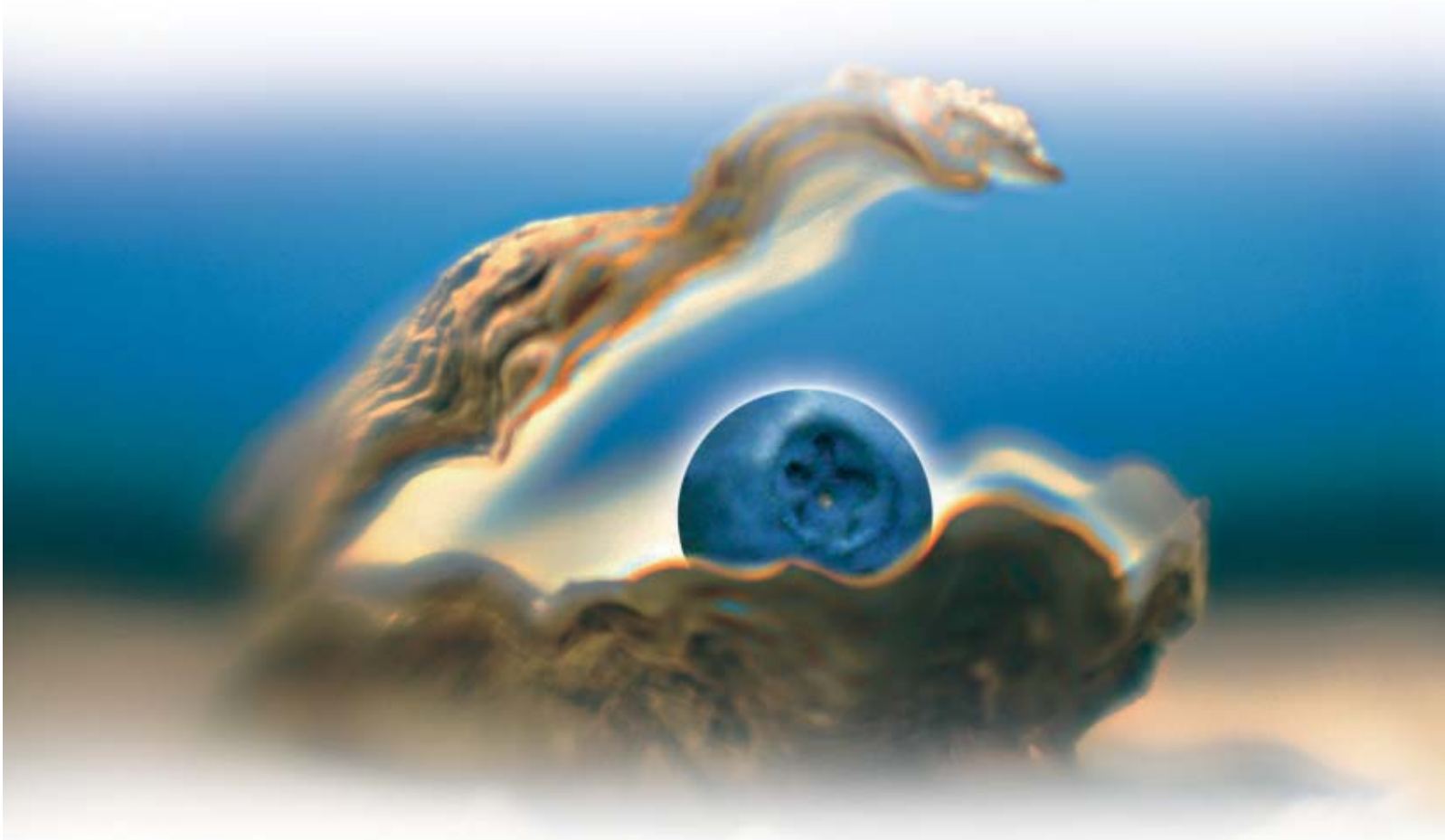


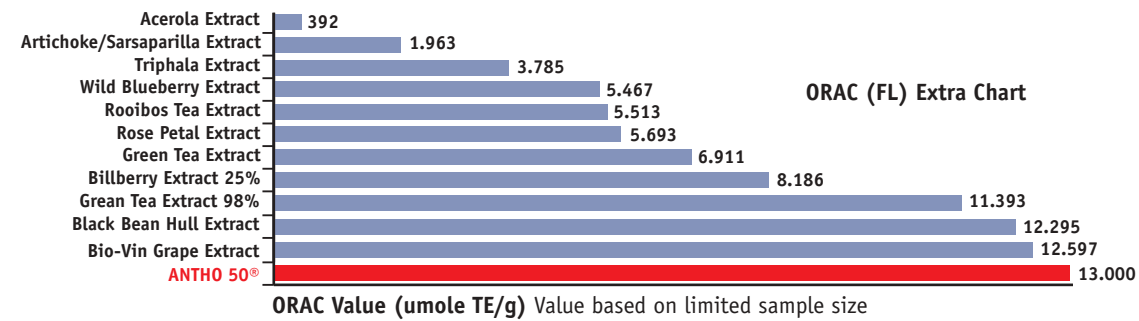
# **Antho 50<sup>®</sup>**



**The first purified bilberry extract standardized to contain 50% anthocyanins.**

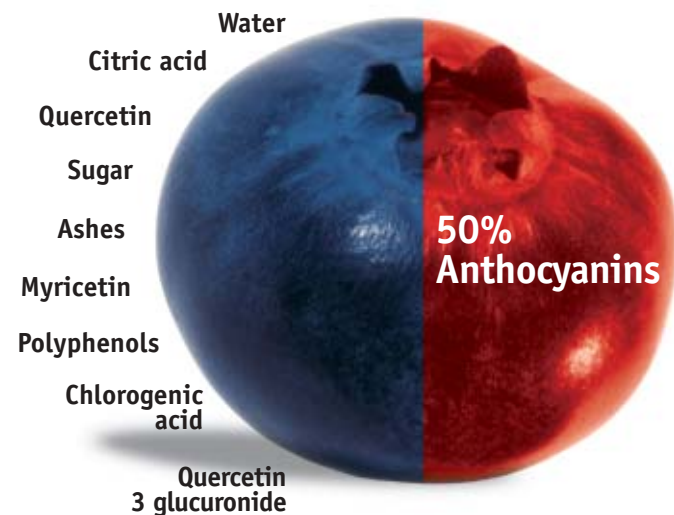
## ANTHO 50® HIGH ORAC VALUE

Orac (Oxygen Radical Absorbance Capacity) measures the degree and length of time it takes to inhibit the action of oxidizing agent. Antho 50® showed an extremely high Orac Value (13 000 µmol TE/g –fluorescin method)



## ANTHO 50® 100% COMPOSITION IDENTIFIED

While most bilberry extracts claim 25% of the active ingredient, without knowing the rest of the composition, Antho 50®'s composition is 100% identified. Besides a 50% concentration in anthocyanins, Antho 50® is composed of water, citric acid, quercetin, sugar, ashes, myricetin, polyphenols, chlorogenic acid, constituents that have no harmful biological effects. We thus guarantee a highest quality with a maximum safety.



- PATENTED ACTIVE INGREDIENT
- THE ONLY EXTRACT WITH 50% CONCENTRATION IN ANTHOCYANINS AVAILABLE WORLDWIDE
- HIGH ORAC VALUE
- NEW SCIENTIFIC STUDIES PUBLISHED AND ON THE WAY
- STABILITY DATA AVAILABLE

Be  
«Berry»  
unique!



