

REVIVIFY[®]

RESTORES WELL-BEING

A NEW APPROACH TO
HEALTHY LIVING & WELL-BEING

PATENT TITLE: "SUPEROXIDE DISMUTASE (SOD) SOLUBLE FIBER COMPOSITION"

The patent also reflects:

Provided are composition comprising super-oxide dismutase and a soluble fiber. The composition may additionally comprise other antioxidants, vitamins and nutrients.

The composition can be used as dietary supplements and for improving health and well-being.

www.revivifyforlife.com

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**A NEW APPROACH TO
HEALTHY LIVING & WELL-BEING**

***AN INTEGRATION OF CELLULAR HEALTH INTEGRITY AND
GUT HEALTH BENEFICIAL ECO SYSTEM.***

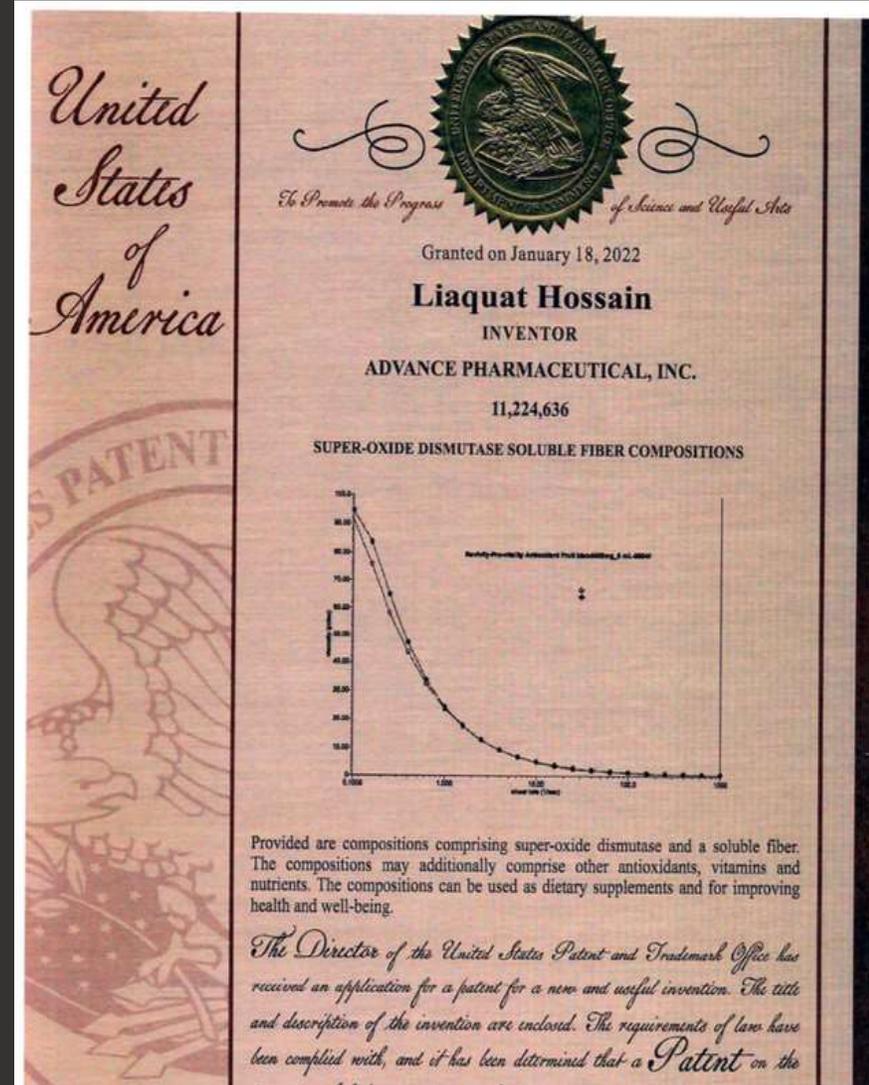
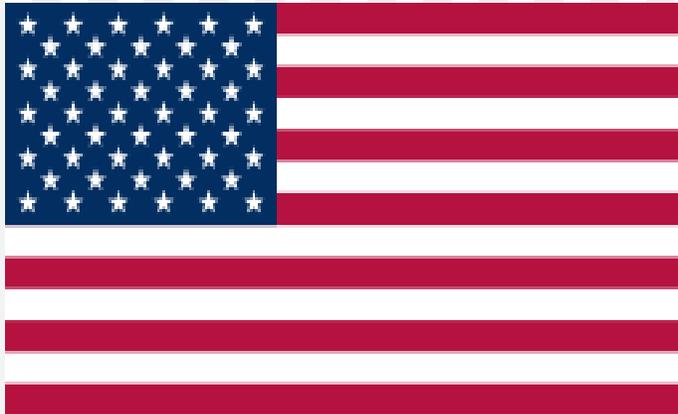
Revivify Stands of "Healthy Living , Well-Being, Anti-Aging , Longevity".

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U.S PATENT title: Superoxide Dismutase Soluble Fiber Composition



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International Patent:

Title: Superoxide Dismutase Soluble
Fiber Composition



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(10) International Publication Number
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(51) International Patent Classification:
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A61K 31/4432 (2006.01)

(21) International Application Number:
PCT/US2020/057035

(22) International Filing Date:
10 June 2020 (10.06.2020)

(25) Filing Language:
English

(26) Publication Language:
English

(30) Priority Data:
62/860,214 11 June 2019 (11.06.2019) US
62/992,459 20 March 2020 (20.03.2020) US

(71) Applicant: **ADVANCE PHARMACEUTICAL, INC.**
(US/US); 895 Waverly Avenue, Holtsville, New York
11742 (US)

(72) Inventor: **BOSSAIN, Liaquat**; 895 Waverly Avenue,
Holtsville, New York 11741 (US)

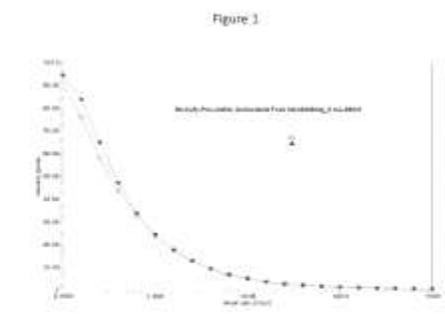
(74) Agent: **SHULL, Seth P., MIDDLEBERRY WOOD-
HOUSE & MILLS PLLC**, 8201 Greenboro Drive, Suite
1000, McLean, Virginia 22102 (US)

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BR, CA, CH, CL, CN, CO, CR,
CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KH, KN, KP, KR, KW, KZ,
LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX,
MY, NZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GE, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM),
European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SK, SM, SI, TR, UA, UK, ES, JP, KR, RU, SG, TW, VN, WO), Latin American (AR, BR, CL, CO, EC, GT, HN, NI, PA, PE, PR, PY, SV, UY, VE), OAPI (BF, BJ, CF, CG, CI, CM, GN, GU, GW, IL, IN, IR, IS, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW).

WO 2020/252051 A1

(84) Title: SUPER-OXIDE DISMUTASE SOLUBLE FIBER COMPOSITIONS



(57) Abstract: Provided are compositions comprising superoxide dismutase and a soluble fiber. The compositions may additionally comprise other antioxidants, vitamins and nutrients. The compositions can be used as dietary supplements and for improving health and well-being.

[Continued on next page]

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China Patent:

Title: Superoxide Dismutase Soluble
Fiber Composition



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RESTORES WELL-BEING

A NEW APPROACH TO
HEALTHY LIVING & WELL-BEING

Bangladesh Patent:

**Title: Superoxide Dismutase Soluble
Fiber Composition**



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
DEPARTMENT OF PATENTS, DESIGNS AND TRADEMARKS



Letters Patent

Issue No. 103

Date: 15/01/23

Patent No. : 1006567
Title of Invention : Super-Oxide Dismutase Soluble Fiber Compositions.
Filing Date : 10/06/2020
Priority no. & date : US 62/860,214 Dated: 11/06/2019 and US 62/992,459
Dated: 20/03/2020
Proprietor(s) : Advance Pharmaceutical, Inc. A Corporation Incorporated in
USA, 895 Waverly Avenue, Holtsville, NY 11742, United
States of America.
Inventor(s) : Liaquat HOSSAIN, Nationality: US.

This is to certify that, in accordance with the provisions of the Bangladesh Patent Act 2022, a patent with the right to exclude others from making, selling or using the invention throughout Bangladesh or to import the same into Bangladesh for the term of this patent, subject to the payment of prescribed fees as provided by law has been granted to the Proprietor(s) for the titled invention.


(Alaya Khatun)
Deputy Registrar

Department of Patents, Designs & Trademarks.

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Bangladesh Patent:

**Title: Superoxide Dismutase Soluble
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GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
DEPARTMENT OF PATENTS, DESIGNS AND TRADEMARKS



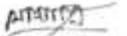
Letters Patent

Issue No. 103

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USA, 895 Waverly Avenue, Holtsville, NY 11742, United
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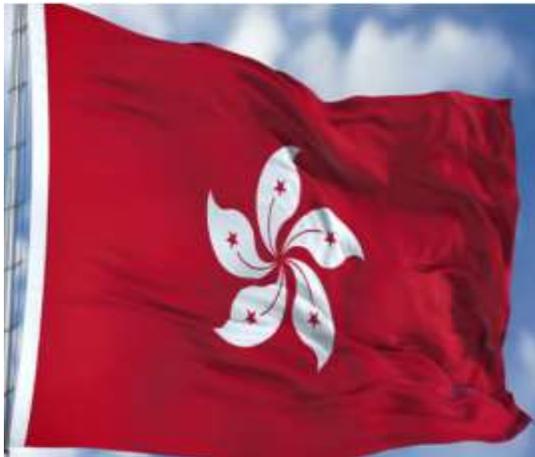
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Hong Kong Patent:

**Title: Superoxide Dismutase Soluble
Fiber Composition**



知識產權署專利註冊處
Patents Registry
Intellectual Property Department



香港特別行政區政府
The Government of the Hong Kong
Special Administrative Region

批予轉錄標準專利證明書

《專利條例》(第 514 章)

CERTIFICATE OF GRANT OF STANDARD PATENT

BY RE-REGISTRATION

Patents Ordinance (Chapter 514)

茲證明下述轉錄標準專利根據《專利條例》第 2 部在今日批予:

I hereby certify that a standard patent by re-registration with the following particulars has been granted under Part 2 of the Patents Ordinance today:

專利編號 Patent No.: HK40070100

申請編號 Application No.: 62022058909.2

專利所有人姓名或名稱及地址 Name and Address of Proprietor:

先進製藥股份有限公司

ADVANCE PHARMACEUTICAL, INC.

