsules.

Air-tight non-transparent bottles with dessicants to keep moisture out from the content is obligate.

Nota Bene!

The problem is that the capsules must keep their moisture not to brittle.

**If using blisters both sides must be non-transparent
100 %**

Toxic restitueents could be found both in capsule and blister material whatever approved certificates.

**Conclusion: due to its water content
capsules are not the best choice
for packaging probiotics**

Probiotic tablets demand specific conditions to achieve stability and sustainability.

Lowest possible compressions force applied to get acceptable hardness and friability.

Reduced splint forces and heat development.

Low a_w excipients = low water activity.

Modern quality assurance demands the use of
modern technique ref. Arthur Ouwehand,
DuPont Innovation, Finland

The optimal method is **Fluorescence Flow
Cytometric analysis**. It separates bacteria with
compromised cell membranes from bacteria with
non-compromised cell membranes.

ProBion[®] - *Raw materials*

Bacteria

Well documented and GRAS

Prebiotics - Inulin

Inulin promotes the growth and activity for the endogenous flora. Often extracted from the roots of endives.

Xanthan

Mucus producing item manufactured by fermenting carbohydrates.

It protects the bacteria in the intestine and controls the dissolution of the tablet optimizing the exposure of viable bacteria.

Magnesium stearate

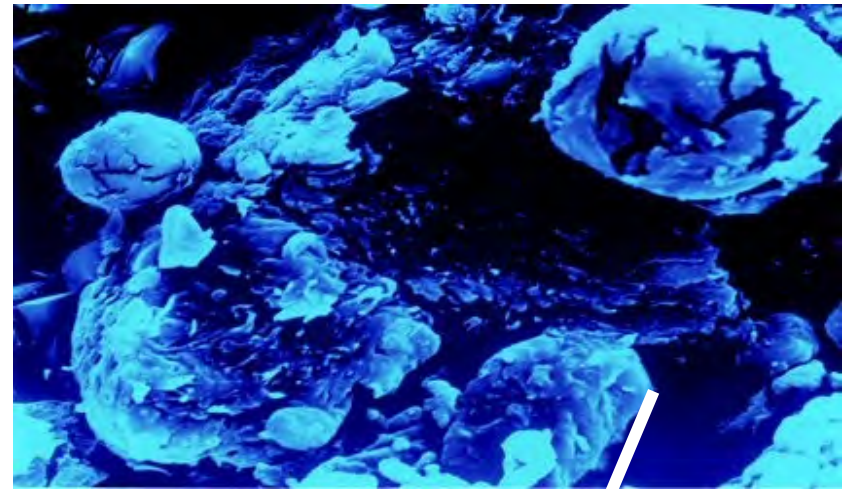
Flowing qualities at the production. RSPO certificate.

Dairy-free and soya-free and free from GMO and most allergens.

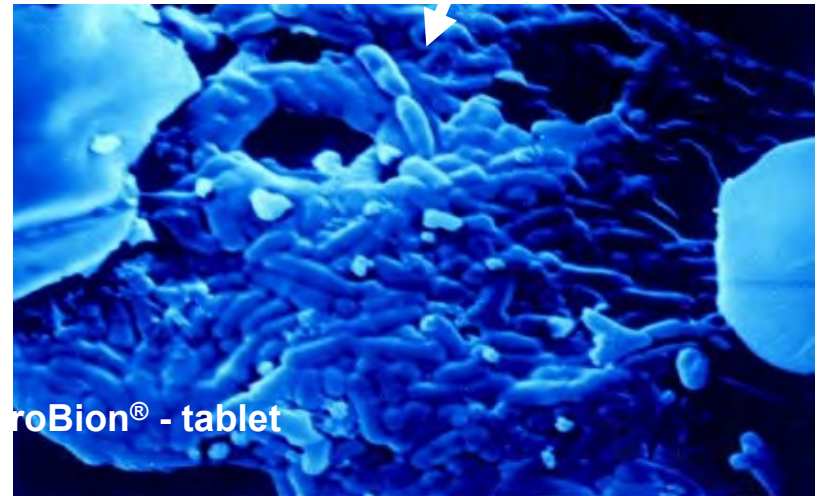
ProBion® - the ingenious tablet



Electron microscopic picture of a conventional produced tablet with high compression force. No space for bacteria. Splint forces damage the bacterial cell membranes.



Tablet produced with the ProBion® technique. Big space for the bacteria to hide and protect themselves.



Inside the **ProBion**[®] - tablet the structure is dominated by inulin and xanthane.



