

“...the most extraordinary therapeutic and most extraordinary preventive **breakthrough in the history of medicine.**”

-Washington State University, January 2015.



PEER REVIEWED STUDIES

Go to www.pubmed.gov

Search: *Oxidative Stress*

Search: *Nrf2*

Search: *Protandim*[®]

You will find over 152,000 search results on oxidative stress.

PUB MED PEER-REVIEWED STUDIES

RESEARCH IDENTIFIES KEY GENETIC LINK IN THE BIOLOGY OF AGING Oregon State University - December 2015

- Scientists have tracked the syndromes associated with aging to their biochemical roots, and have identified a breakdown in genetic communication as part of the problem. "Nrf2 signaling" breaks down with age.
- **Nrf2** essentially goes back to the cellular nucleus and rings the alarm bell, where it can "turn on" up to 200 genes which are responsible for cell repair, the detoxification of carcinogens, protein and lipid metabolism, antioxidant protection and other actions. In their report, the scientists called it a "longevity-assurance factor."

PUB MED PEER-REVIEWED STUDIES

RESEARCH IDENTIFIES KEY GENETIC LINK IN THE BIOLOGY OF AGING Oregon State University - December 2015

- Micro-RNAs have been one of the most profound scientific discoveries of the past 20 years. They were once thought to be “**Junk DNA**” because researchers could see them but they had no apparent biological role.
- They are now understood to be **anything but junk** – they help play a major role in **genetic signaling**, controlling what **genes** are **expressed, or turned on and off**, to perform their function.

PUB MED PEER-REVIEWED STUDIES

RESEARCH IDENTIFIES KEY GENETIC LINK IN THE BIOLOGY OF AGING Oregon State University - December 2015

- In humans, **miRNA-146a** plays a significant role. It can **turn on the inflammation processes** that, in a wound, helps prevent infection and begins the healing process.
- But with age, **Nrf2 Signaling** breaks down, which causes the **miRNA-146a expression to not shut down properly**, and this is the root cause of **Chronic Inflammation**.

PUB MED PEER-REVIEWED STUDIES

NRF2, A MASTER REGULATOR OF DETOXIFICATION AND ALSO ANTIOXIDANT, ANTIINFLAMMATORY AND OTHER CYTOPROTECTIVE MECHANISMS, IS RAISED BY HEALTH PROMOTING FACTORS -

Washington State University - February 2015

- **“Raising Nrf2”** has been found to **“Prevent “** and/or **“Treat”** a large number of **“Chronic Inflammatory Diseases”** in animal models and/or humans including various:
- Cardiovascular diseases, kidney diseases, lung diseases, diseases of toxic liver damage, cancer (prevention), diabetes/metabolic syndrome/obesity, sepsis, autoimmune diseases, inflammatory bowel disease, HIV/AIDS and epilepsy.”

PUB MED PEER-REVIEWED STUDIES

SYNERGISTIC INDUCTION OF HEME OXYGENASE-1

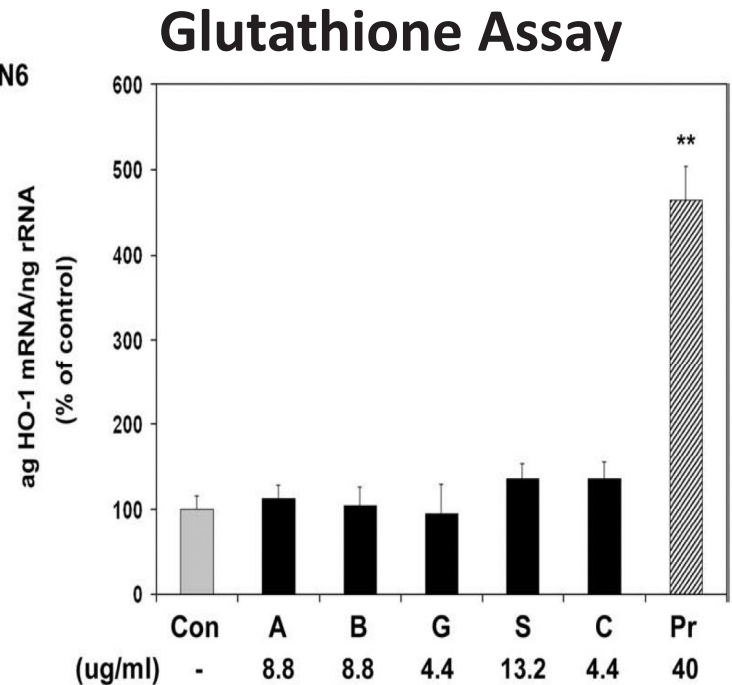
BY THE COMPONENTS OF THE ANTIOXIDANT SUPPLEMENT PROTANDIM