895 Waverly Avenue, Holtsville, New York 11742

UNITED STATES OF AMERICA

發明名稱 Title of Invention:

超氧化物歧化酶可溶性纖維組合物

SUPER-OXIDE DISMUTASE SOLUBLE FIBER COMPOSITIONS

轉錄標準專利有效期 (在符合續期的規定下) Term of Standard Patent by Re-registration

(subject to renewal):

由 10.06.2020 起計 20 年

Twenty years commencing on 10.06.2020

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Indonesia Patent:

**Title: Superoxide Dismutase Soluble
Fiber Composition**



KEMENTERIAN HUKUM DAN HAK ASASI MANUSIA
REPUBLIK INDONESIA
DIREKTORAT JENDERAL KEKAYAAN INTELEKTUAL
Jl. H.R. Rasuna Said Kav 8-9, Kuningan, Jakarta Selatan, 12910
Call Center : 152
Website: <http://www.dgip.go.id>, surel: halodjki@dgip.go.id

Nomor : HKI-3-KI.05.01.08-DP-P00202111097
Lampiran : 1 (satu halaman)
Hal : Pemberitahuan dapat diberi Paten

04 Januari 2024

Yth. Maulita Pramulasari
Mirandah Asia Indonesia
Sudirman Plaza, Plaza Marein Lantai 10E
Jalan Jenderal Sudirman Kavling 76-78

Dengan ini diberitahukan, bahwa sesuai dengan hasil pemeriksaan substantif terlampir, permohonan Paten berikut ini dinyatakan dapat diberi Paten:

Nomor Permohonan : P00202111097
Tanggal Penerimaan : 10 Juni 2020
Pemohon : ADVANCE PHARMACEUTICAL, INC.
Judul Invensi : KOMPOSISI SERAT LARUT SUPEROKSIDA DISMUTASE

Selanjutnya, Pasal 126 ayat (1) dan Pasal 128 ayat (1) Undang-Undang Republik Indonesia Nomor 13 Tahun 2016 tentang Paten mengatur bahwa pembayaran biaya tahunan untuk pertama kali wajib dilakukan paling lambat 6 (enam) bulan terhitung sejak tanggal sertifikat Paten diterbitkan (tanggal pemberian Paten), dan apabila dalam jangka waktu dimaksud belum dibayarkan, maka paten dinyatakan dihapus. Informasi atas biaya tahunan dilampirkan bersama dengan Sertifikat dan Dokumen Paten.

Atas perhatian Saudara disampaikan terima kasih.



00-2023-250437

Direktur Paten, Desain Tata Letak Sirkuit
Terpadu, dan Rahasia Dagang



Drs. YASMON, M.L.S.
NIP. 196805201994031002

Tembusan:
1. Yth. Direktur Jenderal Kekayaan Intelektual (sebagai Laporan)
2. Sukma Dhani
NIP. 198111062008122003

Form HKI-3-KI.05.01.08-DP/2022

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HEALTHY LIVING & WELL-BEING

Philippines Patent:

**Title: Superoxide Dismutase Soluble
Fiber Composition**



Digitally Signed by IPO Philippines
20/08/2023
ANN N. EDILLON, M.D., J.D.

LETTERS PATENT INVENTION

PATENT NO. 1/2021/553106

Having complied with the provisions of Republic Act No. 8293 and its regulations, this Office certifies that this Patent with the following particulars was granted on **25 April 2023** with a term until **10 June 2040**, unless otherwise earlier cancelled, lapsed, or forfeited.

This patent grants to the holder the right to restrain, prohibit any unauthorized person or entity from making, using, offering for sale, selling or importing a product (if a patented product) and importing any product obtained directly or indirectly from such process (if a patented process).

Patentee:
ADVANCE PHARMACEUTICAL, INC. (Holtsville, New York, US)

Title of the Invention:
SUPER-OXIDE DISMUTASE SOLUBLE FIBER COMPOSITIONS

Inventors:
HOSSAIN, Liaquat (Holtsville, New York, US)

Publication Date:
17 December 2020



ANN N. EDILLON, M.D., J.D.
Director, Bureau of Patents

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INTELLECTUAL PROPERTY OFFICE OF THE PHILIPPINES
Bureau of Patents

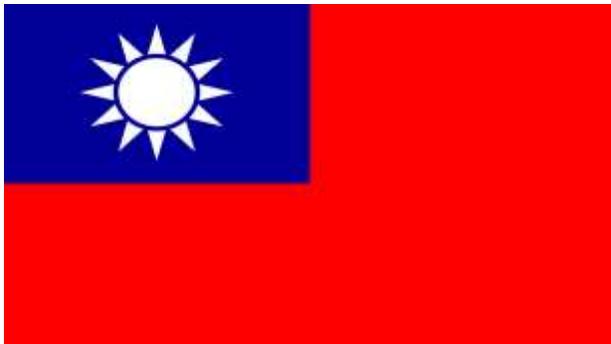
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Taiwan Patent:

**Title: Superoxide Dismutase Soluble
Fiber Composition**



台一國際智慧財產事務所
台一國際法律事務所
Tai E International Patent & Law Office

www.taie.com.tw
ipdept@taie.com.tw

Patent • Trademark • Copyright • Litigation • Commercial Law

Translation of the Patent Office Decision

1. Application Number: 109119531
2. Title: SUPER-OXIDE DISMUTASE SOLUBLE FIBER COMPOSITIONS
3. Applicant(s): Advance Pharmaceutical, Inc.
Nationality: U. S. A.
4. Attorney: 1. Mr. Fred C.T. Yen 2. Mr. Jerry C.Y. Lin
Address: 9th Fl., No. 112, Sec. 2 Chang-An East Road, Taipei, Taiwan, R. O. C.
5. Filing date: June 10, 2020
6. Priority:
 1. U. S. A. • June 11, 2019 • 62/860,214
 2. U. S. A. • March 20, 2020 • 62/992,459
7. Text of the Decision: THIS APPLICATION IS ALLOWED.
8. Date of Allowance: February 15, 2024

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HEALTHY LIVING & WELL-BEING

Israel Patent:

Title: Superoxide Dismutase Soluble
Fiber Composition



רשות הפטנטים



מדינת ישראל
משרד המשפטים

פ.ק. 13

תאריך: י"ד כסלו תשפ"ד
27/11/2023
מספרים: 11272/40

לכבוד
ד"ר שלמה כהן ושות'
דרך בן גוריון 11, סניף מגדלי ויטה, ת.ד. 1878
בני ברק, מיקוד 5126015

א.ג.כ.,

הנדון: **החצה לפני קיבול בקשת פטנט מספר 288799**
סימוכין: מכתבכם מיום 23/11/2023

לתשומת לבכם: מקום בו הנכם מופנים ל"יחוק", הכוונה היא לחוק הפטנטים, התשכ"ו – 1967. מקום בו הנכם מופנים ל"יתקנת", הכוונה היא לתקנות הפטנטים (נהלי הרשות, סדרי דין, מסמכים ואגרות), התשכ"ח – 1968. בהתאם לחוזר רשם 035/2017 – פטנטים לא ניתן להשהות פרסום בקשות פטנט לפי סעיף 26 לחוק.

החצה זו מבוססת על המסמכים הבאים:
שרטוטים מתאריך: 08/12/2021
פרטי הבקשה מתאריך: 08/12/2021
תביעות מתאריך: 19/06/2023

מענה לטיעוני המבקש
ביום 25.06.2023 נשלח למבקשת מכתב ליקויים.
ביום 23.11.2023 המבקשת השיבה למכתב באופן שמתגבר על הליקויים.
בחנית הבקשה הוקדמה בהתאם להוראות סעיף 19א(א)(2) לחוק.

הריני להודיעכם כי בחנית הבקשה הני"ל הושלמה לפי הוראות סעיף 19א(א)(1) ו- (2) לחוק.
הבקשה עומדת בדרישות החוק.

1. חידוש והתקדמות המצאתית
1.1 תביעות 1-34 עונות על דרישות **סעיפים 4 ו-5 לחוק**, מאחר שהאמצאה המוגדרת בתביעות אלה לא נתפרסמה בפומבי לפני תאריך הבקשה ויש בה התקדמות המצאתית.

תשלום אגרת קיבול
1. הבקשה תתקבל בהתאם לסעיף 26 לחוק לאחר תשלום אגרת הקיבול.
2. יש לשלם את האגרה תוך 3 חודשים מתאריך החצה זו.
3. סכום האגרה נכון למועד החצה זו הינו 764.00 ש"ח. הסכום כפוף לעדכון על פי המדד בהתאם לתקנה 16א.

המניה בפירוט למסמך הבכורה

רחוב אגודת ספורט הפועל מס' 1,
הגן הטכנולוגי סלחה בנין מס' 5
ירושלים, מיקוד 9695101
טל': 972-73-3927100 פקס: 972-2-6467774
<https://www.gov.il/he/departments/ilpo>



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South Africa

Patent:

**Title: Superoxide Dismutase Soluble
Fiber Composition**



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Brazil Patent:

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REPÚBLICA FEDERATIVA DO BRASIL
MINISTÉRIO DO DESENVOLVIMENTO, INDÚSTRIA, COMÉRCIO E SERVIÇOS
INSTITUTO NACIONAL DA PROPRIEDADE INDUSTRIAL



CARTA PATENTE Nº BR 112021024179-5

O INSTITUTO NACIONAL DA PROPRIEDADE INDUSTRIAL concede a presente PATENTE DE INVENÇÃO, que outorga ao seu titular a propriedade da invenção caracterizada neste título, em todo o território nacional, garantindo os direitos dela decorrentes, previstos na legislação em vigor.