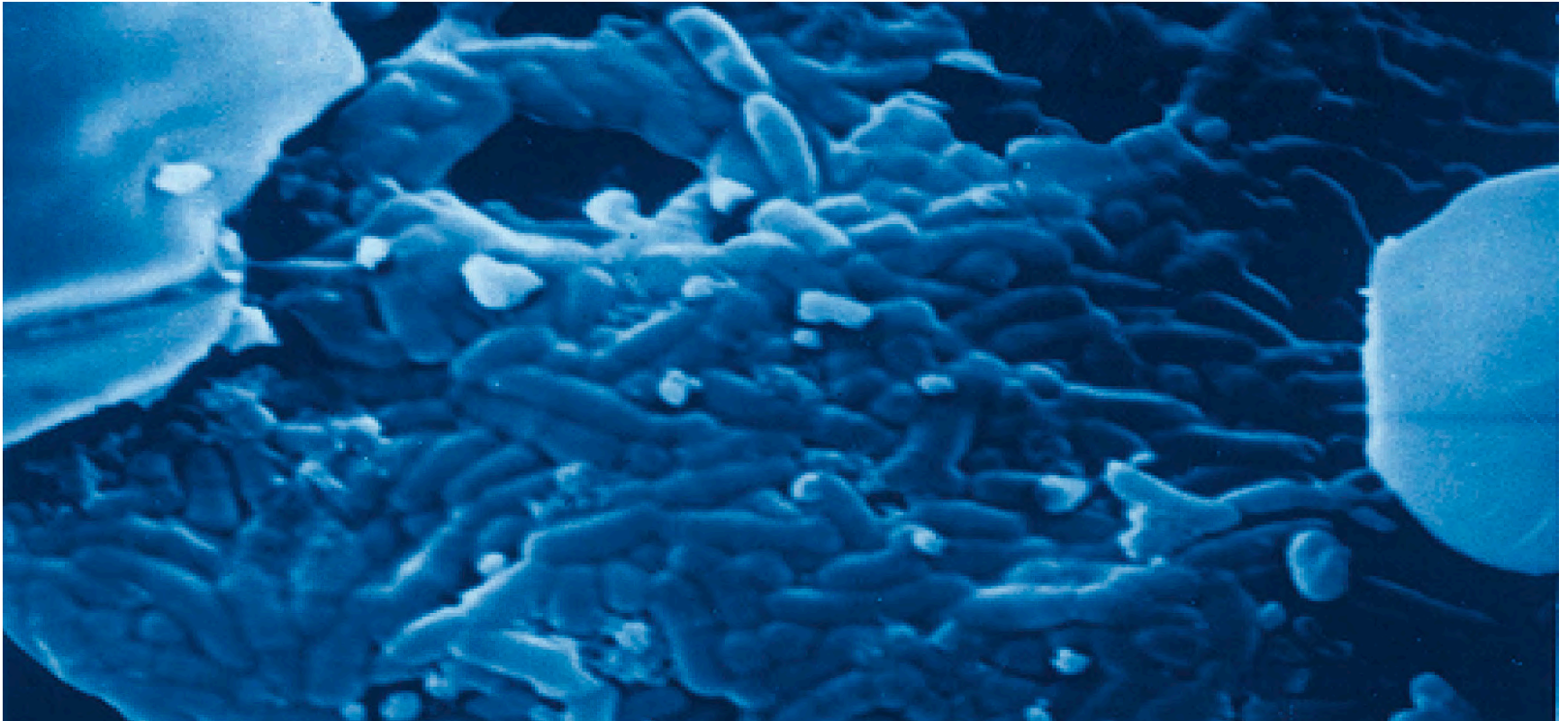
ProBion[®]
— prolongation of life —

Inside the **ProBion**[®] - tablet the structure is dominated by inulin and xanthane.



