

新陳代謝科技

綻放生命能量



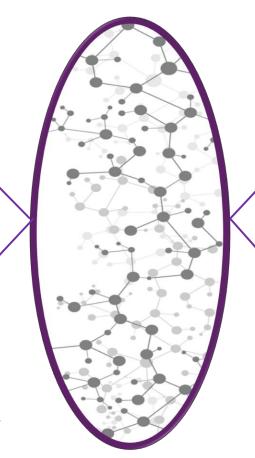
代謝健康關鍵指標

新陳代謝健康不僅僅是將食物轉化為能量

代謝健康是我們身體代謝系統中的生物化學過程,影響著如下指標:

血糖

胰島素敏感度

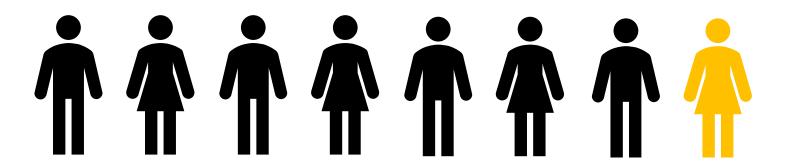


血壓

膽固醇和甘油三酯

新陳代謝不健康

成年人中只有一小部分是新陳代謝健康的,而其他大部分人則有各種各樣的健康狀況。



在美國,只有1/8的人是新陳代謝健康的

瘦 # 新陳代謝健康

您認爲僅從體重正常, 就可以判斷新陳代謝健康嗎?

一項最近的研究表明...

2/3的體重正常人士

并不擁有新陳代謝健康!



- 血糖
- 甘油三酯
- 高密度脂蛋白膽固醇
- 血壓
- 腰圍

代謝健康光譜



不良生活習慣

- 久坐不動
- 不健康的飲食
- 肥胖超重
- 睡眠不足
- 果蔬攝入不足
- 壓力大
- 吸煙

健康生活習慣

- 運動習慣
- 營養均衡
- 健康的體重
- 睡眠充足
- 果蔬攝入充足
- 壓力較少
- 不吸煙

沒有人是完美的,但每個人都可以選擇 **更利于新陳代謝健康的生活方式**

良好的代謝健康具有保護作用

代謝健康不僅受

我們所吃的東西和活動影響,

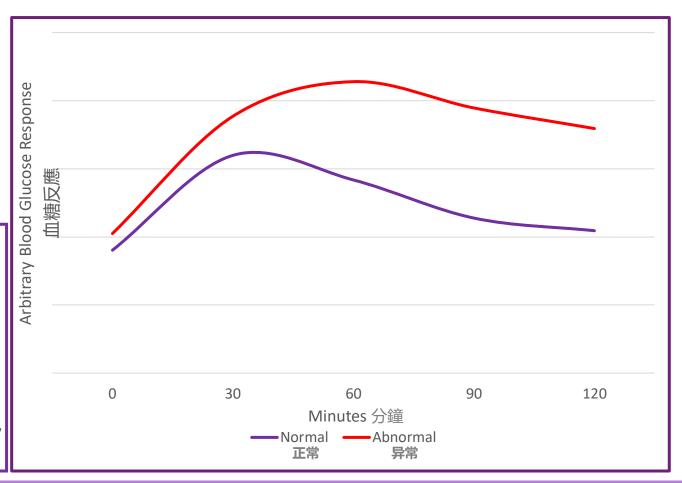
它還影響身體如何對各樣的生活方式

因素**做出反應**

代謝適應性:

如果我們養成了將這些健康的生活方式納入我們生活的習慣, 這將幫助我們擁有良好的代謝健康。如果我們有良好的代謝健康, 我們的身體就能更好地應對偶爾不良的生活方式。如果一個人的新 陳代謝不健康,如果他們一直選擇不良的生活方式,他們的反應就 會像圖上的紅綫,比正常基綫高得多,幷需要更長的時間才能回到 基綫,(如果他們能回到基綫的話)。