(21) Número do Depósito: BR 112021024179-5

(22) Data do Depósito: 10/06/2020

(43) Data da Publicação Nacional: 26/04/2022

(51) Classificação Internacional: A23L 33/10; A23L 33/21; A23L 2/02.

(52) Classificação CPC: A23L 33/10; A23L 33/21; A23L 2/02.

(30) Prioridade Unionista: US 62/860.214 de 11/06/2019; US 62/992.459 de 20/03/2020.

(54) Título: COMPOSIÇÕES ALIMENTARES FUNCIONAIS ANTIOXIDANTES PARA A SAÚDE

(73) Titular: ADVANCE PHARMACEUTICAL, INC., Pessoa Jurídica. Endereço: 895 WAVERLY AVENUE HOLTSMILLE, NY 11742, ESTADOS UNIDOS DA AMÉRICA(US), Norte Americana

(72) Inventor: LIAQUAT HOSSAIN.

(87) Publicação PCT: WO 2020/252051 de 17/12/2020

Prazo de Validade: 20 (vinte) anos contados a partir de 10/06/2020, observadas as condições legais

Expedida em: 02/07/2024

Assinado digitalmente por:
Alexandre Dantas Rodrigues
Diretor de Patentes, Programas de Computador e Topografias de Circuitos Integrados

15 de Novembro
REPÚBLICA FEDERATIVA DO BRASIL
de 1889

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Japan Patent:

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PATENT ACCEPTANCE

Countries
Name:

Saudi Arab,
and more to follow:





3 Types of Ingredients

**REVIVIFY
FINISHED
PRODUCT
(ORAL GEL)**

**Superoxide
Dismutase**

Fiber

Polyphenols





3 Types of Ingredients

**REVIVIFY
FINISHED
PRODUCT
(POWDER DRINK)**

**Superoxide
Dismutase**

Fiber

D-Ribose





3 Types of Ingredients

**REVIVIFY
FINISHED
PRODUCT
(WOMEN'S HEALTH)**

**Superoxide
Dismutase**

Fiber

Calcium





3 Types of Ingredients

**REVIVIFY
FINISHED
PRODUCT
(MEN'S HEALTH)**

**Superoxide
Dismutase**

Fiber

**Vitamin
B-12**



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3 Types of Ingredients

**Superoxide
Dismutase**

Fiber

D-Ribose

**REVIVIFY
FINISHED
PRODUCT
(SOFT DRINKS)**



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SOD BENEFITS

Superoxide Dismutase Benefits

Antioxidants

Anti-Inflammatory

*Anti-Infective
(Virus/Bacteria)*

Immunity



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RESTORES WELL-BEING

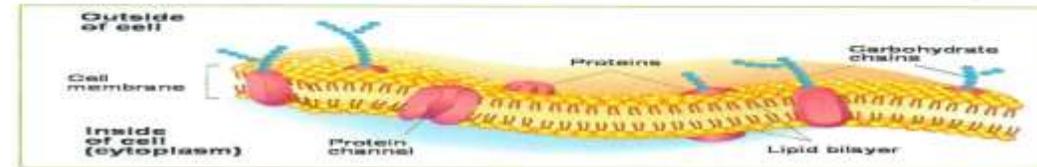
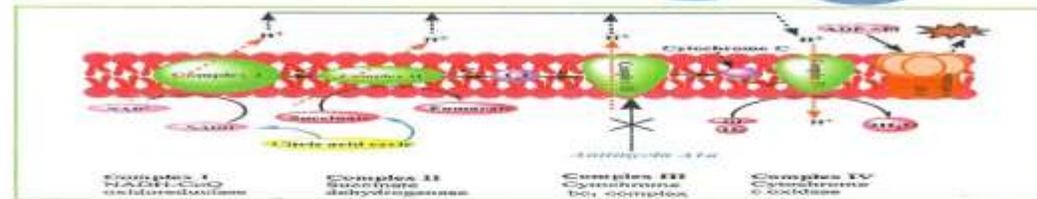
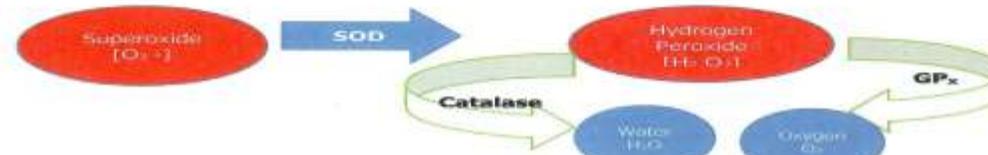
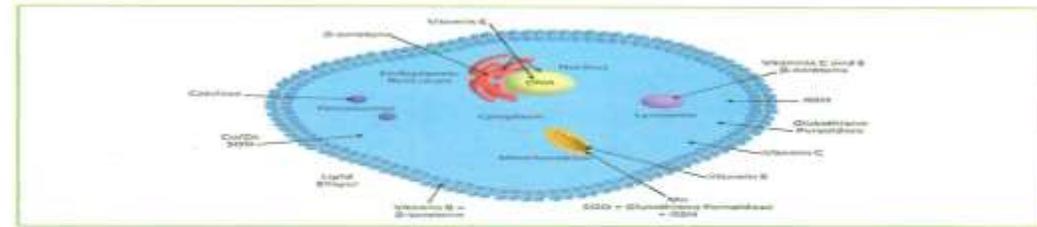
A NEW APPROACH TO
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Cellular activities which cannot be touched, felt, or visualized

Cell does many biological activities in every Nano second.

Thus, require efficiency and effectiveness each and every steps.

Any interruption or inefficiency can cause in alteration in functions.

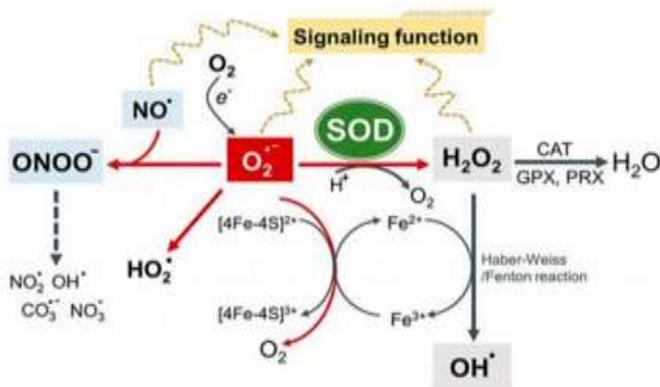


REVIVIFY®

A NEW APPROACH TO
HEALTHY LIVING & WELL-BEING

RESTORES WELL-BEING

SOURCE AND SUPEROXIDE RELATED ROS PROS & CONS



**Cellular activities which cannot be touched,
felt or visualized**

Pros:

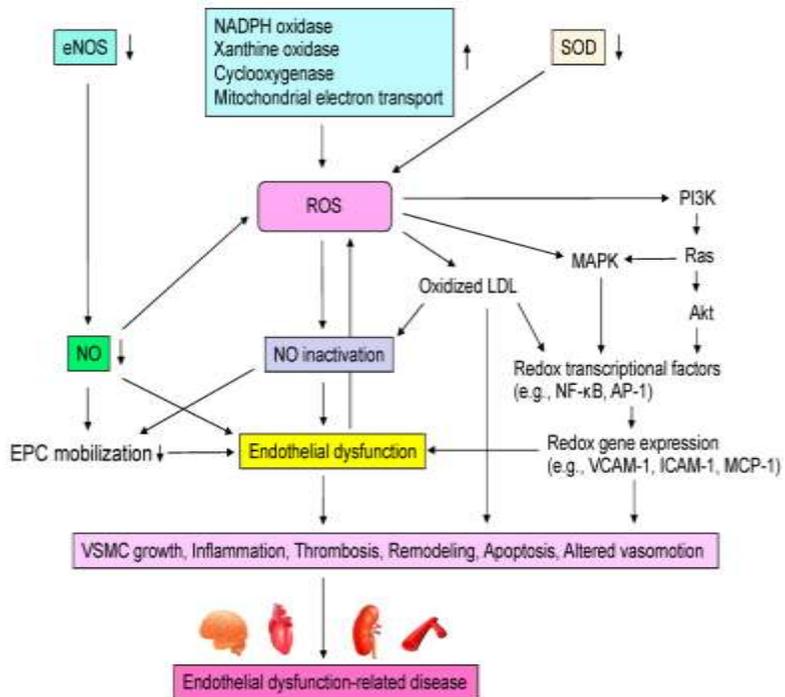
1. Cell signaling communication (conversion of low level hydrogen peroxide)
2. Immunity related: production of ROS to destroy a pathogen such as; viral, bacterial, and cancer cell

Cons:

1. Excessive (extra) superoxide initiate production of toxic ROS like hydroxyl radical (OH^{\cdot}) and peroxide nitrite ($ONOO^-$)
2. Changing in cellular modification by interfering cellular component and/or cellular membrane altering cellular functions and signaling process. This can causes many dysfunctions and diseases.



ROS PATHOLOGY AS OXIDATIVE STRESS



Cellular activities which turns to Pathology.

Oxidative Stress are very important underlying factor in health and disease.

- Diabetes
- Cardiovascular Dysfunction (Heart Attack, Stroke, etc.)
- Neurological Dysfunction (PD, AD, MS, Fatigue, Stress, Anxiety, Depression, etc.)
- Immunity (Viral, Bacterial, Other Pathogen)
- Inflammation (Joint, Intestinal, colon, etc.)
- Skin Health (Acne, Vitiligo, etc.)