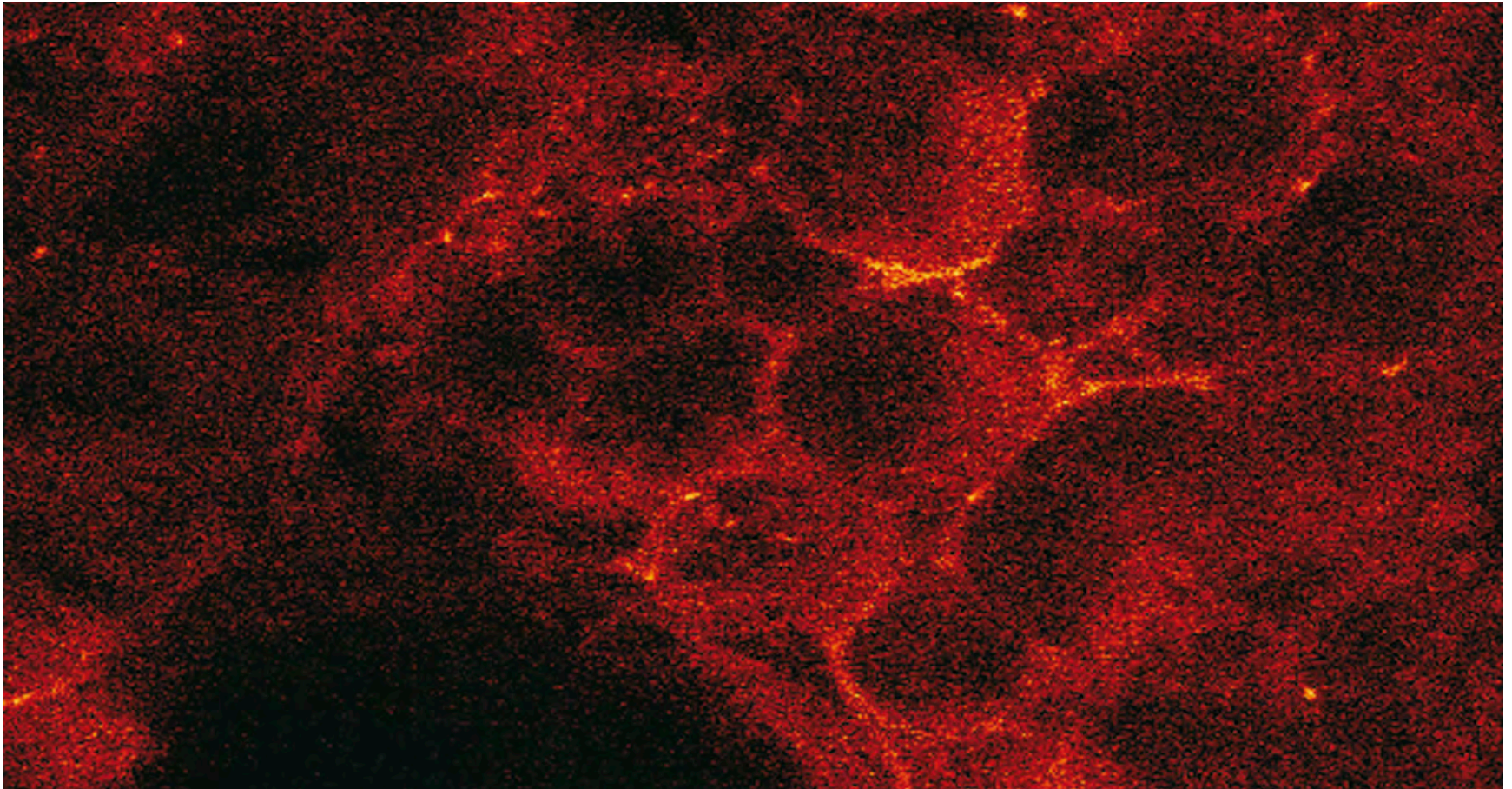
ProBion[®]
— prolongation of life —

Inside the **ProBion**[®] - tablet the structure is dominated by inulin and xanthane.