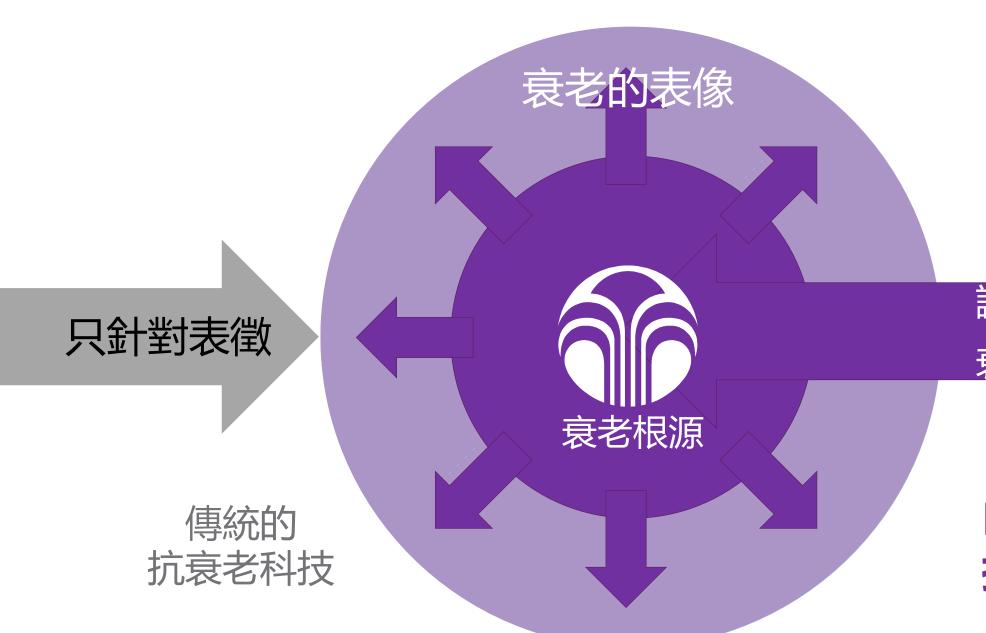
這意味著新陳代謝健康的人有更大的新陳代謝適應性,所以 良好的新陳代謝健康對偶爾不良的生活方式有保護作用,換句話說, 它使我們從偶爾不良的生活方式中更好地恢復過來。



良好的代謝健康=更佳的代謝適應性

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Adapted from: Yun JW, Cho YK, Park JH, Kim HJ, Park DI, Sohn CI, Jeon WK, Kim BI. Abnormal glucose tolerance in young male patients with nonalcoholic fatty liver disease. Liver Int. 2009 Apr;29(4):525-9.