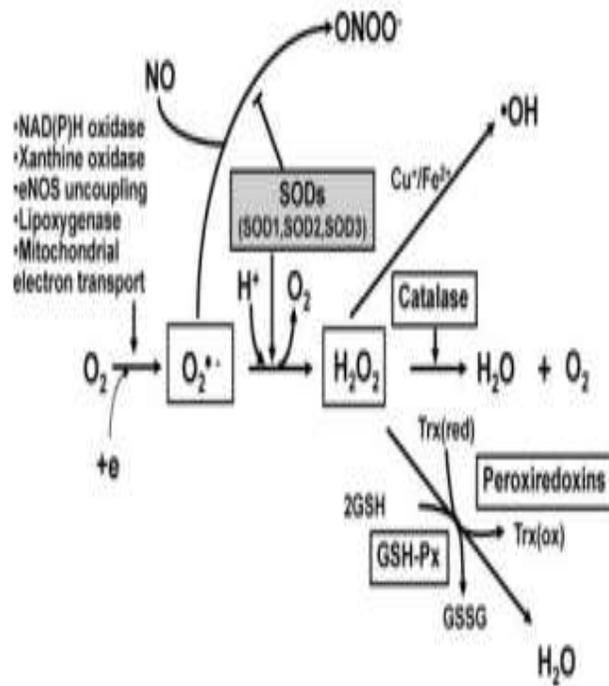
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**Cellular activities which turns to
Pathology.**

SOURCE OF OXIDATIVE STRESS



Major ROS causing cellular Oxidative Stress are:

Mitochondrial Respiratory Chain

NADPH Oxidase

Xanthine Oxidize

Uncoupled eNOS

Myeloperoxidase

Lipoxygenases



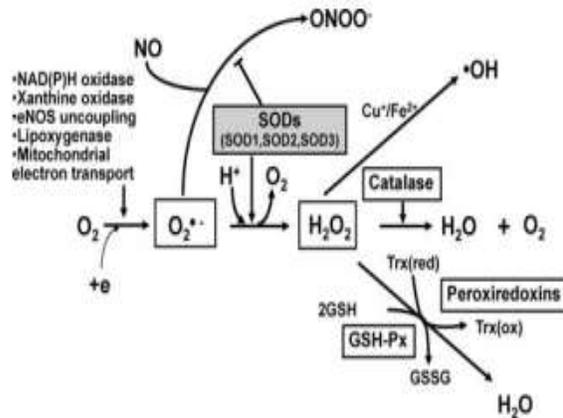
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Cellular activities which turns to Pathology.

SOURCE OF OXIDATIVE STRESS



✓ Pro-oxidant Pathways

✓ NADPH Oxidase

✓ Mitochondrial Respiratory Chain

✓ Xanthine Oxidase

✓ Uncoupled eNOS

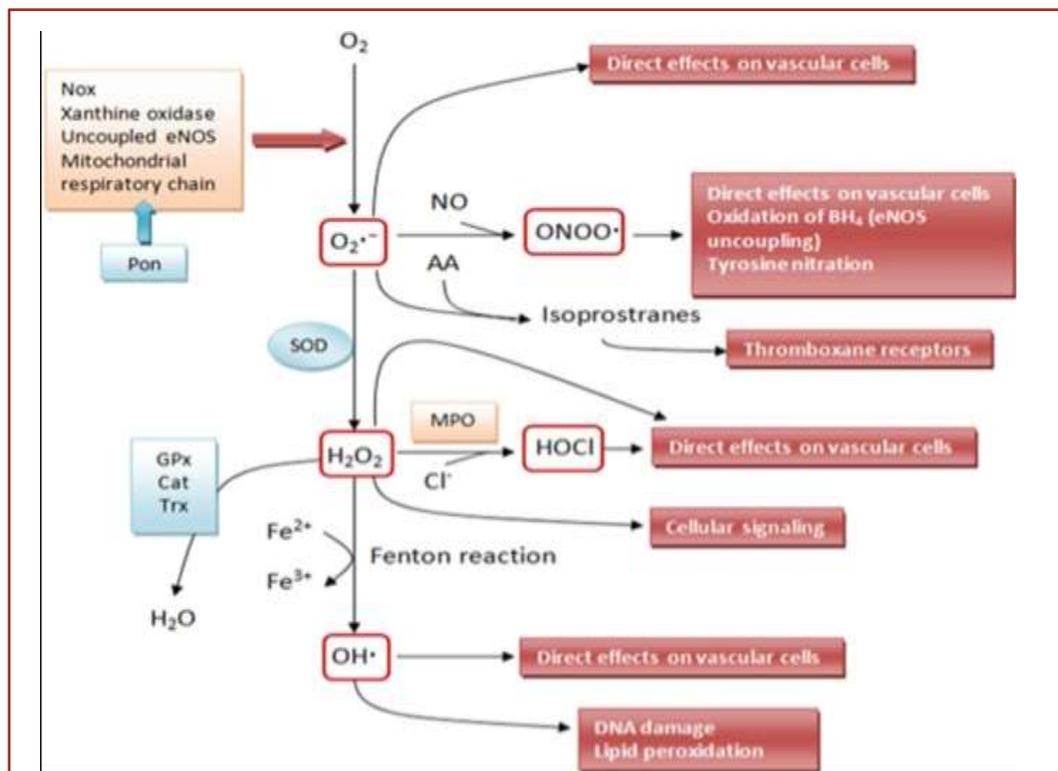
✓ Myeloperoxidase

✓ Lipoxygenases



Cellular activities which turns to Pathology.

ROS PATHOLOGY AS OXIDATIVE STRESS



The most damaging ROS are

- a) **hydroxyl radicals** : Causes lipid peroxidation, oxidize cholesterol, protein degradation.
- b) **Peroxy nitrite**: Causes impair vascular elasticity, Hardening the blood vessels and causing damages.

***Note:** A cell produces around 50 hydroxyl radicals every second. In a full day, each cell would generate 4 million hydroxyl radicals.*



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**REVIVIFY CONCEPT:
SUPEROXIDE DISMUTASE
SOLUBLE FIBER COMPOSITION**

Note: To be added Polyphenols to
strengthen more antioxidant, anti-
inflammatory and anti-infective
properties

How to Protect Cellular Integrity and Functions.

**Use of Superoxide Dismutase
(SOD) as an antioxidant defense**



**Combining Prebiotic Fiber to
integrate cellular function by the
gut microbes.**



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**SOD
BENEFITS**



Reducing Cellular Oxidative Stress Benefits

Revivify Gel reducing oxidative stress, coincide the review report below:

According to Review Report, the oxidative stress and its implications of pathology are listed below:

- Brain—Alzheimer, Parkinson, Stroke, Cognitive functions, Anxiety, Depression, Bipolar disorders, Trauma,
- Heart—Angina, Arrhythmia, Congestive heart failure, Fibrosis
-
- Blood Vessels—Vasospasm, Atherosclerosis, Deep Vein Thrombosis, Hypertension
- Lung—Asthma, COPD, Acute Respiratory disease, Hypoxia-induced complication, Hyperoxia.
- Gastrointestinal tract—IBS, Liver disease, Pancreatitis
- Immune system—Inflammation, Auto-immune Disorder, Lupus, MS
- Joint—Rheumatoid arthritis, Osteo-arthritis, Osteo-porosis
- Kidney—kidney disease, Glomerulopathy
- Eye—Macular degeneration, Retinal degeneration, Cataract genesis, Glaucoma
- Skin—Dermatitis, Psoriasis, Melanoma
- Multi-Organs—Aging, Diabetes, Obesity, Radiation, Chronic fatigue syndrome, injury, influenza
- Others—Fibromyalgia, Hyperthyroidism. Sleep apneas, Tinnitus:



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**TO RECONFIRM THE ANTIOXIDANT
SOD, SOD B MELON AND ITS
POTENTIAL AS HEALTH
BENEFITS, ANOTHER REVIEW
REPORTS IS ENLISTED BELOW:
ACCORDING TO ARTICLE REVIEW:**



**“Superoxide Dismutase
Administration- A Review
of Proposed Human Uses,
published in Molecules
2021, 26, 1844:**

<https://pubmed.ncbi.nlm.nih.gov/33805942/>

Reducing Cellular Oxidative Stress Benefits

▪ Suggested possible applications of SODs as a detoxification strategy [Table-1] and SOD as pharmaceutical agent –Potential application tested in animal model of human disease and clinical trials between 2021 and 2020 [Table-2]. It can be argued that the generic antioxidant effects of SOD SUPPLEMENTATION are beneficial in these conditions, from hypoxic damage and “cardiovascular disease to neurodegenerative disorders [Parkinson’s Disease, Alzheimer Disease, ALS] and metabolic diseases including diabetes and its complications and obesity. To summarize the application listed in Table-1 and Table-2 as follows:

▪ **Table-1 [with various SOD molecule preparations including SOD-B Melon]**

- Paracetamol hepatotoxicity *Carbon tetrachloride intoxication * Alcohol intoxication
- Methanol intoxication *UV-induced skin damage * UV-induced ocular pathology
- Radiotherapy-induced cytotoxic response *cisplatin-induced oral mucositis
- Cisplatin-induced nephrotoxicity *Bupivacaine-induce neurotoxicity
- 5-fluorouracil-induced intestinal mucositis

▪ **Table—2 [with various SOD molecule preparation including SOD-B Melon]**

- Neurological diseases * cardiovascular diseases * respiratory diseases
- Gastrointestinal disease * skin diseases *renal diseases
- Metabolic diseases *ocular diseases

▪ Review report emphasizes that” SOD B has been considered the GOLD STANDRAD for dietary supplementation since 2000”. To be advised that REVIVIFY GEL contains SOD B in formulation composition. Cantaloupe-melon- [Cucumis melo] derived SOD, SOD B offers advantage of high content of SOD 100 U/mg, also CAT 10 u/mg and GSH 1 U/mg]



