



COMMITMENT TO RESEARCH

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- Cleveland Clinic Foundation
- Laboratory Experimental Gerontology



Açai Research

Monavie.com

AGRICULTURAL AND FOOD CHEMISTRY

J. Agric. Food Chem. XXXXX, xxx, 000 A

In Vitro and in Vivo Antioxidant and Anti-inflammatory Capacities of an Anti-Fruit and Berry Juice Blend. Re Randomized, Double-Blinded, P. AGRICULTURAL AND Crossover Study

GITTE S. JENSEN,** XIANLI WU, SKELLY M. PATTE STEVE G. CARTER, LARRY SCHERWITZ, ROBERT BEA AND ALEXANDER G. SCHAUSS

er NIS Irc., 601 13th Avenue N.E., Calgary, Alberta, Carne Bolger NS, Dr., 691 Jdt. Avenne N.E. Calgery, Alberts. Censist I Spraiding and Biggler Chesters Children's Northine Census, Crimen Sciences, Life Rook, Sciences (2020, 1882, 1843) Exploration, Natural Medical Products Research, ARSSR 42, Sections, 43 Psysling, Washington 93337, and Barara's Wedness Center, 19 Klannali Falls, Oregon 97003.

This study investigated the in vitio and in vitio activation and emvirtant juice being (jii). Worselve Activa, containing a mission of this and before an in the disease of the containing and an in the disease and containing and conta chemogramatrix fib $(p \in 0.03)$, shadoline $B((p \in 0.05)$, and $U \in (p \in 0.05)$. On the binder, delated-controlled, crossover that short D that they applies a sand anticopiant action $(p \mapsto 0.05)$. States $(p \in 0.05)$. States $(p \in 0.05)$. States $(p \in 0.05)$ and $(p \in 0.05)$. States $(p \in 0.05)$ and $(p \in 0.05)$. States $(p \in 0.05)$ and $(p \in 0.05)$. States $(p \in 0.05)$ and $(p \in 0.05)$. States $(p \in 0.05)$ and $(p \in 0.05)$. States $(p \in 0.05)$ and $(p \in 0.05)$. States $(p \in 0.05)$ and $(p \in 0.05)$. States $(p \in 0.05)$ and $(p \in 0.05)$. States $(p \in 0.05)$ and $(p \in 0.05)$.

KETWOODS: Anticockent, and inframentary, lipid prevalence, cell based anticocken protection (CAA 4s); ergoen radical absorbance capacity (OIAC) easily; equi, Eulope observes, fivil price, in billule acid reactive substances saxsy (TEARS)

Reactive oxygen and nitrogen species play key roles in normal physiological processes, including cellular ifoliotest processes, protection from pathogens, various cellular signaling pathways, and regulation of vascular time (1). Oxidative stress is caused by an insufficient capacity of biological systems to neutralize

excessive free radical production, which can of distances and uping (2), including cardiovasch neurodegenerative dense and age-related copy obesity and invalin resistance (5), as well as a dysfunction (6). Oxidative stress also contribu-cumulation of damaged manoemolecules and organ in a minushundria (4, 7). dysfunction (o). Unanimose on cumulation of damaged macros ing mitochondria (4, 7).

The antioxidant capacity of foods, juices, and te The infinitialist capacity of foods, juices, and tel-instance is not protection from exhibitive stress in studies. A recurst study assessed the increase in plan exhibition capacity after the consumption of other an and-ordant capacity after the consumption of other an and-ordant capacity of whole fruits added (8). This of a known quantity of whole fruits added (8). This

10.1021/98016157 CCC: \$40.75 © XXXX American Chemical Society Web 08/22/200

J. Agric. Food Chem. XXXX, xxx, 000 A

FOOD CHEMISTRY Comparison of Chemical and Cell-Based Antioxidant Methods for Evaluation of Foods and Natural Products: Generating Multifaceted Data by Parallel Testing Using Erythrocytes and Polymorphonuclear

DANA HONZEL, "STEVE G, CARTER," KOMERLEE A, RIDMAN," ALEMANDER G, SCHAINS, [†] JOHN R, BODRES, [‡] AND GITTE S, JESSEN[®] J