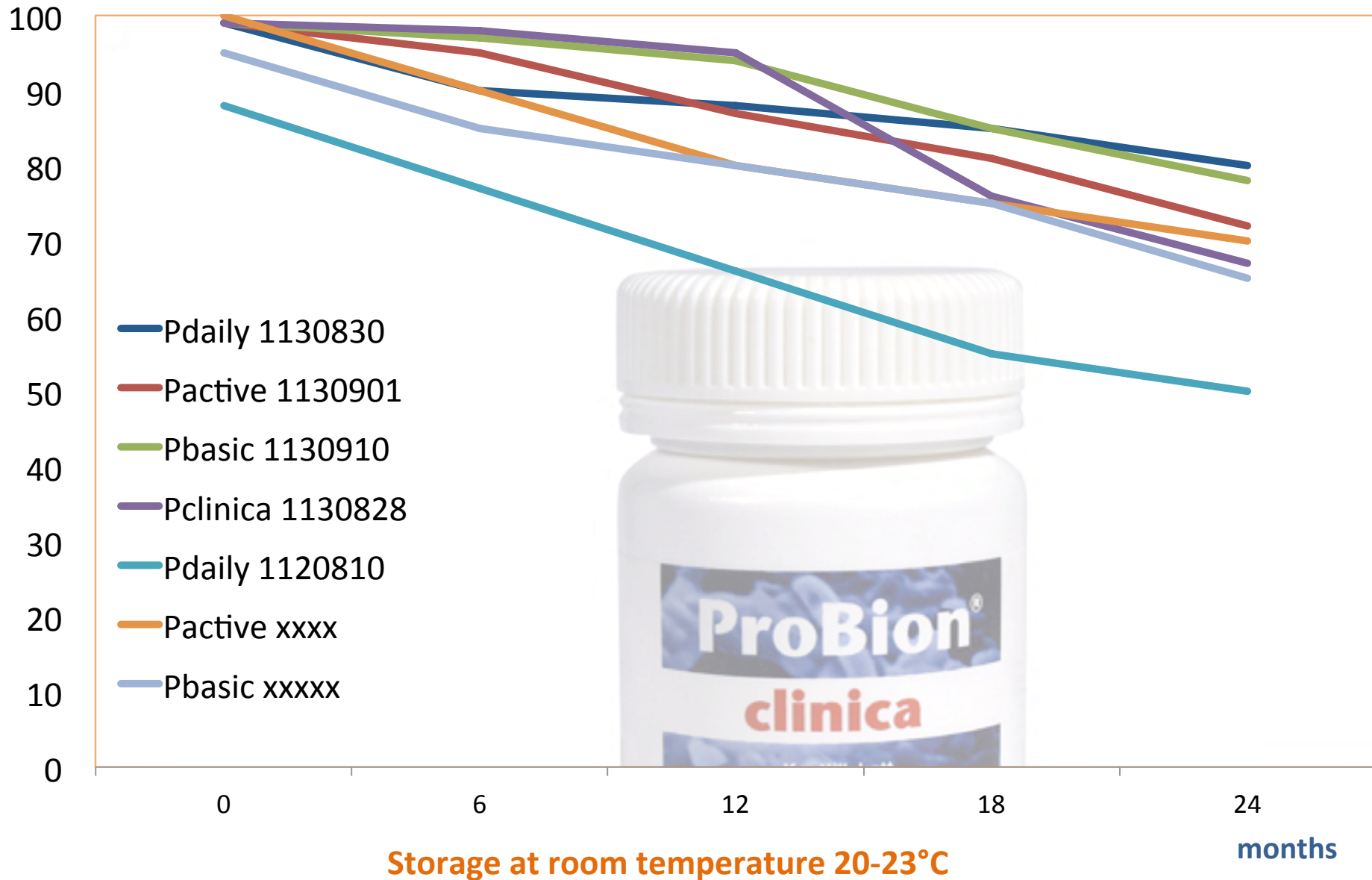


ProBion[®]
— prolongation of life —

Confocal Laser picture inside **ProBion**[®] - tablet
with globulets.



VIABLE % UNCOMPROMISED BACTERIAL CELLS



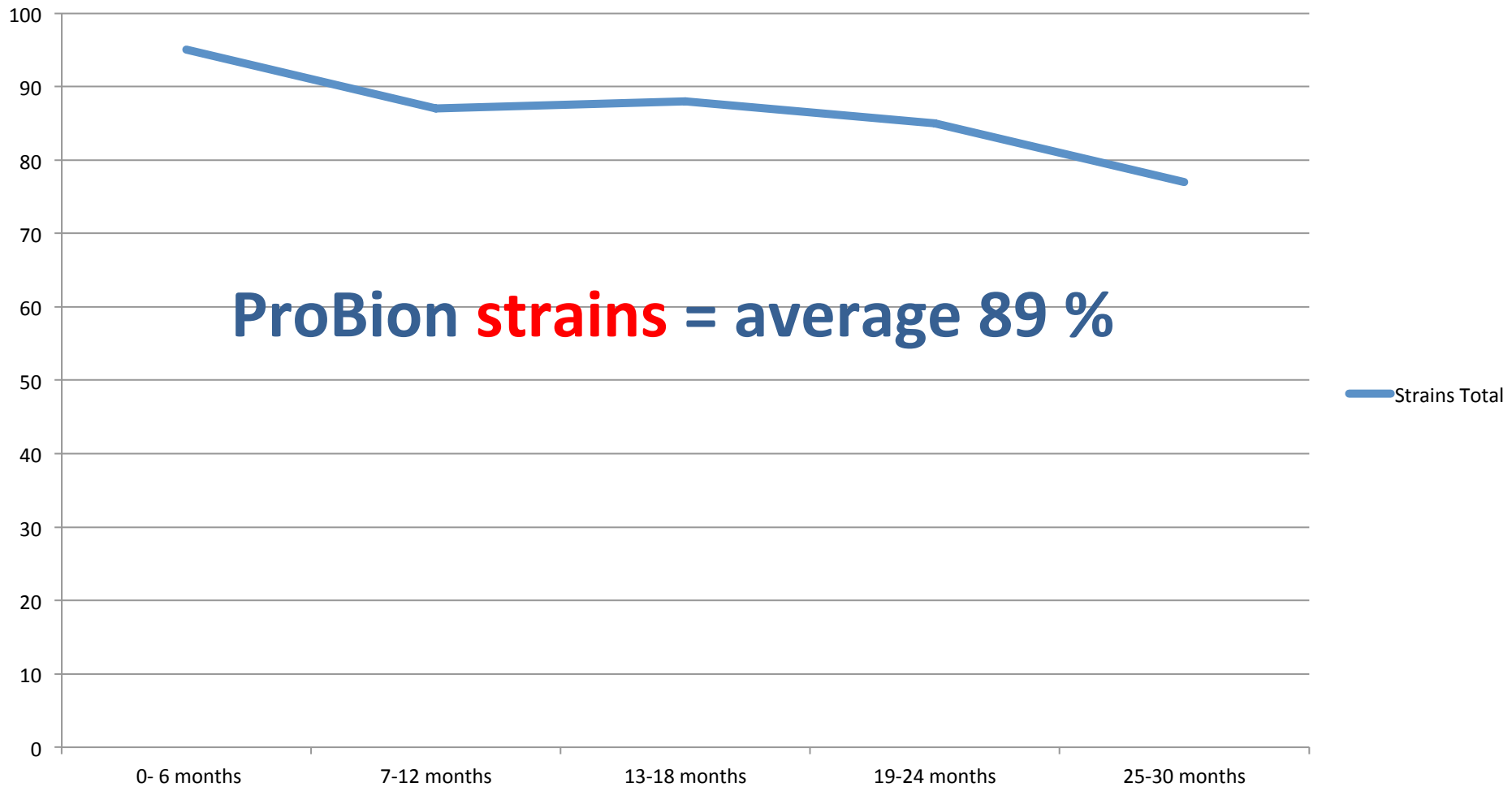
Total average **survival rate ProBion and bacterial strains stored at 20 – 23°C!**