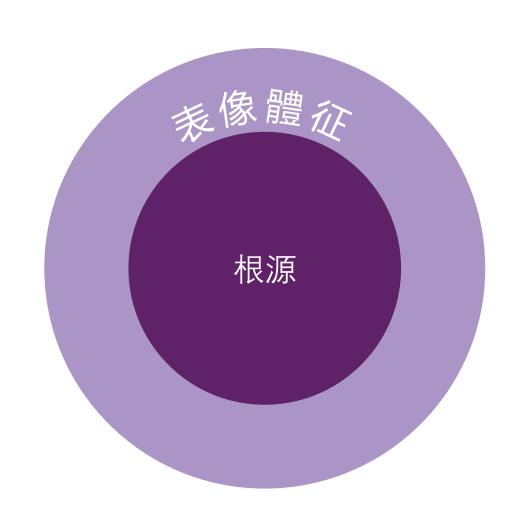
識別和針對 衰老根源

NU SKIN 抗衰老科技

如新提供創新的 科學研究和解决方案

目標是從根源 改善身體代謝健康

通過具有植物力量的花青素成分



花青素

精選水果和蔬菜中充滿活力的藍紫色和紅色成分



蔓越莓



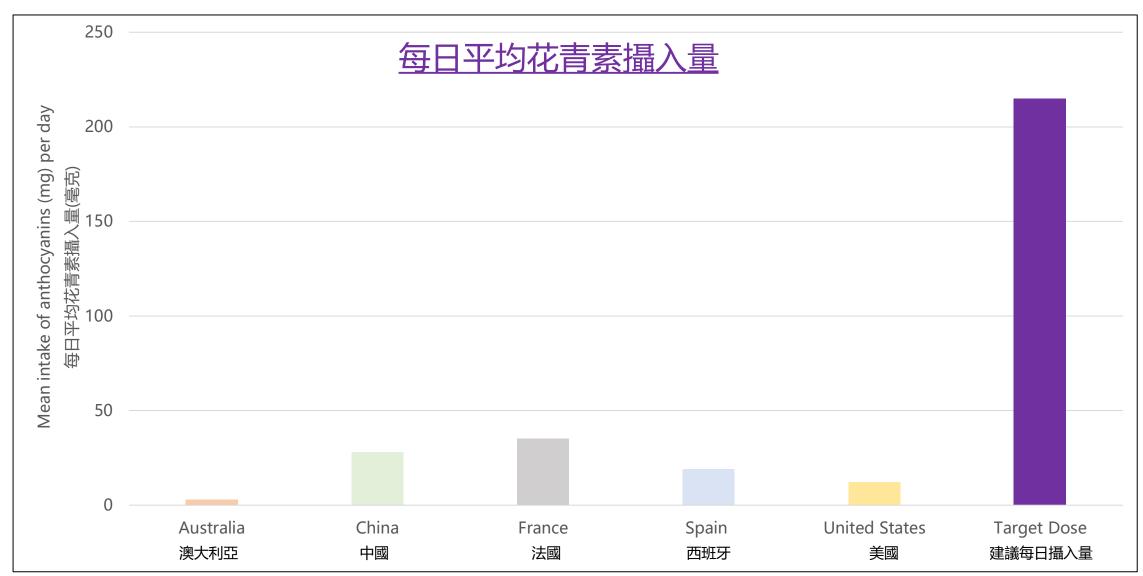
草莓



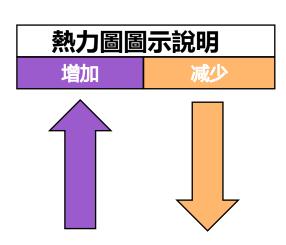
石榴



僅從飲食中能獲得足够有效的花青素劑量嗎?



富含花青素的飲食 幫助優化新陳代謝



SAMPLING OF METABOLIC PATHWAYS & BIOLOGICAL EFFECTS (NOT GENE EXPRESSION) 代謝途徑和生物學效應應的範例(非基因表達)

食用花青素

		生活方式*	PC101013X
		工门门瓦	
	CPT-1A		
	RBP4		
	Acyl-CoA Oxidase		
	SREBP-1C		
肝臓	Insulin Sensitivity		
	Glucose Uptake		
LIVER	Lipid Accumulation		
	Blood Lipids		
	Oxidative Stress		
	AMPK		
	GLUT4		
	ACC1		
	FAS		
	Insulin Sensitivity		
脂肪組織	Insulin Secretion		
	Glucose Uptake		
FAT TISSUE	Hyperglycemia		
	FA Oxidation		
	FA synthesis		
	Serum Lipids		
	PEPCK		
肌肉組織	G6PD		
	Hexokinase		
SKELETAL	CHO Metabolism		
MUSCLE	Glucose Uptake		
	Insulin Receptor		
	JNK		
	IL-1-beta		
	IL-6		
胰腺	TNF-alpha		
PANCREAS	Beta cell function		
PANCILAS	Blood lipid		
	Hyperglycemia		
	Oxidative risk		