The objective of this shady was to compare three tests imparently used for evaluation of articularity operation in many of the compared test of the compared

KETWOOTG: Autocident, method, trythmocyda, polymorphanolidar, cell based sricordant protection sassey (CAD-e), crypten period shorehand capacity (GALC) seasy

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10.1021/(#60/414 CCC: \$40.75 © XXXXI Anseroin Chemical Society Published on Web 08/22/2008

Phytochemical and Nutrient Composition of th

8598 J. Agric. Food Chem. 2006, 54, 8598-8603

Amazonian Palm Berry, Euterpe oleraceae ALEXANDER G. SCHAUSS,** XIANLI WU, 13 RONALD L. P

DINESH PATEL, DERIAN HUANG, V AND JAMES P. P.

Martial and Madriand Pandaris Research, ADMRR Life Sciences, & Paylande, Washings 2017, Agrichities, Beauster's Service, Actions Co. U.S. Dayerment of Agrichitan, 1213 Meet Life Reck, Advances and Agrichitan, 1214 Meet Service and Reck Science Life Reck, Advances 2019, of Sections for Medical Science Life Reck, Advances 2019, Impected Simuration, 501 Meetings, Meeting 2019, Impected Simuration, 501 Meetings, Meetings 2019, Impected Simuration, 501 Meetings, Meetings 2019, Impected Simuration, Meetings 2019, Impected Simuration, Meetings 2019, Impected Simuration, Meetings 2019, Impected Simuration, Section and Technical Computer, Sciences 2019, Impected Simuration, Section 2019, Impected Simuration, Section

Europe obstances is a large pain the indigenous to the Amazon River in South America. In this, lection as acut, sof great accessors valued in South America, but the Licens as acut, sof great accessors valued as attended to the Europe of the Unapplication (PACIA), premised produces used for all many findings, sethologisms (PACIA), premised syldensies and op a the many polypothermicals. The ACIAs, synamics Sydensies and op to be preformant ACIAs, the other tesses and to found as mines ACIA. It is actually the preformation of the SIAC tree dottes were also found as mines ACIA actual act toentration of total PACs was calculated as 12.99 mg/g DW. Other flat nntin, isovitexin, scoparin, and taxfolin deoxyhexose, along with sev detected. Resveratrol was found but at a very low concentration. In acids, amino acids, sterols, minerals, and other nutrients were a nesturated lathy acid, total monounsaturated fathy acid, and total is 15, 60.2%, and 28.7% of total lathy acid. Oleic acid (53.9%) at 10 but the two normans total country. o be the two dominant fasty acids. Nineteen amino acids we was determined to be 7.59% of total weight. The total sterois are. The three sterois 8-sitosteroi, campesteroi, and sigmassis. The three sterois B-sitosterol, campesterol, and sigmaste slysis is also presented. Microbiological analysis was als

Euterpe oleraceae; acai; anthocyanin; proanthocya

popularly calle beverages and value, differen

1060976g CCC: \$33.50 © 2006 America Published on Web 100727276

and possible

AGRICULTURAL AND FOOD CHEMISTRY

8604 J. Agric. Food Chem. 2006, 54, 8604-8610

Antioxidant Capacity and Other Bioactivities of the Free Amazonian Palm Berry, Euterpe oleraceae Mart. (Al

Alexander G. Schauss,* * Xianli Wu, $^{\sharp 3}$ Ronald L. Prior, $^{\sharp}$ Boxes DETAN HUANG, JOHN OWENS, VAMIT AGARWAL, GITTE S. JENSEN AARON N. HART, 8 AND EDWARD SHANBROM*

AMON N. HAUT, "AND ENWARD SUMMERS?"