**POSITIVE EFFECTS
OBSERVED AFTER
SOD'S
ADMINISTRATION IN
SEVERAL STUDIES**

<https://pubmed.ncbi.nlm.nih.gov/23793992/>

SOD Various Study

Pathological situations	References	Routes of administration and SOD nature	
Irradiation resistance and side effects	(14,15)	Intravenous injection of human Mn-SOD	
	(16)	Intratracheal injection of human Mn-SOD	
	(17)	Subcutaneous injection of bovine Cu/Zn-SOD	
	(18)	Oesophageal injection of human Mn-SOD	
	(19,22)	Oral administration of human Mn-SOD	
	(20)	Aerosolized bovine Cu/Zn-SOD	
	(21,23,27,29,31)	Intramuscular injection of bovine Cu/Zn-SOD	
	(24,26)	Intramural (bladder) injection of bovine Cu/Zn-SOD	
	(25)	Submucosal infiltration of bovine Cu/Zn-SOD	
	(28)	Incubation with bovine Cu/Zn-SOD	
	(29)	Intramuscular injection of bovine Mn-SOD	
	(30)	Topical application of green tomato Cu/Zn-SOD	
	Cell resistance	(33,36)	Oral administration of melon SODs (Cu/Zn, Mn and Fe)
		(37)	Injection of bovine Cu/Zn-SOD
Inflammatory diseases	(38)	Oral administration of bovine Cu/Zn-SOD	
	(39-41,51)	Intraperitoneal injection of different SODs of several sources	
	(42-50)	Intraarticular injection of bovine Cu/Zn-SOD	
	(52)	Intravenous injection of of bovine Cu/Zn-SOD	
	(53)	Subcutaneous injection of bovine Cu/Zn-SOD	
	(54)	Oral administration of Mn-SOD	
	(55)	Oral administration of melon SODs	
Carcinogenesis	(13)	Incubation with bovine Cu/Zn-SOD	
	(56)	Oral administration of melon SODs	
Infectious diseases	(57,59)	Intravenous injection of bovine Cu/Zn-SOD	
	(58,60)	Oral administration of melon SODs	
Nervous tissue and superior functions	(37)	Injection of bovine Cu/Zn-SOD	
	(61,62)	Oral administration of melon SODs	
	(62)	Oral administration of melon SODs	
Cardiovascular diseases	(63)	Injection of bovine Cu/Zn-SOD	
	(64)	Intravenous injection of human Cu/Zn-SOD	
	(65,67)	Aerosolized bovine Cu/Zn-SOD	
	(66,69,71,72)	Intravenous injection of bovine Cu/Zn-SOD	
Respiratory diseases	(68,70)	Aerosolized human Mn-SOD	
	(73)	Inhalation or intravenous injection of human Cu/Zn-SOD	
	(74)	Intratracheal injection of human Cu/Zn-SOD	
	(75)	Incubation with non-specified SOD	
	(76-79)	Local (penis) injection of bovine Cu/Zn-SOD	
Genitourinary disorders and male fertility			



SOD Various Study

Summary of Positive Effects Observed After SOD's Administration in Several Studies

***POSITIVE EFFECTS
OBSERVED AFTER
SOD'S
ADMINISTRATION IN
SEVERAL STUDIES***

<https://pubmed.ncbi.nlm.nih.gov/23793992/>

Pathological Situations	Routes of Administration And SOD Nature	Ref.
Irradiation Resistance and Side Effects	Intravenous injection of human Mn-SOD	14,15
	Intratarsal injection of human Mn-SOD	16
	Subcutaneous injection of bovine Cu/Zn-SOD	17
	Esophageal injection of human Mn-SOD	18
	Oral administration of human Mn-SOD	19,22
	Aerosolized Bovine Cu/Zn-SOD	20
	Intramuscular injection of bovine Cu/Zn-SOD	21,23,27, 29,31
	Intramural (bladder) injection of bovine Cu/Zn-SOD	24,26
	Submucosal infiltration of bovine Cu/Zn-SOD	25
	Incubation with bovine Cu/Zn-SOD	28
Cell Resistance	Intramuscular injection of bovine Mn-SOD	29
	Topical Application of green tomato Cu/Zn-SOD	30
	Oral Administration of melon SODs(Cu/Zn, Mn and Fe)	33,36
Carcinogenesis	Injection of bovine Cu/Zn-SOD	37
	Oral administration of melon SODs	55



SOD Various Study

Summary of Positive Effects Observed After SOD's Administration in Several Studies

***POSITIVE EFFECTS
OBSERVED AFTER
SOD'S
ADMINISTRATION IN
SEVERAL STUDIES***

<https://pubmed.ncbi.nlm.nih.gov/23793992/>

Pathological Situations	Routes of Administration And SOD Nature	Ref.
Inflammatory diseases	Oral administration of bovine Cu/Zn-SOD	38
	Intraperitoneal injection of different SODs of several sources	39-41, 51
	Intraarticular injection of bovine Cu/Zn-SOD	42-50
	Intravenous injection of bovine Cu/Zn-SOD	52
	Subcutaneous injection of bovine Cu/Zn-SOD	53
	Oral Administration of Mn-SOD	54
Infectious diseases	Incubation with bovine Cu/Zn-SOD	13
	Oral administration of melon SODs	56
Nervous tissue and superior functions	Intravenous injection of bovine Cu/Zn-sod	57, 59
	Oral administration of melon SODs	58, 60
Carbohydrate-lipid metabolism	Injection of bovine Cu/Zn-SOD	37
	Oral administration of melon SODs	61,62
Cardiovascular diseases	Oral administration of melon SODs	62
	Injection of bovine Cu/Zn-SOD	63
	Intravenous injection of human Cu/Zn-SOD	64





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SOD Various Study

Summary of Positive Effects Observed After SOD's Administration in Several Studies

**POSITIVE EFFECTS
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SOD'S
ADMINISTRATION IN
SEVERAL STUDIES**

<https://pubmed.ncbi.nlm.nih.gov/23793992/>

Pathological Situations	Routes of Administration And SOD Nature	Ref.
Respiratory Disease	Aerosolized bovine Cu/Zn-SOD	65, 67
	Intravenous injection of bovine Cu/Zn-SOD	66,69,71,72
Genitourinary disorders and male fertility	Aerosolized human Mn-SOD	65,67
	Inhalation or intravenous injection of human Cu/Zn-SOD	73
	Intratracheal injection of human Cu/Zn-SOD	74
	Incubation with non-specified SOD	75
	Local (penis) injection of bovine Cu/Zn SOD	76-79





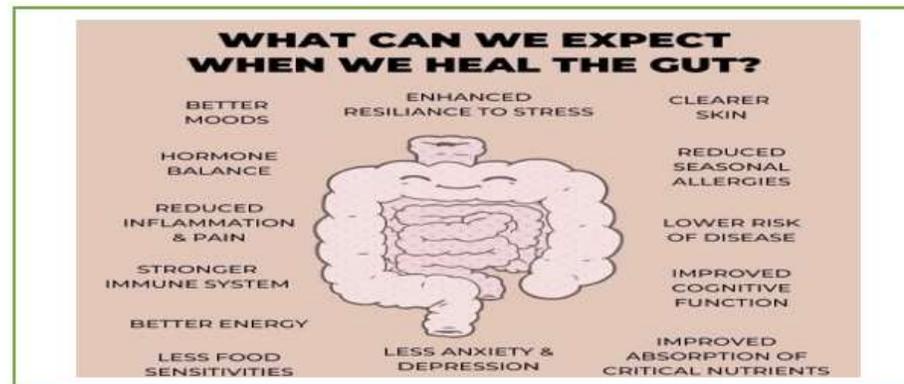
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Fiber (Prebiotic) and Gut Microbes interaction

FIBER (PREBIOTIC)

Prebiotics modulate beneficiary microbes such as lactobacillus and contribute to—Improved digestion, Stronger Immune System, Better Nutrient Absorption, and Protect from many health disorders. The gut-microbiome are associated with the following health conditions:

- Diabetes Type 2 and Obesity
- Insulin Resistance Syndrome
- Non-alcoholic Fatty Liver Disease
- Irritable Bowel Syndrome [IBS], Gastrointestinal disorders, Elimination of H-pylori, Inflammatory bowel disease [IBD]
- Atopic dermatitis
- Alleviation of lactose intolerance
- Neurological disorders