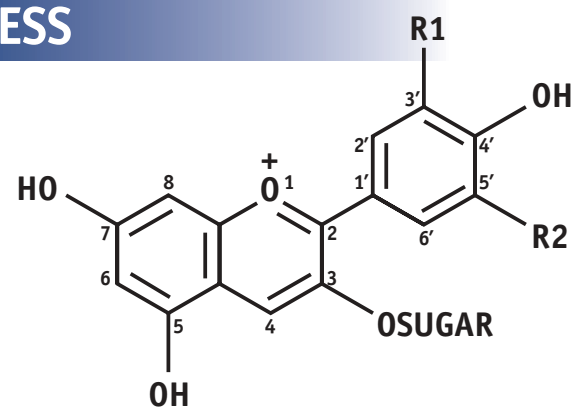
## WHAT IS ANTHO 50®

Antho 50® is the only bilberry extract standardized to contain 50% anthocyanins, whereas typical bilberry extracts are standardized to contain only 25% anthocyanins.

Antho 50® is a mixture of 15 different anthocyanins derived from a combination of 5 aglycons (Delphinidin, Cyanidin, Petunidin, Peonidin, Malvidin) and 3 sugars (3-galactoside, 3-glucoside, 3-arabinoside) which reflects the exact composition of anthocyanins in the native fruit.

## A PATENTED EXTRACTION PROCESS

Antho 50®'s patented extraction process is designed to maintain the physical and chemical characteristics of the active constituents of bilberries. Chemical additives and residues contained in the purified extract are reduced to minimum compared to the regular method of extraction. The nutritive and active properties of the molecules are preserved. Extraction process is worldwide patented.



## ANTHO 50® PROPERTIES

Mediolanum possess significant intellectual assets in the field of polyphenols chemistry. Antho 50® is the result of over 40 years of research into manufacture and production of anthocyanins. Anthocyanins are recognised to have potent antioxidant properties which can protect capillaries from free radical damage. Because capillary damage can be a consequence of diabetic retinopathy, glaucoma, and cataracts, bilberry extracts are often promoted as a way to protect capillaries from damage. Anthocyanins may also promote the formation of connective tissue through their protective effects on collagen synthesis and repair and, thus, may also improve vascular circulation. A number of venous disorders have been helped with bilberry extracts, showing anti-inflammatory benefits and reduction in hemorrhoidal discomfort. Improved visual acuity has been noted in anecdotal reports of night vision (bomber pilot story) and diabetic retinopathy\*.

\* These statements have not been evaluated by the Food and Drug Administration. Antho50 is not intended to diagnose, treat, cure or prevent any disease

## ANTHO 50® NEW CLINICAL STUDIES

- Anthocyanins are involved in multiple biological activities such as vasoprotective effects, anti-inflammatory action, antiatherosclerotic and anticarcinogenic activities.
- However, the site of absorption and the metabolism of anthocyanins in gastro-intestinal tract were unknown.
- Antho 50® is the only bilberry extract that proved a high bioavailability compared to the regular extracts standardized to contain a 25% anthocyanins.