**Non-compromised bacteria cells analysed by
Fluorescence Flow Cytometry.**

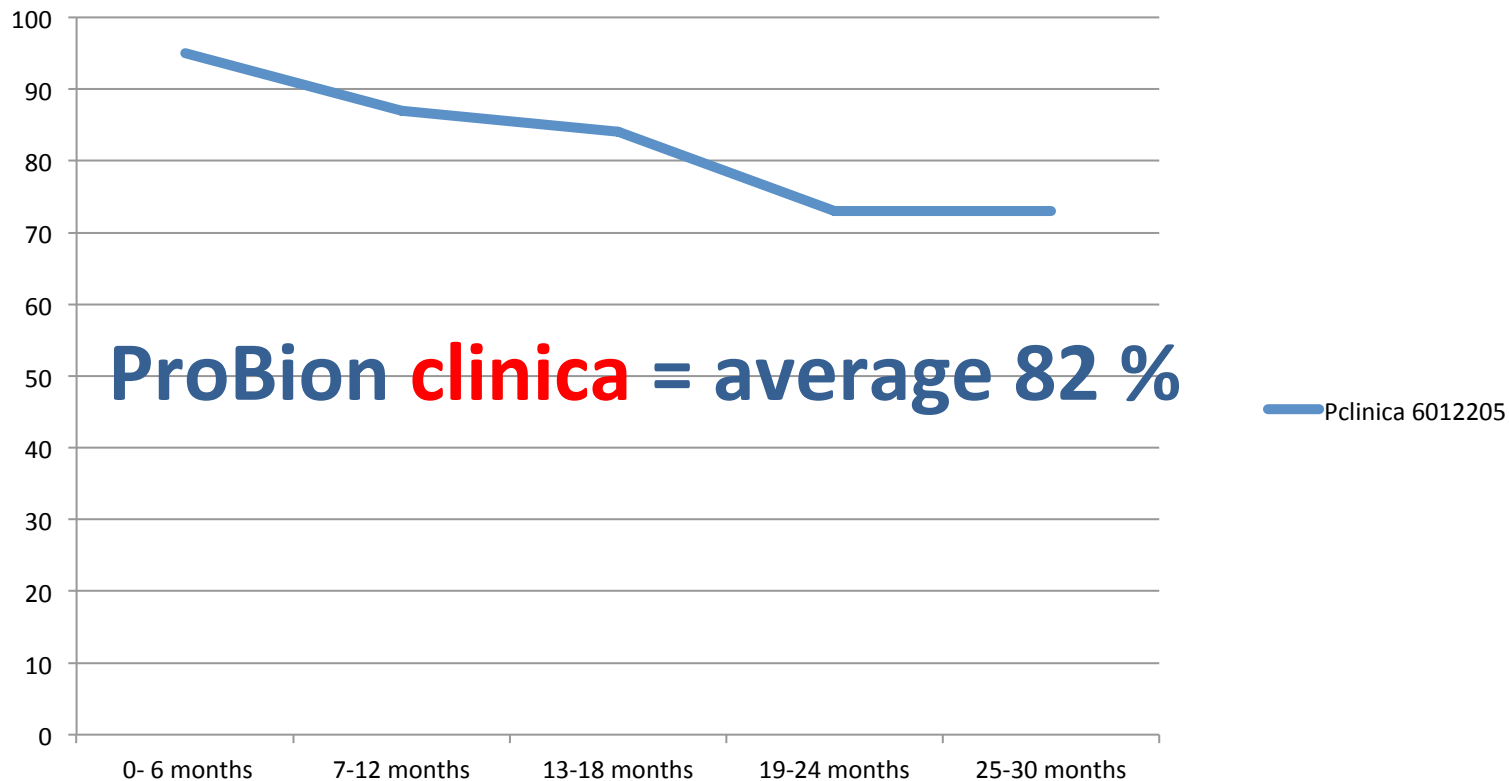
ProBion 86 % reopened bottles
0-30 months