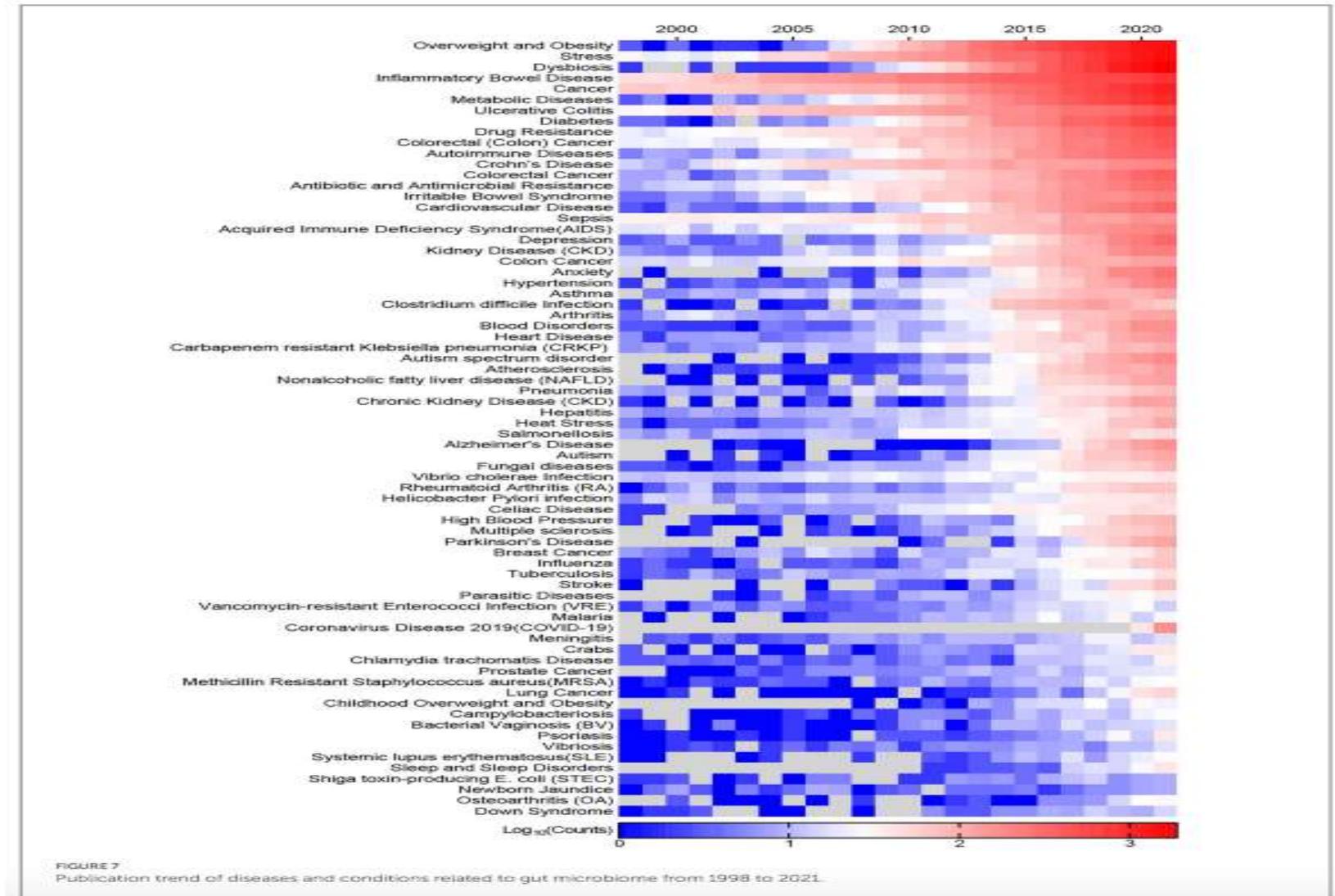
Imbalance of Gut Microbes and Diseases

THE GUT MICROBIOME IN HUMAN HEALTH AND DISEASE –

WHERE ARE WE AND WHERE ARE GOING?

A BIBLIOMETRIC ANALYSIS

<https://pubmed.ncbi.nlm.nih.gov/36590421/>



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PRE-BIOTIC
FIBER
(FIBERSOL-2)

Fiber (Prebiotic) Fermentation

*Production of Short Chain
Fatty Acids*

*Production of Soluble B
Vitamins*

Production of Anti-
Caogulent

*Enhance Calcium
Absorption*



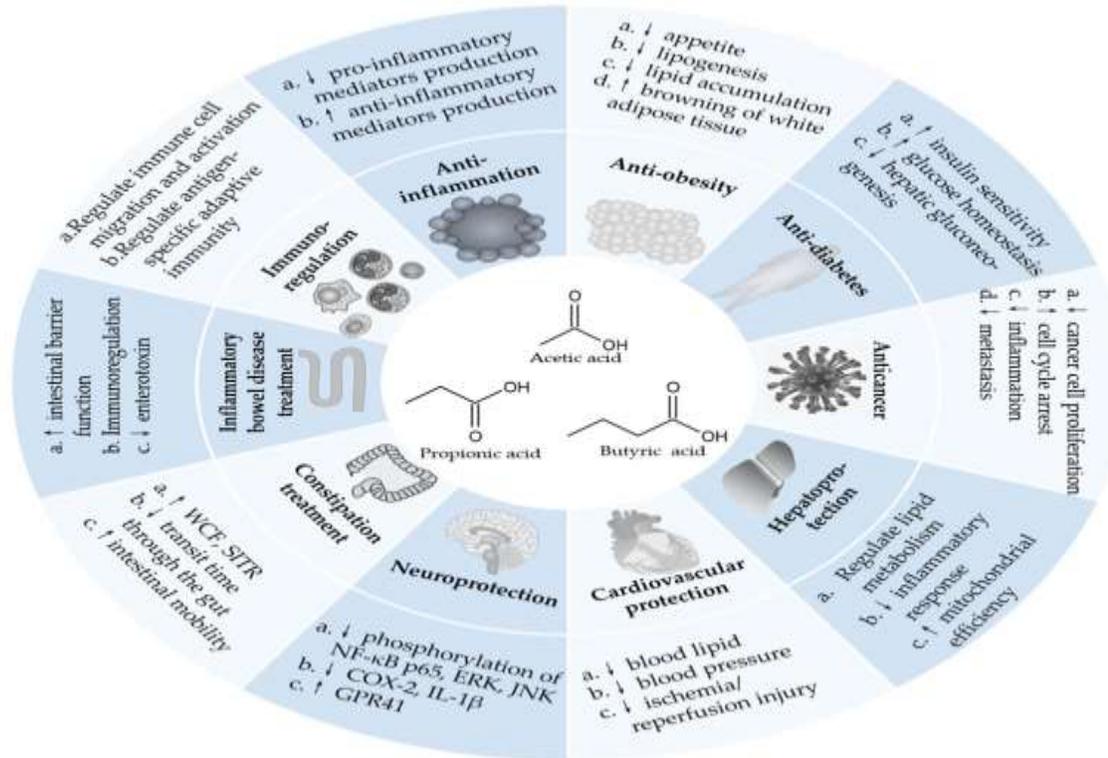
Production of Short Chain Fatty Acids & Positive Effects

➤ Health Benefits and Side Effects of Short-Chain Fatty Acids

<https://pmc.ncbi.nlm.nih.gov/articles/PMC9498509/pdf/foods-11-02863.pdf>

➤ Role of prebiotics, probiotics, and synbiotics in management of inflammatory bowel disease: Current perspectives

<https://pmc.ncbi.nlm.nih.gov/articles/PMC10130969/pdf/WJG-29-2078.pdf>



In Summary, SCFAs exhibit good anti-inflammatory activity and the main mechanism of action including inhibiting the production of pro-inflammatory mediators such as; IL-6 and TNF-a, as well as enhancing production of anti-inflammatory mediators such as; IL-10; TGF-B.



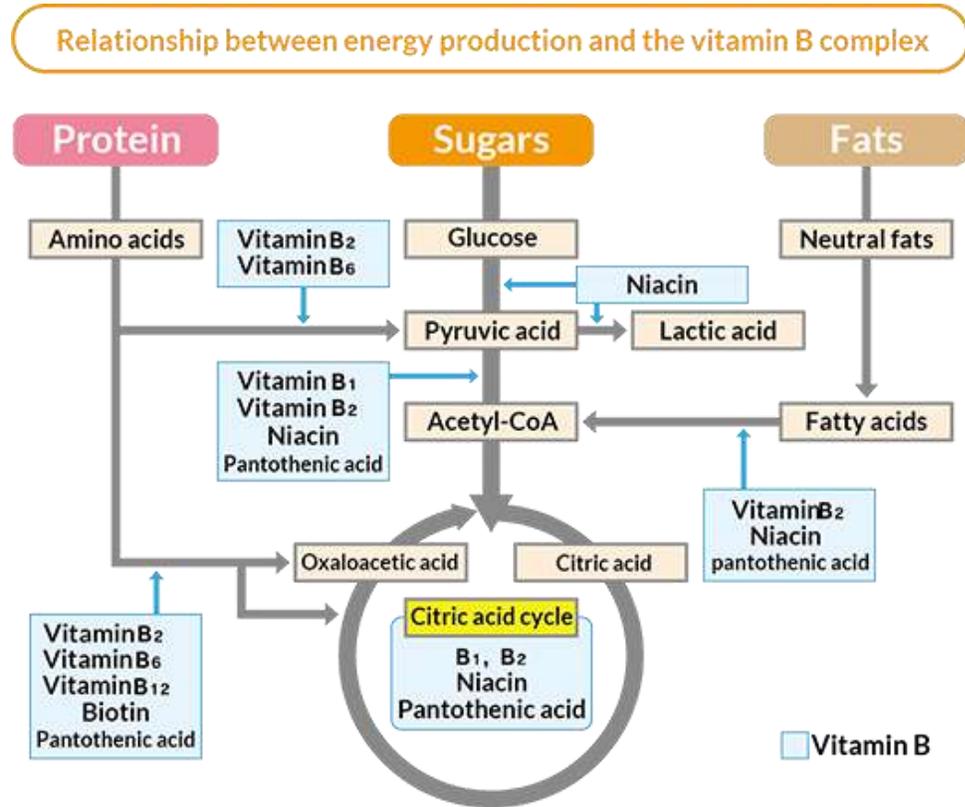
Production of Soluble B Vitamins , Anticoagulant Vitamin K1 and enhanced Calcium Absorption

➤ PROMOTIVE EFFECTS IF RESISTANT MALTODEXTRIN ON APPARENT ABSORPTION OF CALCIUM, MAGNESIUM, IRON AND ZINC IN RATS

[HTTPTS://PMC.NCBI.NLM.NIH.GOV/ARTICLES/PMC2839484/PDF/394_2009_ARTICLE_62.PDF](https://pubmed.ncbi.nlm.nih.gov/articles/PMC2839484/pdf/394_2009_article_62.pdf)

➤ DIETARY BERS BOOST GUT MICROBIOME
OPEN ACCESS
MICROBIOTA-PRODUCED B VITAMIN POOL AND ALTER HOST IMMUNE LANDSCAPE

[HTTPTS://MICROBIOMEJOURNAL.BIOME DCENTRAL.COM/COUNTER/PDF/10.1186/S40168-024-01898-7.PDF](https://microbiomejournal.biomedcentral.com/counter/pdf/10.1186/s40168-024-01898-7.pdf)





Polyphenols Additional Benefits

POLYPHENOLS

Antioxidants



Anti-Inflammatory



*Anti-Infective
(Virus/Bacteria)*



Immunity

Studies for Antioxidant Bio Marker, Anti-Inflammatory Bio Markers, Anti Infective Bio Markers are given below



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Source of Polyphenols & Additional Benefits

POLYPHENOLS

1.1

Pomegranate Juice Concentrate



The benefit was observed without change in cardiac medications, blood sugar, hemoglobin A1c, weight and blood pressure. The consumption of PMJ may improve stress-induced myocardial ischemia in patients who have coronary heart disease [CHD]

Ref---Am J Cardiol. 2005 Sept 15, 96(6). 810-4.