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KEYNOROD: Eutrys oliminate zuer: hasche organ species (ROS); entiestent; OSAC., NORAC; (ROSAC); superatios; SOC; TAC; cycleotypenass (COC); matrophage phagosytosis assay; ninic exide easey; frequincy/se proliferation assay

High intake of fruits and vegetables was found to positively associate with lower chance of many diseases by epidemiologi-

cal studies and clinical train. Antimistate opposity was believed to be out of the possible mechanism, flough others we train to be out of the possible mechanism, flough others we have been as the contract of the possible of the possible

10.1021/0609779 CCC: \$33.50 © 2006 American Chemical Society Published on Web 10/07/2006

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590 ALTERNATIVE THERAPIES, MAY/JUN 2009, VOL. 15, NO. 3



Experimental Biology



2012

- Session: Obesity and Metabolic Syndrome
 - Effects of brown seaweed &licorice on blood glucose & weight loss in overweight subjects
- · Session: Biochemistry of Vitamins and Minerals
 - Improvement in skin carotenoid levels assessed by reflectance spectroscopy
- Session: Energy and Nutrient Metabolism
 - Effects of MonaVie RVL weight loss program on body composition and blood lipids
- Session: Metabolic and Disease Processes
 - Acai juice with beta-glucan reduces URTI symptoms and improves mood state in stressed subjects

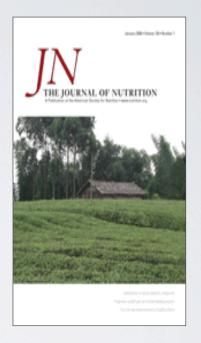
2013

- Session: Metabolic and Disease Processes
 - Effect of Magnolia/Phellodendron on Cortisol and Mood State in Moderately Stressed Subjects
- Session: Obesity and Metabolic Syndrome
 - Effect of Eurycoma longifolia on Stress Hormones & Psychological Mood State in Stressed Subjects
- · Session: Biochemistry of Vitamins and Minerals
 - Study: Method for Improved Thermal & Chemical Stability of Carotenoids in MonaVie Juice Products

The American Journal of CLINICAL NUTRITION









THE OFFICIAL JOURNAL OF THE AMERICAN NEUROLOGICAL ASSOCIATION AND THE CHILD NEUROLOGY SOCIETY

More fruits and vegetables?

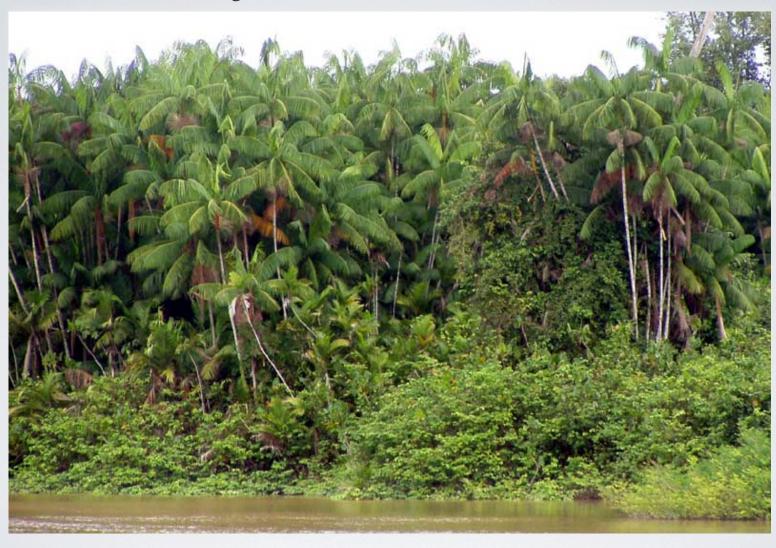


•A major reason is due to compounds called **flavonoids**.

There are over 6,000 flavonoids in plant foods.

Certain flavonoids exhibit health benefits for heart, brain, skin, and cells throughout the entire body.

Açai Palm Trees



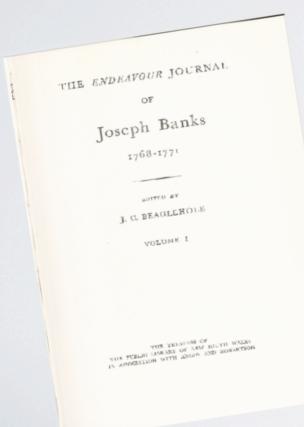
THE AMAZON VENEZUELA course of river flows along the border between two countries ATLANTIC Mouths of OCEAN Equator the Amazon Marajó ECUADOR Viumayo River Island Belém Japurá River Manaus Tucurui Iquitos Urucu River Dam Javari River Nauta. aranon Amazon CARAJÁS PROJECT Purus River B PACIFIC OCEAN

Water rises from 7.5 to 15 meters in Flood Plains of the Amazon Delta twice each day during the dry season

<u>water</u> Ievel



The earliest consumption documented of açai fruit in the Amazon was reported in 1768 in the diary of Joseph Banks.