Strains 89 % sealed sacs
0-12 months

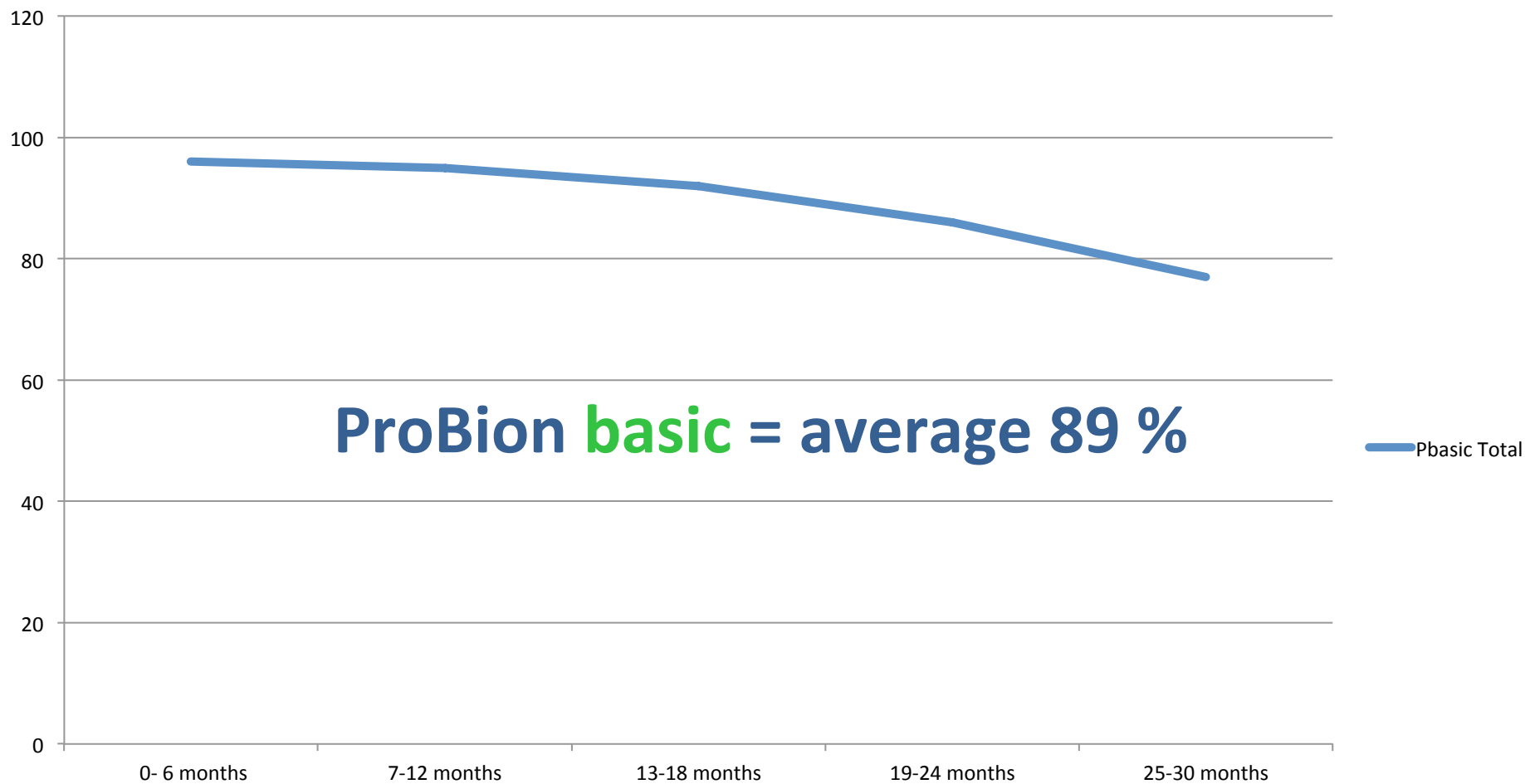
Strains Total



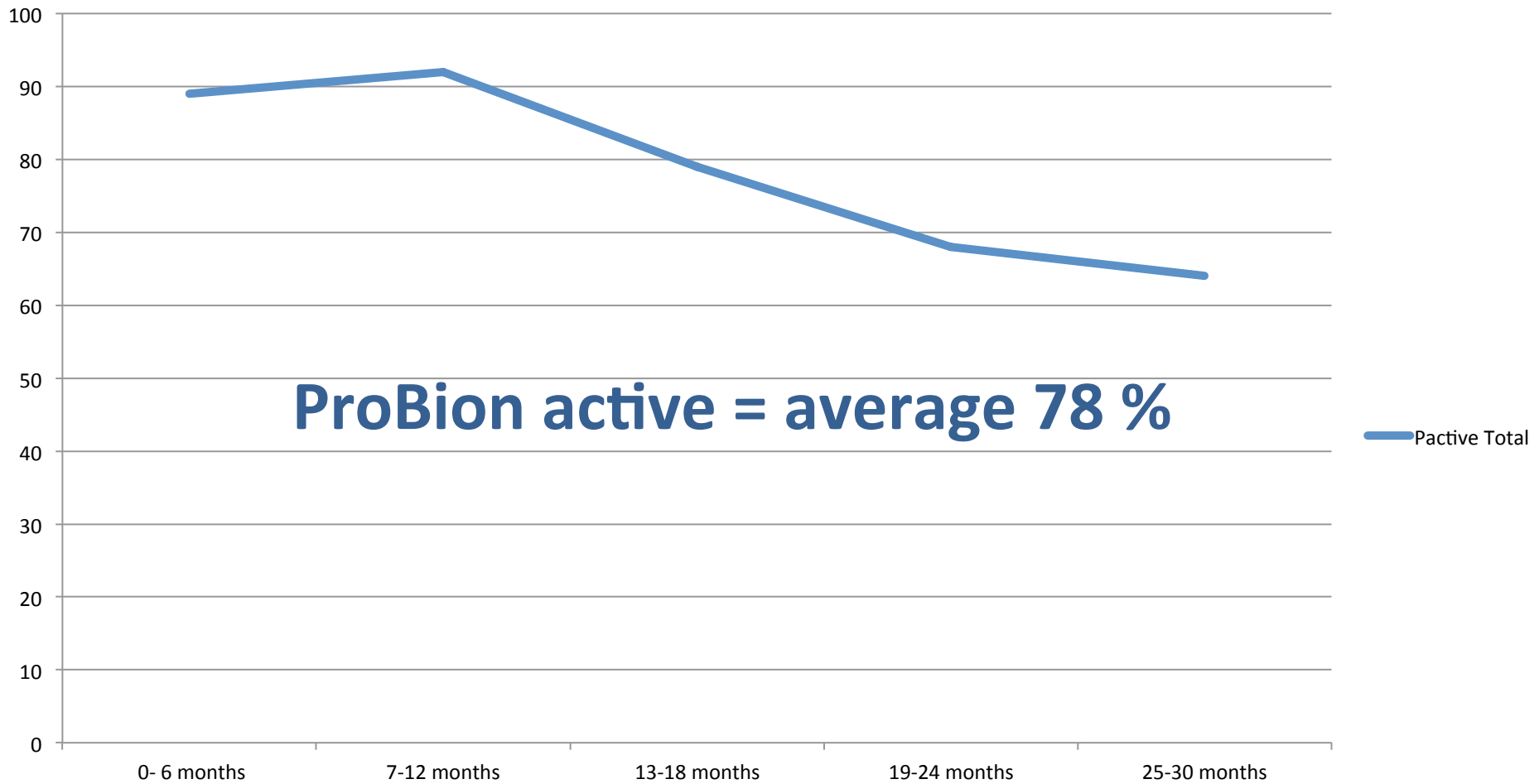
% non-compromised bacteria cells stored at 20-23°C