### BIOAVAILABILITY AND COMPARISON WITH REGULAR 25% ANTHOCYANINS

#### ANTHO 50® (1,2)

100 mg = 50 mg anthocyanins

**Stomach absorption**  
27.3 % anthocyanins

Corresponding to 13.7 mg  
anthocyanins



**Intestinal absorption**  
15.3 % anthocyanins

Corresponding to 5.6 mg  
anthocyanins



TOTAL: 19.3 mg of anthocyanins absorbed

#### STANDARD 25% BILBERRIES (4)

100 mg = 25 mg anthocyanins

**Stomach absorption**  
1% anthocyanins

Corresponding to 0,25 mg  
anthocyanins



**Intestinal absorption**  
4% anthocyanins

Corresponding to 1 mg  
anthocyanins



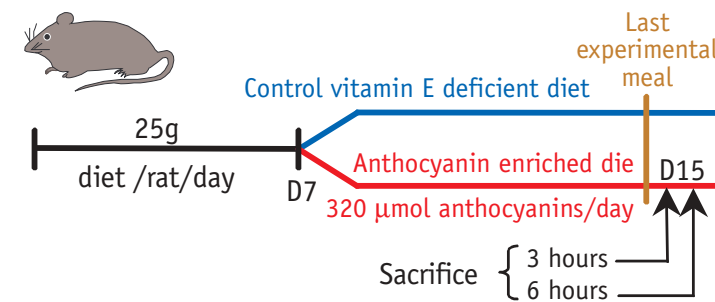
TOTAL: 1.25 mg of anthocyanins absorbed

ANTHO 50® is 15 times more bioavailable than standard extracts

## ANTIOXIDANT ACTIVITY OF ANTHO 50® IN RATS (3)

### Experimental Design

- Anthocyanins are involved in multiple biological activities such as vasoprotective effects, anti-inflammatory action, antiatherosclerotic and anticarcinogenic activities. The positive effects of anthocyanins could be attributable to their potent antioxidant activity. However, little is known about their potential antioxidant capacity in vivo.
- The purified extract of bilberry (Antho50®, Ferlux Mediolanum, Cournon d'Auvergne, France) contains fifteen different anthocyanins eluted as thirteen peaks (Fig 1). Anthocyanins are 3-O glycosides (glucoside: glc, arabinoside: ara, and galactoside: gal) of five aglycons (cyanidin: Cy; delphinidin: Dp; peonidin: Pn; petunidin: Pt; malvidin: Mv).



### Plasma antioxidant capacity

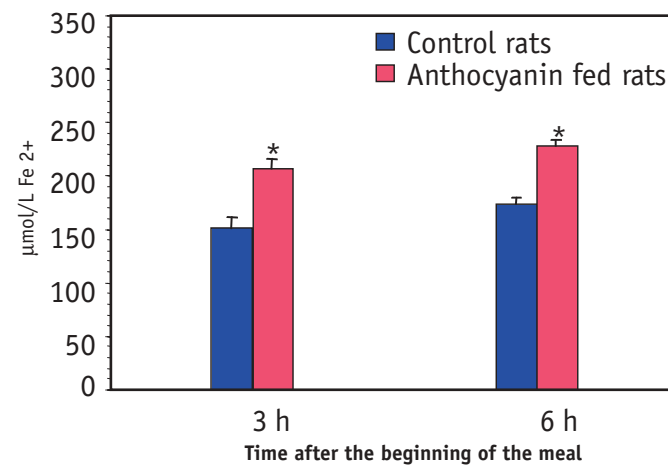


Fig 2. Plasma antioxidant status measured by FRAP assay.

- Plasma antioxidant capacity determined by the FRAP assay was significantly increased by the bilberry extract enriched diet (\* p<0.05) at both 3 and 6h after the beginning of the last meal.

- This effect could probably be attributed to anthocyanin metabolites or degradation products, because we failed to detect anthocyanins in plasma.

### Conclusion

Bilberry anthocyanin consumption has a positive effect on plasma antioxidant capacity.

## SCIENTIFIC LITERATURE

- 1) Talavera, Felgines, Texier, Besson, Lamaison, Remesy "Anthocyanins are efficiently absorbed from the stomach in anesthetized rats"  
Journal of nutrition 133 : 4178-4182, 2003
- 2) Talavera, Felgines, Texier, Besson, Manach, Lamaison, Remesy "Anthocyanins are efficiently absorbed from the small intestine in rats"  
Journal of nutrition 134 : 2275-2279, 2004
- 3) Talavera, Felgines, Texier, Besson, Lamaison, Remesy "Bilberry Anthocyanin bioavailability and positive effect on plasma antioxidant capacity vitamin E-deficient rats" Publication pending
- 4) Morazzoni, Livio, Scilingo, Malandrino "Vaccinium myrtillus Anthocyanosides Pharmacokinetics in Rats" Arzneimittel-Forschung (Drug Res) 26, Nr 5 (1976)

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