Study demonstrate that dietary supplementation of poly-phenol rich PMJ to atherosclerotic mice significantly inhibited the development of atherosclerotic lesions and this may be attributed to the protection of LDL against oxidation.

Ref---Drug Exp Clin Res. 2002; 28(2-3). 49-62.



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POLYPHENOLS

2.0

Concord Grape Juice Concentrate



Source of Polyphenols & Additional Benefits

A significant improvement in immediate spatial memory and driving performance were observed after CGJ relative to placebo.

Ref---Am J Clin Nutr 2016: 103, 775-83.

- ***Significantly increased HDL- the good cholesterol---and significantly lowered two markers of inflammation in people with stable coronary artery disease. “in addition to HDL increasing, we saw significant decrease in the production of superoxide, a free radical, and soluble CD40 ligand, an inflammatory marker about which there is growing interest,” explain Jane E. Freedman, M.D., Associate Professor of Medicine and Pharmacology, Boston University School of Medicine and an author of the study.***
- *Ref---16 Nov 2004 Jr Arteriosclerosis, Thrombosis and Vascular Biology.*



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Source of Polyphenols & Additional Benefits

POLYPHENOLS

2.1 Concord Grape Juice Concentrate



Study found that memory function was improved with grape juice consumption by older adults with early memory decline.

Ref---published online by Cambridge University press 23 December 2009.

Participants who consumed grape juice showed reduced semantic interference on memory tasks. Relatively greater activation in anterior and poster regions of the right hemisphere was also observed with functional magnetic resonance imaging. These findings provide further evidence that Concord grape juice can enhance neurocognitive function in older adults with mild memory decline.

Ref---J Agric Food Chem 2021 Jun 13, 60(23): 5736-42.



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Source of Polyphenols & Additional Benefits

POLYPHENOLS

3.0 Blueberry Juice Concentrate



Study shows the decrease in plasma oxidized LDL and may improve selected feature of metabolic syndrome and related cardiovascular risk factors. Metabolic syndrome has been characterized by abdominal adiposity, dyslipidemia [high triglyceride, low HDL cholesterol], hypertension, impaired glucose tolerance, elevated oxidative stress, inflammation, and increased risk for type 2 diabetes and atherosclerotic cardiovascular disease [CVD]

Ref:[J. Nutr. 140: 1582-1587, 2010]

Blueberries have been used as traditional anti-diabetic medicine for many years. The lipid lowering effect of blueberries reduce the

Ref: [Silakorn U Science & Tech J 3(2): 7-17, 2009]



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Source of Polyphenols & Additional Benefits

POLYPHENOLS

3.1 Blueberry Juice Concentrate



- *A study conducted with young and adult participant's consumption of blueberries increased blood flow to key areas to brain, improved memory, where vascular dementia is caused by clogged arteries and veins which slow down the blood flow to the brain.*
- *Ref--- Rutgers, New Jersey Agriculture Experiment Station, June 2017.*
- *An increasing body of evidence suggests that blueberries and anthocyanins reduce biomarkers and risk of diseases that constitute major socio economic burdens, including cardiovascular disease [CVD], type-2 diabetes mellitus [T2DM], and neurological decline.*
- *Ref---Adv Nutr 2020; 11, 224-236.*



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Source of Polyphenols & Additional Benefits

POLYPHENOLS

4.0 Sweet & Tart Cherry Juice Concentrate



- ***Studies suggest that consumption of cherry juice concentrate for a period of 4 months or longer, reduces acute gout flare, via anti-inflammatory actions such as inhibition of IL-1 β . It is observed cherry juice concentrate to inhibit in-vitro secretion of IL-1 β by up to 60%.***
- *Ref---Journal of Arthritis 2012, vol 1, issue*
- ***Daily consumption of tart cherries may attenuate inflammatory and oxidative responses to Exercise-induced muscle damage, leading to faster recovery after exercise bouts.***
- *Ref---Nutr Hosp. 2015 , Nov 1, 32(5): 1885-93.*



Source of Polyphenols & Additional Benefits

POLYPHENOLS

4.2 Sweet & Tart Cherry Juice Concentrate



- **Consumption of cherries decreased markers for oxidative stress in 8 out of 10 studies; ---inflammations in 11 out of 16 studies; -----exercise-induced muscle soreness and loss of strength in 8 out of 9 studies; ---blood pressure in 5 out of 7 studies;----- arthritis in 5 out of 5 studies;-----improved sleep in 4 out of 4 studies. Cherries also decreased hemoglobin A1C, very low density lipoprotein.**
- *Ref—Nutrients 2018, 10, 368.*
- **Researcher findings suggests that regular tart cherry juice consumption helps to reduce CVD risk factors in older adults by reducing systolic BP and LDL cholesterol. The BP and LDL lowering effect of tart cherry juice may be through its antioxidative and anti-inflammatory properties.**
- *Ref—Nutrients 2019, 11, 228*



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Source of Polyphenols & Additional Benefits

POLYPHENOLS

4.2 Sweet & Tart Cherry Juice Concentrate



- **Consumption of cherries decreased markers for oxidative stress in 8 out of 10 studies; ---inflammations in 11 out of 16 studies; -----exercise-induced muscle soreness and loss of strength in 8 out of 9 studies; ---blood pressure in 5 out of 7 studies;----- arthritis in 5 out of 5 studies;-----improved sleep in 4 out of 4 studies. Cherries also decreased hemoglobin A1C, very low density lipoprotein.**
- *Ref—Nutrients 2018, 10, 368.*
- **Researcher findings suggests that regular tart cherry juice consumption helps to reduce CVD risk factors in older adults by reducing systolic BP and LDL cholesterol. The BP and LDL lowering effect of tart cherry juice may be through its antioxidative and anti-inflammatory properties.**
- *Ref—Nutrients 2019, 11, 228*



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Source of Polyphenols & Additional Benefits

POLYPHENOLS

4.3

Sweet & Tart Cherry Juice Concentrate

- ***Tart cherry concentrate has a significant benefit for endurance exercise performance.***

Ref: Effect of Tart Cherry Concentrate on Endurance Exercise Performance: a meta analysis; Ref---
Journal of American College of Nutrition published on line 27 Jan 2020.

- ***Daily consumption of tart cherries may attenuate inflammatory and oxidative responses to Exercise-induced muscle damage, leading to faster recovery after exercise bouts.***

Ref: Consumption of tart cherries as a strategy to attenuate exercise-induced muscle damage and inflammation in humans. Ref---*Nutr Hosp.* 2015 , Nov 1, 32(5): 1885-93.





Source of Polyphenols & Additional Benefits

POLYPHENOLS

5. Goji Berrie



- ***Goji berries have been shown to exhibit macular benefits in a randomized clinical study of healthy elderly participants by increased plasma antioxidant and zeaxanthin levels. The protective characteristic of goji berry extracts on retina cells have been shown in the early stage of the retina degeneration in both human and animal studies.***

Ref: Goji berry effects on macular characteristics and plasma antioxidant levels: Ref--- *Optometry and Vision Science*, vol 88, no 2, pp 257-262, 2011.

- ***The results indicate daily consumption of goji berry increases subjective feelings of general well-being and improves neurological/psychologic performance, and increases the energy levels.***

Ref: A randomized, double-blind, placebo controlled, clinical study of the general effects of goji berry: Ref--- *J Altern Complement Med*, 2008 May; 14(4), 403-12.





Source of Polyphenols & Additional Benefits

POLYPHENOLS

5.1 Goji Berrie



- *Goji berries have been shown to have a hypoglycemic effect in cell and animal studies.*

Ref: Lycium barbarum and human health---editors Raymond Chuen-Chung Chang, Laboratory of Neurodegenerative Diseases, Dept of Anatomy, LKS Faculty of Medicine the university of Hong Kong.

- *Goji berry excellent beneficial effects as skin care and wound healing.*

Ref: A review of Three Ancient Chinese Herbs, Goji Berry, Ginger and Ginseng in pharmacological and modern science.





Source of Polyphenols & Additional Benefits

POLYPHENOLS

6.0 Acai Berrie



- ***The results showed that acai extract can potentially increase protein amount and enzyme activity of mitochondrial complex 1 and benefiting patient with mitochondrial dysfunction. Current research has demonstrated that Bipolar Disorder is associated with mitochondrial complex 1 deficiency causing decrease of ATP production and increase of ROS level.***

Ref: Neuroprotective effects of Acai against Rotenone in vitro exposure: Ref--- *Oxid Med Cell Longev*, 2016, Oct 3.

- ***There are several diseases, such as bipolar disorder, for example, where a chronic inflammation related to NLRP3 inflammasome is present. Acai extract decreased NLRP3 inflammasome levels and reduced pro-inflammatory cytokines.***

Ref: Acai has anti-inflammatory potential through NLRP-3- inflammasome modulation. Ref---*Journal of Functional Foods*, vol 56, May 2019, pp-364-371.