Division of Endocrinology, Department of Medicine, University of Colorado - July 2008

Oxidative stress plays a significant role in the progression of many diseases, including **Diabetes, Alzheimer Disease, and Atherosclerosis.**

It is the ratio of the herbs in **Protandim** that turns on the **Nrf2 Signaling**, which then tells the genes to turn on the production of **Glutathione**, the protection **antioxidant enzyme** which shields the body from free radical damage which causes **oxidative stress.**

A: MIN6



LifeVantage.

PUB MED PEER-REVIEWED STUDIES

OXIDATIVE STRESS IN HEALTH AND DISEASE: THE THERAPEUTIC POTENTIAL OF NRF2 ACTIVATION - DEPARTMENT OF MEDICINE, DIVISION OF PULMONARY SCIENCE AND CRITICAL CARE MEDICINE.
University of Colorado - April 2009

- **Protandim** positively modulates pathways
- These include not only **antioxidant enzymes**, but of those related to **colon cancer, cardiovascular disease, and Alzheimer disease**.

PUB MED PEER-REVIEWED STUDIES

NEW PEER-REVIEWED STUDY CONCLUDES THAT PROTANDIM® IMPROVES MARKERS OF OXIDATIVE STRESS AND FIBROSIS IN MUSCULAR DYSTROPHY MICE

Harvard Medical School - June 2010

- **Protandim®** decreases **osteopontin** and Improves Markers of **Oxidative Stress** in Muscular Dystrophy.
- A documented **48%** decrease oxidative stress.
- A **57%** decrease in osteopontin, A scaring factor linked to heart failure.
- A **35%** increase in beneficial protective cell antioxidants



PUB MED PEER-REVIEWED STUDIES

AMERICAN HEART ASSOCIATION JOURNAL, CIRCULATION, PUBLISHES
NEW PEER- REVIEWED STUDY INVOLVING PROTANDIM®
October 2011

- **Protandim** also prevented the death of heart cells and significantly **lowered osteopontin (OPN-1)** levels by more than **50%**.
- **Osteopontin** is a factor that leads to **scar tissue** formation, a cause of **heart failure**.
- The researchers in this study described the ability of **Protandim** to effectively activate **Nrf2**, a signal to the cell's DNA to **increase** the production of **antioxidant, anti-inflammatory, and anti-fibrotic** genes.

PUB MED PEER-REVIEWED STUDIES

PROTANDIM, A FUNDAMENTALLY NEW ANTIOXIDANT APPROACH IN CHEMOPREVENTION USING MOUSE TWO-STAGE SKIN CARCINOGENESIS AS A MODEL

Department of Pharmacology, Toxicology & Neuroscience, Louisiana
State University - October 2011

- At the end of the Carcinogenesis Study, it was found, Mice on **Protandim** versus Mice on a basal diet had:
- A reduction in **Skin Tumor incidence** of **33%**
- A reduction in **Skin Tumor multiplicity** of **57%**

PUB MED PEER-REVIEWED STUDIES

ALS UNTANGLED NO. 31: PROTANDIM®
THE ALS ASSOCIATION AND THE
MOTOR NEURONE DISEASE ASSOCIATION
September 2015

- **Protandim** appears reasonably safe and inexpensive. It has a promising mechanism by which it could **help ALS**.
- Where there is a patient with a validated **ALS diagnosis**, their **ALSFRS-R** score **improved** on **Protandim**.