新陳代謝健康

花青素+運動 带来多种的益处



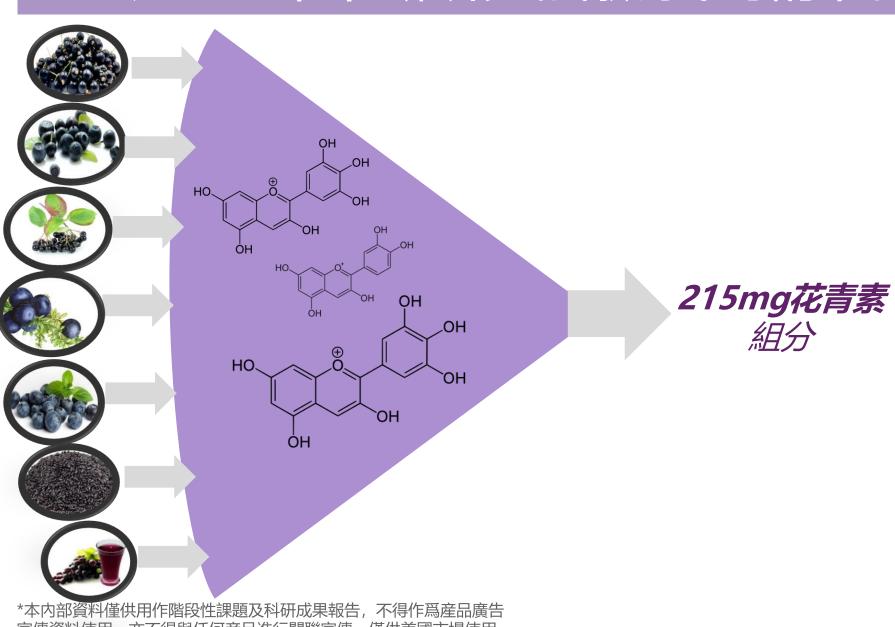
運動 運動+補充花青素



如新創新研究發現

補充215mg化青素組分 可幫助提升代謝適應性

歷經7年不斷研究試驗找到精准的科學配比



黑加侖





黑米

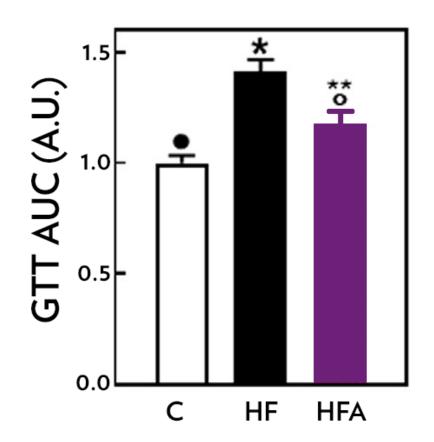


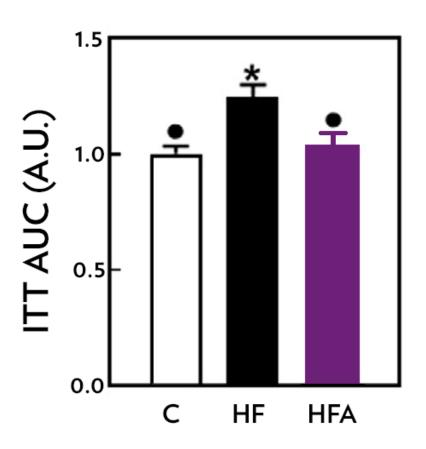
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實驗證明215mg花青素[#]對葡萄糖/胰島素代謝的影響

#HED人體等效劑量

在模型小鼠中進行爲期 14 周的研究,測量葡萄糖/胰島素代謝的變化 其中GTT和ITT是檢測糖代謝和胰島素反應的兩種方法





C: 對照飲食組

HF: 高脂肪餐組

HFA: 高脂肪餐組+花青素組分

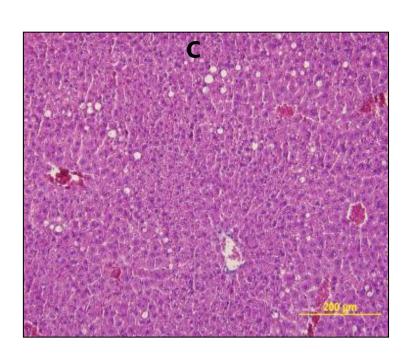
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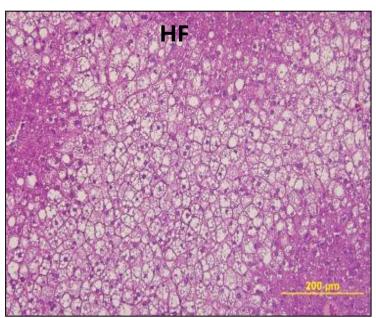
Daveri E, Cremonini E, Mastaloudis A, Hester SN, Wood SM, Waterhouse AL, Anderson M, Fraga CG, Oteiza PI. Cyanidin and delphinidin modulate inflammation and altered redox signaling improving insulin resistance in high fat-fed mice. Redox Biol. 2018 Sep;18:16-24.