• "Palm berries appear much like black grapes but for having scarce any pulp covering a very large stone." (p.201)



Consumption of Açai Pulp as a Food in the Amazon Painted by Portuguese Botanist ~1791.



Açai has over 3,000 Phyto-nutrients

Taxifolin Beta-sitosterol Epi-catechin Kaempferol Vanillic acid Campesterol Eriodictyol Luteolin Catechin Eriodictyol-7-Luteolin-4-Chrysoeriol glucoside glucoside Coumeric acid Eurpatorin Myricetin Cyanidin-3-Ferulic acid Orientin glucoside Flavanols Proanthocyanin Cyanidin-3-(numerous) Protocatchuric glucoside-**Flavonols** acid coumaraterutinosi(numerous) Protocatechic acid de Gallic acid Quercitin-3arabinoside Cyanidin-3-0-Homoorietin rutinoside Isoquercitin Resveratrol Deoxyhexose Isovitexin Sigmasterol +++

Preparing Açai Pulp

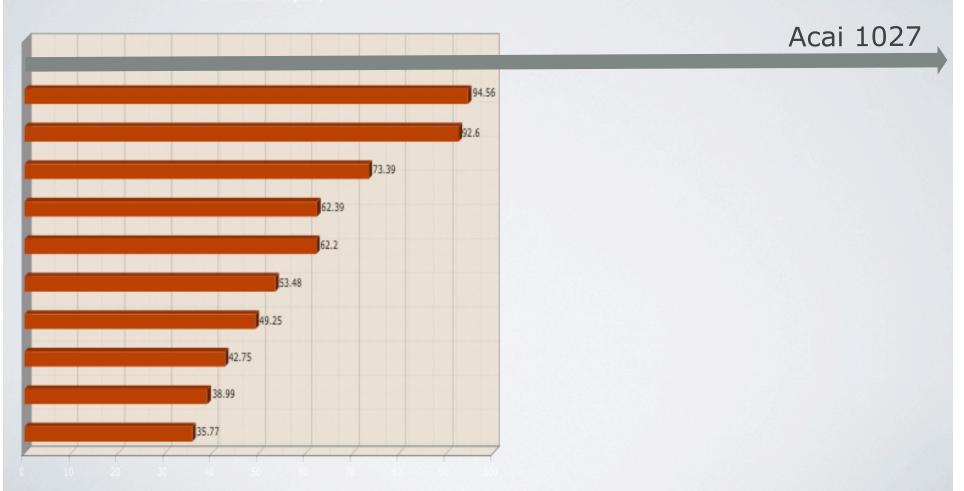
- Vacuum freeze-drying removes 99% of the water.
- Preserves:
 - phytochemicals
 - enzymatic activity
 - · nutritional value
 - antioxidant activity
- Maintains bioactivity
- Extends taste & color
- Increases shelf-life





Açai ORAC Score





Emv & Emvlite



Longer-lasting Sustained Energy + 40 million cans sold





	TOP A	Juice Percentage	Palatinose TM for Lasting Energy	Contains Açai, Acerola, Cupuaçu, & Camu Camu	200% DV of four essential B vitamins	D-Ribose (250 mg)	Cha de Burge	Маса	Yerba Mate	Liyrosine	Green lea	No Preservatives	No more than 80 mg of caffeine	No Added Refined Sugars	D-Ribose	No Artificial Sweeteners	Guarana	Panax Ginseng	No Artificial Colors	No Artificial Flavors
	MonaVie E ^{MV}	80	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Red Bull	0										√	√			-√			1	m
0	Full Throttle Citrus	0													V	√				
5	Amp Original	χ*														V	√	V		√
1	Quixtar XS Gold: E+	χ*												√				√	V	√
HIRO	TNI HIRO Energy	Χ*			(8)								$\sqrt{}$	√	√		V		√	√
1.6	Usana Rev3	Χ*									√				√	√		√	√	√
OME:	Rockstar Juiced	50																V	√	√
	Monster M-80	80														√		V	√	√

