“...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.
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.”
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.
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.
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.”
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.
• **Protandim** positively modulates pathways

• These include not only *antioxidant enzymes*, but of those related to *colon cancer, cardiovascular disease*, and *Alzheimer disease.*
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
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.
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%
• 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.