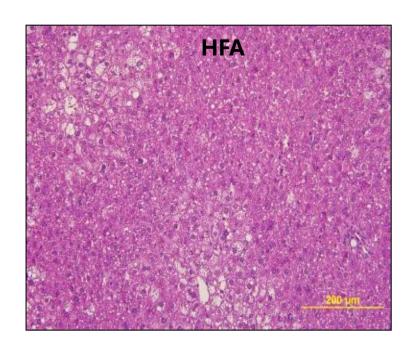
實驗證明215mg花青素[#]對肝臟細胞狀態的影響

#HED人體等效劑量

在模型小鼠中進行爲期 14 周的研究,測量肝臟健康的變化







C: 對照飲食組 HF: 高脂肪餐組

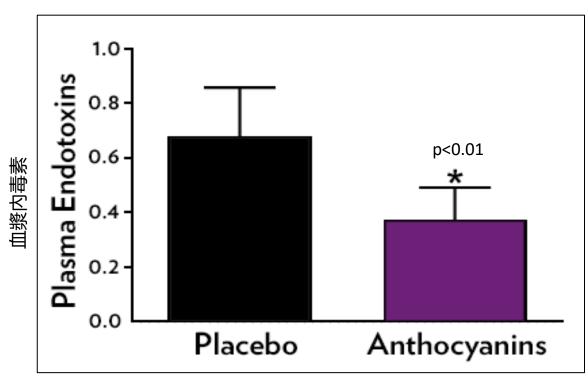
HFA: 高脂肪餐組+花青素組分

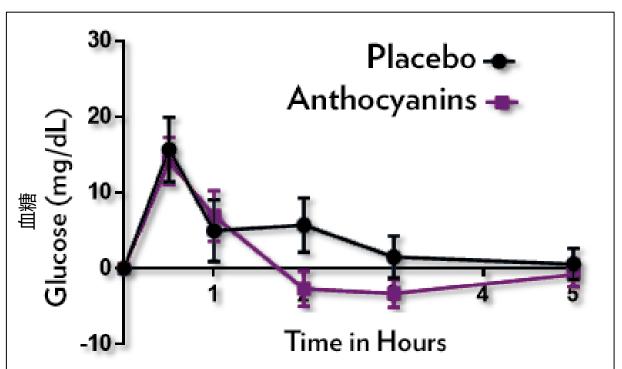
*本内部資料僅供用作階段性課題及科研成果報告,不得作爲產品廣告 Oteiza PI. Cyanidin and d 宣傳資料使用,亦不得與任何產品進行關聯宣傳。僅供美國市場使用。 insulin resistance in high

Daveri E, Cremonini E, Mastaloudis A, Hester SN, Wood SM, Waterhouse AL, Anderson M, Fraga CG, Oteiza PI. Cyanidin and delphinidin modulate inflammation and altered redox signaling improving insulin resistance in high fat-fed mice. Redox Biol. 2018 Sep;18:16-24.

實驗證明對內毒素和血糖的效應

對年齡在19-35歲之間體重正常的年輕人進行短期研究,測量高脂飲食及安慰劑與花青素對代謝的影響





Redox Biology 26 (2019) 101269 Contents lists available at ScienceDirect Redox Biology journal homepage: www.elsevier.com/locate/redox

yanins protect the gastrointestinal tract from high fat diet-induced ons in redox signaling, barrier integrity and dysbiosis

Cremonini^{a,b}, Elena Daveri^{a,b}, Angela Mastaloudis^c, Ana M. Adamo^{d,e}, David Mills^{f,g} lanetra^{f,g}, Shelly N. Hester^c, Steve M. Wood^c, Cesar G. Fr

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earch, NSE Products, Inc., Provo, UT, USA rica Patolórica. Facultad de Farmacia y Biocuámica. Universidad de Buenos Aires. Buenos Aires. A lmica y Fisicoquímica Biológicas (IQUIFYB), CONICET-Universidad de Buenos Aires, Buenos Aires, ad Technology, University of California, Davis, CA, USA