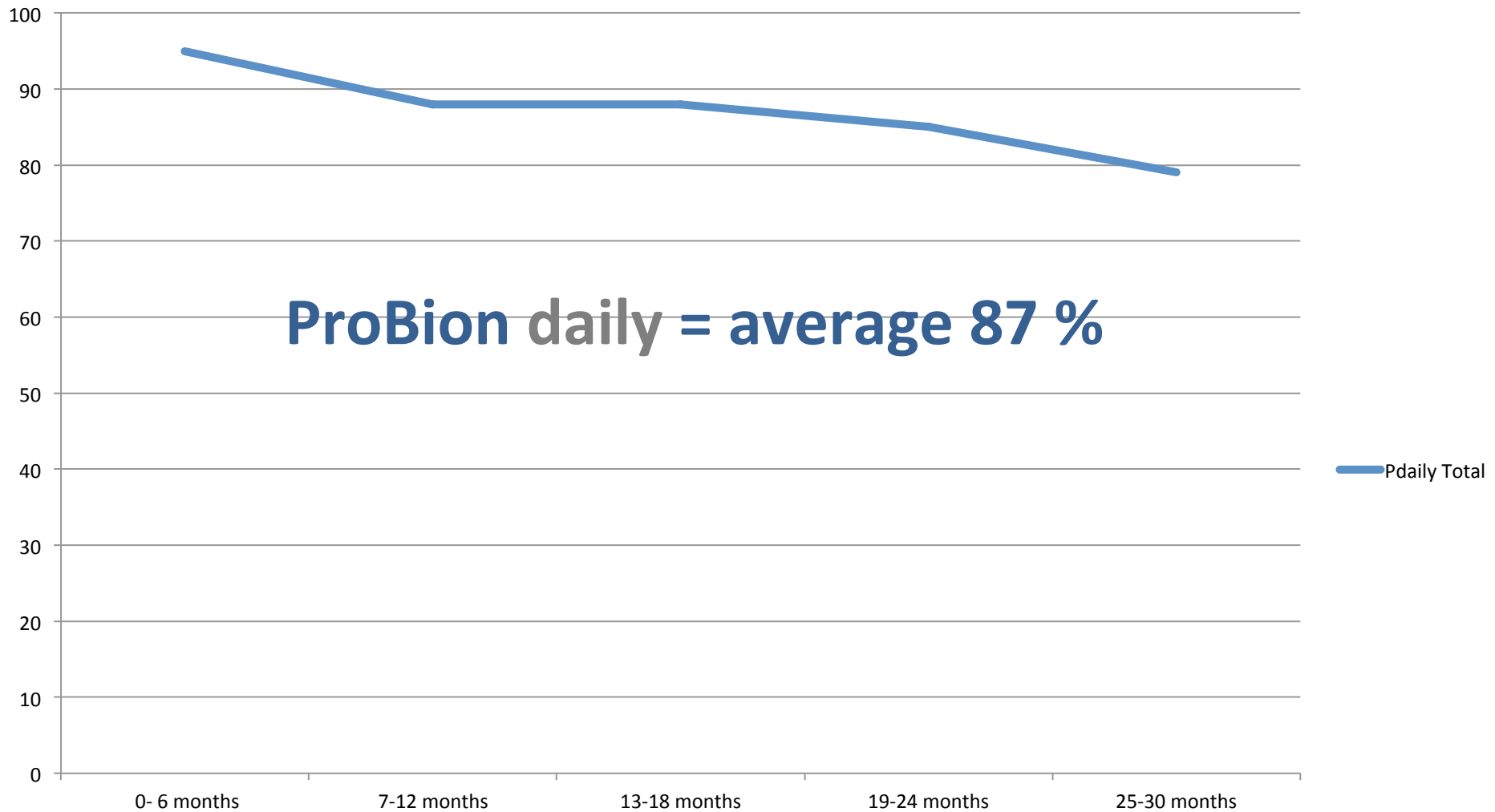
% non-compromised bacteria cells stored at 20-23°C