	Caffeine per can [mg]	Sugar sources	Artificial sweeteners None			
MV Energy	80 (from natural sources)	Fruit, palatinose				
Red Bull	76 Synthetic	Sucrose, glucose	None			
Monster M-80	160	Fruit, glucose	Sucralose			
Rockstar Juiced	160	Fruit, sucrose	Sucralose, Acesulfame potassium			
Full Throttle	144	High fructose com syrup and/or sucrose	None			
Amp Overdrive	160	High fructose corn syrup	None			
TNI HIRO Energy	73	Fruit	Sucralose, Acesulfame potassium			
Usana Rev3	120	Fructose, cane juice syrup	None			
Quixtar XS Gold	83	None	Sucralose, Acesulfame potassium			



Provides longer lasting energy.*

^{*}Percentage of juice not listed

2012 Experimental Biology



Glucosamine Hydrochloride helps to stimulate "Autophagy" – cellular turnover process (regeneration/rejuvenation)

active





Today 98% of all Glucosamine is made almost exclusively from shellfish



active



MonaVie uses a Patented, vegetablederived Glucosamine Hydrochloride

Generally Recognized As Safe (GRAS), Kosher certified OK for vegetarians



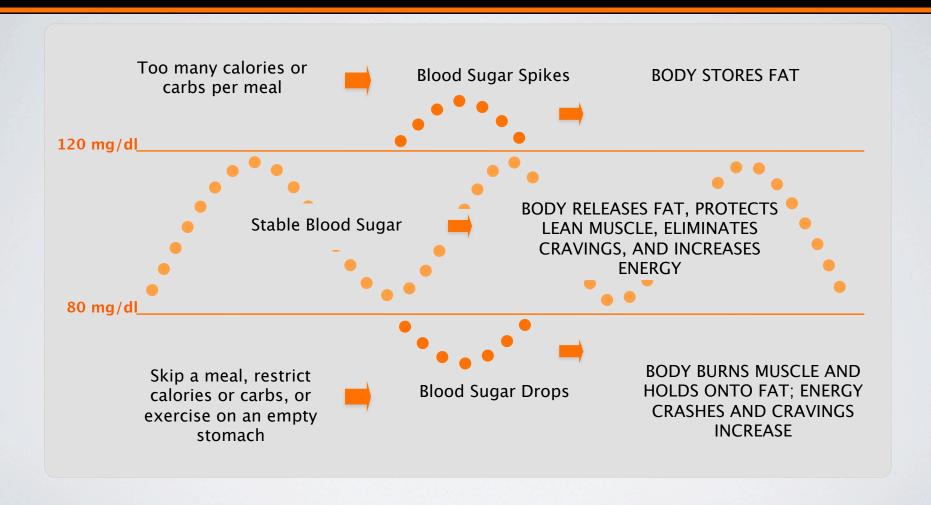




Monavie has always been ONE step ahead

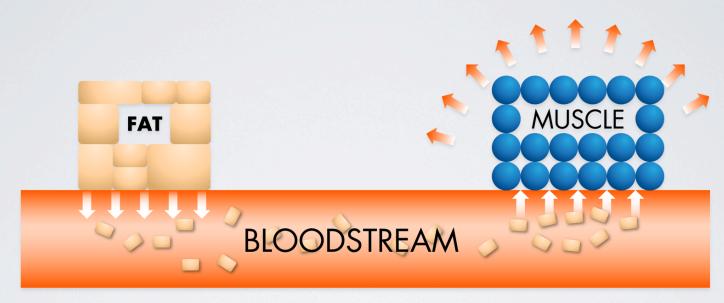


Blood Sugar balance





Blood Sugar balance



- 1) Fat Is Released into the Bloodstream
- 2) Muscle Absorbs Fat
- 3) Fat Is Burned as Energy

FAT FACT:

Every Pound of Fat Stores 3,500 Calories

MUSCLE FACT:

Fat Is Primarily Burned in Muscle

More Muscle = Faster Metabolism















Prove the value of MonaVie products with the science of VIEW





(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2010/0179435 A1 Sharifzadeh et al.