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ABSTRACT

The gastrointestinal (GI) tract can play a critaper eating, overweight and obesity. We previous

cularly glycosides of cyanidin and delphinidin dyslipidemia, insulin resistance and steatosis in and delphinidin modulate inflammation and altered redox effects could be related to AC capacity to sustage associated dysbiosis. The involvement of red improving insulin resistance in high fat-fed mice monolayers. Consumption of a HFD for 14 w

Redox Biology 18 (2018) 16-24

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verse consequences of consuming a high fat diet (HFD) in mice. Consumpti

HFD-induced obesity, dyslipidemia and insulin resistance (impaired response

AC supplementation. HFD caused liver oxidative stress showing an increase

generators of superoxide and H2O2, and high levels of oxidized lipid-protein

the activation of the redox sensitive signals IKK/NF-κB and JNK1/2, and ir

regulated PTP1B phosphatase, all known inhibitors of the insulin pathway.

insulin sensitivity. AC supplementation inhibited oxidative stress, NF-kB and

expression. Thus, evanidin and delphinidin consumption either through diet

positive strategy to control the adverse effects of Western style diets, includi

Modulation of inflammation, oxidative stress, and NF-kB/JNK activation

high fat diets.

nidins; GIP, gastric inhibitory polypeptide; GLP-1, glucagon-like peptide-1; GTT, glucose tolerance test; HFD, high fa

sulin receptor substrate-1; ITT, insulin tolerance test; JNK, c-jun N-terminal kinase; MCP-1, monocyte chemoattractant proti

ble nitric oxide synthase; NOX, NADPH oxidase; PTP1B, protein tyrosine phosphatase 1B; TNFa, tumor necrosis factor alpi

population studies [1-3]. On the other ha

experimental animals suggests a benefit

sent in fruits and vegetables in the dev

ciated pathologies triggered by consum

actively investigated for their potential

tions, particularly metabolic disorders.

dence supports a potential beneficial act

[4] and cardiovascular health [5].

Among phytochemicals, anthocyanic

beneficial actions.

and obesity put individuals at risk of major health

iding type 2 diabetes (T2D), nonalcoholic fatty liver

.D) and cardiovascular disease. Consumption of Western

be a major contributing factor to the increased rates of

d obesity in human populations, while consumption of

id vegetables could attenuate these conditions. Evidence

is conflicting when considering overall intakes, types of

etables consumed, and other variables associated with

author at: Department of Nutrition, University of California, Davis, CA, USA.

mice were characterized by increased liver lipid deposition and inflamma

were associated with a decreased ileum expreseria,b,1, Eleonora Cremoninia,b,1, Angela Mastaloudisc, Shelly N. Hesterc, increased expression of NADPH oxidase (NO Wood^c, Andrew L. Waterhouse^d, Mauri Anderson^d, Cesar G. Fraga^{a,e,f}, redox sensitive signals (NF-xB and ERK1/2) tl events and increased GLP-2 levels, the interOteiza a,b, *

prevented, in vitro, tumor necrosis factor alpl_{havition}, University of California, Davis, CA, USA lation, oxidative stress, and NF-cB and ERK i...

vestigated if supplementation with the anthocyanidins (AC) cyanidin and de

and alterations in GI tract physiology are associated with tions [2-6] ects that can contribute to the development of various [1]. Malnutrition, e.g. high fat diets, overweight, and

: AC. anthocyanidins: ERK1/2. extracellular signal-regulated kinase: FITC. fluor high fat diet; HNE, 4-hydroxynonenal; IFN-y, interferon gamma; LPS, lipopolys , non-alcoholic fatty liver disease; NOS2, nitric oxide synthase 2; PCA, protocate tight junction; TNFa, tumor necrosis factor alpha

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Clinical Study

Efficacy of an Anthocyanin and Prebiotic Blend on Intestinal Environment in Obese Male and Female Subjects



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Food & Function

PAPER

Drafted

A randomized placebo-controlled cross-over study on the effects of an anthocyaninblend on inflammatory and metabolic responses to a high-fat meal in healthy subject

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w nutrients

MDPI

A Novel Prebiotic Blend Product Prevents Irritable Bowel Syndrome in Mice by Improving Gut Microbiota and Modulating Immune Response