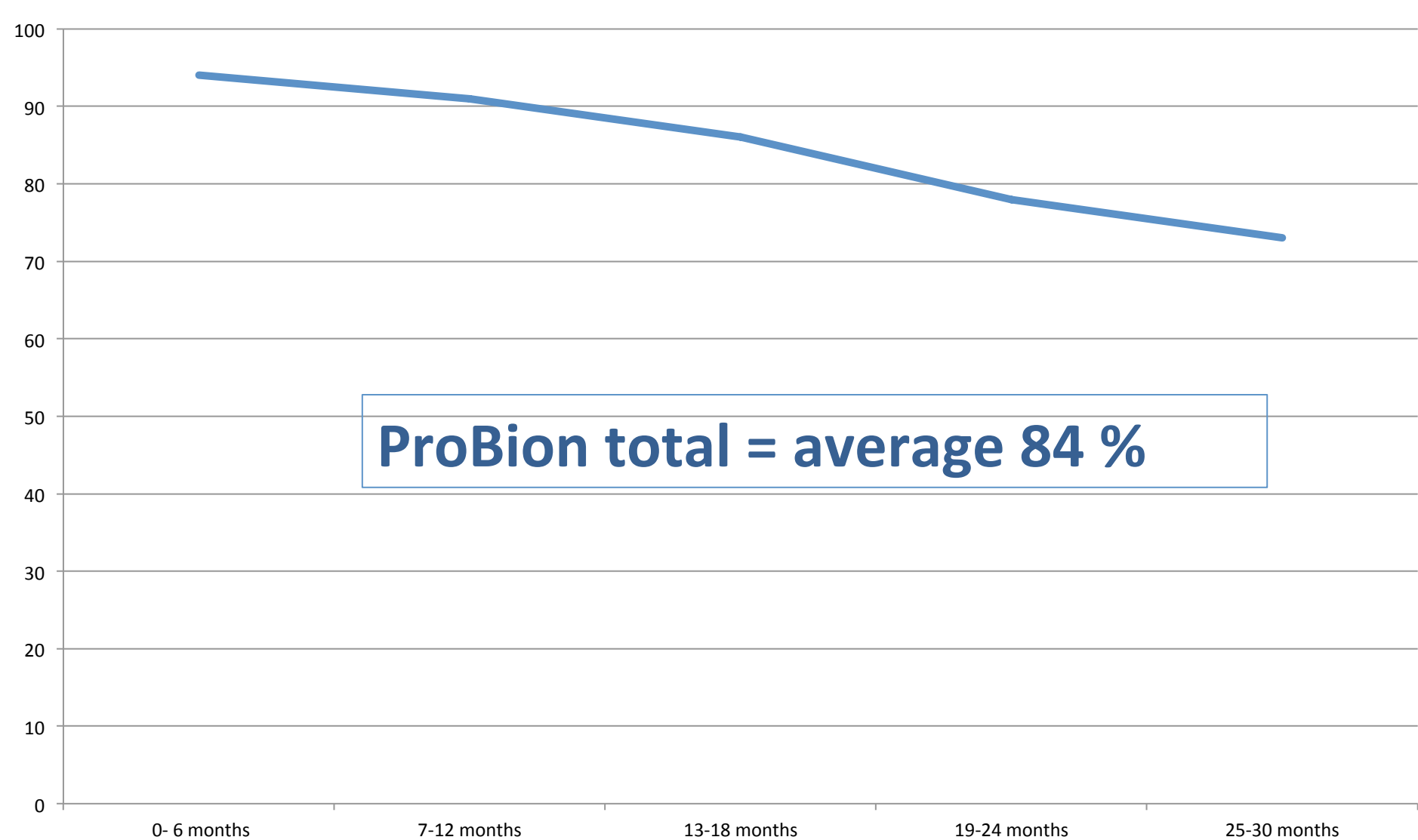
% non-compromised bacteria cells stored at 20-23°C



% non-compromised bacteria cells stored at 20-23°C



% non-compromised bacteria cells stored at 20-23°C



% non-compromised bacteria cells stored at 20-23°C

One billion dollar question:

**How do you sell a car with 10 times vigorousity equals
100 Horsepowers when all others sell cars with
10 Horsepowers?**

**How do you sell a probiotic food supplement with 10
times vigorousity equals more than
80 % viable and non-compromised cells
When all others sell probiotics with less than 8 %?**

Conclusion: the ProBion-technique is the optimal package for probiotics.