Jul. 15, 2010 (43) Pub. Date:

600/476

(54) NONINVASIVE MEASUREMENT OF FLAVONOID COMPOUNDS IN BIOLOGICAL

Mohsen Sharifzadeh, Salt Lake City, UT (US); Igor V. Ermakov, Salt Lake City, UT (US); Werner Gellermann, Salt Lake City, UT

Correspondence Address: GIFFORD, KRASS, SPRINKLE, ANDERSON & CITKOWSKI, P.C PO BOX 7021 TROY, MI 48007-7021 (US)

(21) Appl. No.: 12/352,702

(22) Filed: Jan. 13, 2009

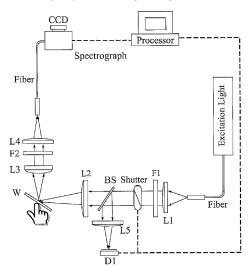
Publication Classification

(51) Int. Cl. A61B 6/00 (2006.01)

ABSTRACT Methods and apparatus are disclosed which facilitate the rapid, noninvasive and quantitative measurement of the con-centration of flavonoid compounds, as well as their isomers and metabolites, in biological tissue such as human skin.

(52) U.S. Cl. ..

Low-intensity, visible-light illumination of intact tissue pro-vides for high spatial resolution, and allows for precise quantification of the flavonoid levels in the tissue. The preferred embodiments malce use of a previously unknown, low-oscillator strength, optical absorption transition of flavonoids. This malces it possible to optically excite flavonoids in living human tissue outside the absorption range of other, potentially confounding skin chromophores. A system constructed in accordance with the invention includes a source of light for illuminating a localized region of tissue with light that over-laps the absorption bands of a flavonoid compound; a device for detecting the fluorescence emitted by the flavonoid compound resulting from the illumination; and a processor for determining the concentration level of the flavonoid com-pound based upon the detected fluorescence.



MONAVIE ANTIOXIDANT SCANNER

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2009/0306521 A1 Ermakov et al.

(43) Pub. Date: Dec. 10, 2009

NONINVASIVE MEASUREMENT OF CAROTENOIDS IN BIOLOGICAL TISSUE

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Correspondence Address: GIFFORD, KRASS, SPRINKLE, ANDERSON & CITKOWSKI, P.C PO BOX 7021 TROY, MI 48007-7021 (US)

(73) Assignee: Longevity Link, Inc., Salt Lake City, UT (US)

12/134,667 (21) Appl. No.:

(22) Filed: Jun. 6, 2008

Publication Classification

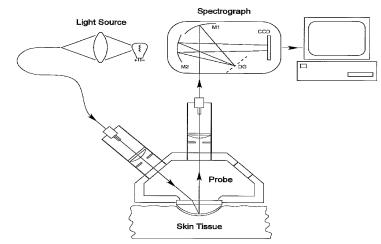
(51) Int. Cl. A61B 6/00 A61B 5/103

(2006.01)(2006.01)

600/477; 600/587 (52) U.S. Cl.

(57) ABSTRACT

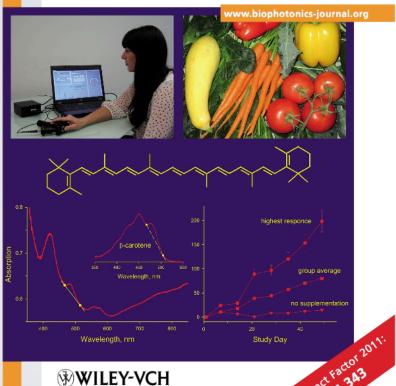
A method and apparatus are provided for the determination of carotenoid antioxidants and similar chemical compounds in biological tissue such as living skin. The method and apparatus provide a noninvasive, rapid, accurate, and safe determination of carotenoid levels which in turn can provide diag-nostic information of the antioxidant status of tissue. Reflection spectroscopy is used to measure the concentrations of carotenoids and similar substances in tissue. White light is directed upon the area of tissue that is of interest. A small fraction of diffusively scattered light is collected and measured. The tissue is pressured to temporarily squeeze blood out of the measured tissue volume while the reflection spectrum is continuously monitored, displayed, and analyzed in near real time. After an optimal time period of typically 15 seconds, the influence of the dominating hemoglobin and oxyhemoglobin tissue absorptions on the reflection spectra are minimized.