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POLYPHENOLS

7.0 Aloe Vera



Source of Polyphenols & Additional Benefits

- ***Skin lesions are caused due to different reasons such as burns, arterial disease, surgery, and trauma. Wound healing is a dynamic process that takes place in 3 phases. The 1st phase is inflammation, congestion, and leukocyte infiltration. The 2nd phase involves removal of dead tissue and the 3rd phase of proliferation includes epithelial regeneration and fibrous tissue formation. Several studies on Aloe Vera have been conducted and shown to be effective in the prevention and healing of skin wounds.***

Ref: The effect of Aloe Vera Clinical Trials on prevention and healing of skin wounds—a systemic review; *Ref---Iran J Med Sci . Jan 2019, vol 44, no 1.*

- ***Meta-analysis showed that Aloe Vera possibly improved glycemic control in prediabetes and type-2 diabetes.***

Effect of Aloe Vera on glycaemic control in pre-diabetes and type-2 diabetes: a systemicreview and meta anylysis: *Ref---J Clin pharmacy and Therapeutics/vol 41, issue 2/ p 180-188.*



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POLYPHENOLS

7.1 Aloe Vera



Source of Polyphenols & Additional Benefits

- ***Study showed Aloe Vera mediated strong reduction of IL-1 β appears to be the consequence of reduced expression of both pro-IL-1 β , as well as NLRP3 inflammasome components.***

Ref: Aloe Vera down regulate LPS-induced inflammatory cytokine production and expression of NLRP3 inflammasome in human macrophages: *Ref---Molecular immunology, vol 56, issue 4, 31 Dec 2013, pp-471-479*

- ***Study showed Aloe Vera gel has antioxidant properties and inhibitory effects on colorectal prostaglandin E2 and IL-8 production.***

Anti-inflammatory effects of Aloe vera gel in human colorectal mucosa in vitro: *Ref---Alimentary Pharmacology & Therapeutics/ vol 19, issue 5/ p 521-527. 17Feb 2004*

- ***In-vitro study showed bacterial induced cytokines such as TNF- α and IL-1 β is suppressed.***

The inner gel component of Aloe Vera suppresses bacterial induced pro-inflammatory cytokines from human immune cell: *Ref-----Methods vol 42, issue 4, August 2007, 388-393.*



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POLYPHENOLS

8.0 Green Tea Extract



- **Evidence suggests green tea catchiness on joint health by downregulating inflammatory signaling mediators, upregulating metabolic mediators, and cartilage production. On skeletal muscle health –maintain a dynamic balance between protein synthesis and degradation and boosting the mitochondrial energy metabolism, resulting in favorable muscle homeostasis and mitigation of muscle atrophy with aging.**

Ref: Impact of Green Tea on Joint and Skeletal Muscle Health: *Ref—Antioxidant 2020, 9, 1050:*

- **Green tea extract supplementation did not reduce the sensation of delayed onset muscle soreness but reduces the marker of muscle damage after exercise. It suggests green tea extract supplementation has positive effects on muscle recovery after strenuous exercise.**

Ref: Effect of green tea extract supplementation on exercise-induced delayed onset soreness and muscle damage: *Ref---Physiol Behav; 2018 Oct 1, 194; 77-82.*



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8.1 Green Tea Extract



- ***Findings provide evidence for putative effect of green tea on cognitive functioning.***

Ref: Green Tea Extract enhances parieto-frontal connectivity during working memory processing: Ref—*Psychopharmacology (2014)231: 3879-3888.*

- ***EGCG is known for its antioxidant, anti-inflammatory, anti-viral, and anti-carcinogenic properties. EGCG significantly inhibited proliferation, vascular permeability, and tube formation in VEGF induced human retinal microvascular endothelial cells. EGCG significantly reduced vascular leakage and permeability by blood brain barrier breakdown in VEGF-induced animal models.***

Ref: Epigallocatechin-3-galate [EGCG] Inhibits Ocular Neovascularization and Vascular Permeability in Human Retinal Pigment Epithelial and Human Retinal Microvascular Endothelial Cells via Suoression of MMP-9 and VEGF activation: Ref---*Molecule 2014, 19, 12150-12172.*



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8.2 Green Tea Extract



- *Over 50 molecular docking studies found components Green Tea Extract [GTE] to be effective as inhibitors of SARS-CoV-2 viral components, including the spike protein, both proteases, replicas, and others.*

Ref: **COVID 19 and Green Tea Extract:** Ref----Covid.US.Org, September 30, 2020



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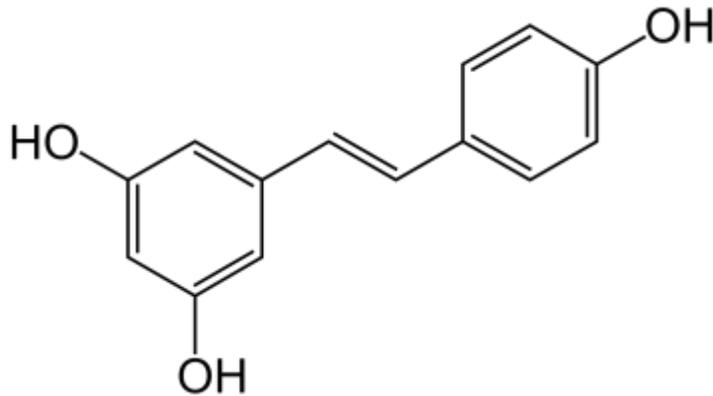
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POLYPHENOLS

9.0 Resveratrol



- ***Study report of resveratrol significantly decreased the expression of ACE-2 and leptin with obesity. Lower expression of ACE-2 receptors may reduce the entry of COVID19 virus.***

Ref: 1 Resveratrol supplementation reduces ACE-2 expression in human adipose tissue: Ref---Adipocyte, August 3 2021, vol 10, no 1, 408-411.

Resveratrol showed very effective in scavenging hydroxyl radicals as well as superoxide radical, which reduces lipid peroxidation, inhibit DNA damage.

- Ref: Resveratrol scavenges reactive oxygen species and effects radical-induced cellular response: Ref—Biochemical and Biophysical Research Communications 309(2003) 1017-1026.



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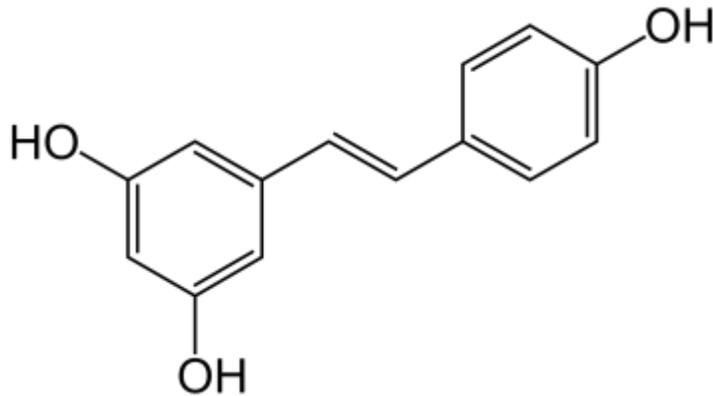
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POLYPHENOLS

9.1 Resveratrol



- ***Study showed inhibition of platelet function and of endothelial tissue factors, thus may decrease blood coagulation and thrombus formation, beneficiary effect to cardiac health.***

Ref: Cardiovascular Protective Effects of Resveratrol: Ref---Cardiovascular Drug Reviews, Vol 22, no3, pp 169-188.

- ***Aβ peptide accumulation leads to the progressive loss of neurons, interdict of neural circuits and neurological decline. Resveratrol promotes the intracellular clearance of Aβ peptide, may benefit AD patients.***

- Ref: Resveratrol as a Therapeutic Agent for Alzheimer's Disease: Ref---BioMed Research Int, vol 2014, article Id 350516, page 13.



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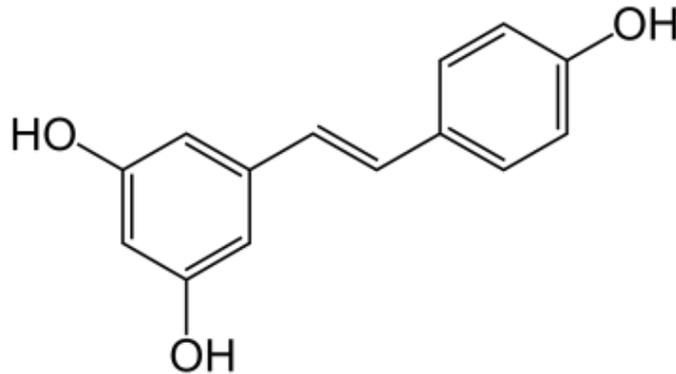
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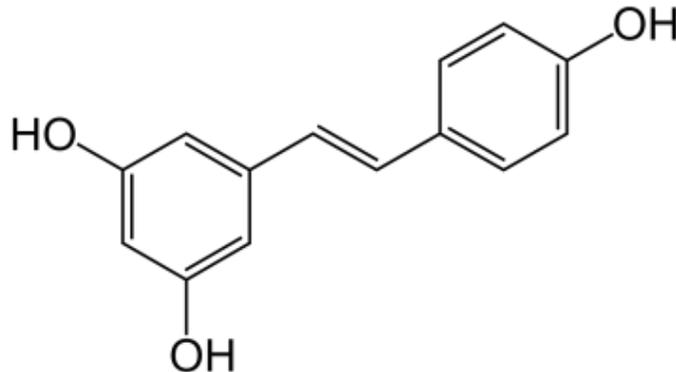
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POLYPHENOLS

9.3 Resveratrol



- **Multiple studies showed resveratrol has beneficial effects on neurological, hepatic, and cardiovascular system which reduces age related dysfunctions.**
 - Ref: Resveratrol as an anti-inflammatory and anti-aging agent—mechanism and clinical implications: *Ref---Mol Nutr Food Res: 2005 May; 49(5), 405-30.*
- **SIRI [Silent information regulator 1] protein plays important role in many aging related biological process such as growth regulation, energy metabolism, stress response, and endocrine signaling.**
- Ref: Resveratrol serve as a protein-substrate interaction stabilizer in human SIRT1 activation: *Ref—Science Reports, Vol 6, no 1, p381-86, 2016.*