Abstract: Irritable bowel syndrome (IBS) is the most common functional gastrointestinal disorder yet it still lacks effective prevention therapies. The aim of this study is to determine whether a novel prebiotic blend (PB) composed of fructo-oligosaccharide (FOS), galactooligosaccharide (COS), inulin and anthocyanins could be effective in preventing the development of IBS. We explored the possible mechanisms both in animal and in cells. Post-infectious IBS models in C57BL/6 mice were established and were pretreated with the PB, PB and probiotic strains 8 weeks in advance of infection. Eight weeks after infection, intestinal tissues were collected for assessing histomorphology, visceral sensitivity, barrier function, pro-inflammatory cytokines expression and proteomics analysis. Fecal samples were also collected for microbiota analysis. The pro-inflammatory cytokines expression in Caco-2 cells were evaluated after co-incubation with PB and Salmonella typhimurium 14028. The results showed that PB significantly decreased the pro-inflammatory cytokines both in infected Caco-2 cells and PI-IBS models. The loss of body weight, decreased expression of tight junction protein Occludin (OCLN), and changes of the microbiota composition induced by infections could be greatly improved by PB intervention (p < 0.05). The proteomics analysis revealed that this function was associated with Peroxisome proliferator-activated receptor (PPAR)y pathway.

Keywords: prebiotics; irritable bowel syndrome; inflammation; visceral hypersensitivity; gut microbiota; prebiotic blend (PB)

1. Introduction

Functional gastrointestinal disorders (FGD) are recognized by physiological abnormalities that contain motility disturbances, increased visceral sensitivity and altered central nervous system function without organic illness. Irritable bowel syndrome (IBS) is the most common type of functional disorder characterized by abdominal pain and discomfort and associated with altered bowel function [1,2]. Based on the symptoms, IBS may be characterized by a predominance of constipation (IBS-C) or diarrhea (IBS-D) or by mixed bowel habits (IBS-M), and unsubtyped IBS (IBS-U) [2,3]. The global prevalence of IBS is 11.2% with the incidence rates at over 20% in England, America, Greece and Pakistan, and rates of 10-15% in China, Canada and Australia [4,5]. The high prevalence together with the reduced quality of life in patients suffering from IBS imposes a significant negative burden on both patients and society. Meta-analyses demonstrated a six-seven-fold increased risk of developing

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thocyanins inhibit tumor necrosis alpha-ind s of Caco-2 cell barrier integrity†

nora Cremonini, @a,b Angela Mastaloudis, @C Shelly N. Hester, C dra V. Verstraeten, @ d.e Maureen Anderson, f Steven M. Wood, c rew L. Waterhouse, Cesar G. Fraga * a.g.h and Patricia I. Oteiza * a.b.

creased permeability of the intestinal barrier is proposed as a major event in the pathoph



of myosin light chain (MLC). The protective actions of the ACRE on TNF α -induced Ti positively correlated with the sum of cyanidins and delphinidins ($r^2 = 0.83$) content in ever, no correlation was observed between TEER and ACRE total AC, malvidin, or peonic its support a particular capacity of cyanidins and delphinidins in the protection of the er against inflammation-induced permeabilization, in part through the inhibition of

inflammation and moduimportant in their protecact.1,2 In particular, they dations and/or pharmacological strategies. ntion and amelioration of

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of California, Davis, CA, USA L Universidad de Buenos Aires.

MOL), CONICET-Universidad

number of existing flavonoids with different chemic tures and spatial configurations, and the multiple me generated by both the gut microbiota, and once absort chain kinase; tissue metabolism,8 complicate precise nutritional r

Anthocyanins (AC) constitute one of the major However, the large subgroups, 9,10 which are present in and provide color fruits and vegetables, e.g. berries, red cabbage, and b Many different AC exist, differing in the bonded s eties, the number and substitution of hydroxyl groups aliphatic or aromatic acids attached to the sugars. evidence suggests that AC consumption could provide to human health.12 However, their potential benefits tinal health, and especially under conditions of intestinal permeability, are poorly understood and in further characterization.

> Intestinal barrier permeabilization and the increased passage of deleterious substances preser lumen, are key contributors to the pathophysiology of diseases (e.g. inflammatory bowel diseases, celiac a intestinal autoimmune diseases) and contribute to th

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