Journal of Biophotonics (July 2012)





ISSN 1864-063X J. Biophotonics, Vol. 5, No. 7 (July), 477-592 (2012)

broad-band white light spanning the spectral range from 350-850 nm and the spectral composition of the diffusively reflected light is analyzed in real time. Topical

pressure is applied to temporarily squeeze blood out of the illuminated tissue volume. In this way the influence of oxy-hemoglobin on the reflection spectra is effectively reduced. After a short optical clearing time the carotenoid absorption becomes easily discernable in a 460– 500 nm spectral window and its optical density can be calculated with high accuracy. Our empirical methodology provides a non-invasive rapid determination of skin carotenoid levels, can be used to monitor skin carotenoid concentration changes over time in response to carotenoid containing natural or supplemental diets, and is easily adaptable for applications in clinical and field set-

Determination of human skin carotenoid levels from reflection-based absorption spectra. After temporally squeezing blood out of the measured tissue volume, a carotenoid-related absorption band (shaded area), which is superimposed on a residual scattering background, is discernible in the 467 to 515 nm region. It is due to the one-phonon vibronic absorption transition of carotenoids, shown for comparison also in the insert for a pure β -carotene solution. The optical density of the skin carotenoid one-phonon absorption is used as a quantitative measure for the skin carotenoid levels.

J. Biophotonics 5, No. 7, 559-570 (2012) / DOI 10.1002/jbio.201100122



FULL ARTICLE

Dermal carotenoid measurements via pressure mediated reflection spectroscopy

Igor V. Ermakov and Werner Gellermann*

Department of Physics and Astronomy, University of Utah, Salt Lake City, UT 84112, USA

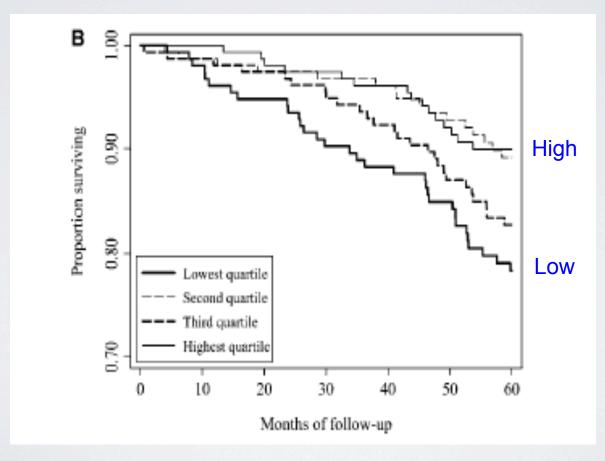
Received 7 November 2011, revised 23 December 2011, accepted 4 January 2012 Published online 10 February 2012

Key words: Reflection spectroscopy, skin, carotenoids, antioxidants

We describe a reflection-based method for the quantitative detection of carotenoid antioxidants in living human skin. The skin tissue site of interest is illuminated with



Total Serum Carotenoids 5-year All-Cause Mortality Baltimore Health & Aging Studies Johns Hopkins Medical School



Ray et al., J. Nutr. 2006

Flavonoids Improve Heart Health





High Anthocyanin Intake Is Associated With a Reduced Risk of Myocardial Infarction in Young and Middle-Aged Women

Aedin Cassidy, Kenneth J. Mukamal, Lydia Liu, Mary Franz, A. Heather Eliassen and Eric B. Rimm

Circulation. 2013;127:188-196 doi: 10.1161/CIRCULATIONAHA.112.122408

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Harvard School of Public Health

90,000 subjects / 18 years!

Consumption of berry flavonoids reduces heart attack risk ~30%!







VAULT

