27 Peer Reviewed Articles Referencing Protandim Nrf2 – July 7 2018

Human studies (5)

1. Nelson (2006)—Healthy humans (120 days)
   - Nelson, S. K., et al. (2006). "The induction of human superoxide dismutase and catalase in vivo: a fundamentally new approach to antioxidant therapy." Free Radic Biol Med **40**(2): 341-347.
   - ***University of Colorado****; Webb-Waring Institute for Cancer, Aging and Antioxidant Research, Department of Medicine, Department of Preventive medicine*

2. Burnham (2012)—Humans with alcohol use disorders (1 week)
   - Burnham, E. L., et al. (2012). "Protandim does not influence alveolar epithelial permeability or intrapulmonary oxidative stress in human subjects with alcohol use disorders." Am J Physiol Lung Cell Mol Physiol **302**(7): L688-699.
   - ***University of Colorado;*** *School of Medicine Division of Pulmonary Sciences and Critical Care Medicine, and Department of Psychiatry*
     Emory University School of Medicine*; Department of Pediatrics, Atlanta, Georgia*

3. Scalzo (2014)—Healthy Overweight humans & JP Protandim (30 days)
   - Scalzo, R. L., et al. (2014). Oxidative stress is decreased with short term Protandim use when piperine is substituted for ashwagandha. Experimental Biology, San Diego.
   - ***Colorado State University;*** *Department of Health and Exercise Science*

4. Ueberschlag (2016) – Runners (90 days)
   - Ueberschlag, S. L., et al. (2016). The effect of Protandim supplementation on athletic performance and oxidative blood markers in runners. PLoS One DOI:10.1371: 1-26
   - ***University of Louisville;*** *Department of Health and Sport Sciences, Department of Medicine*
     University of Kentucky; *Department of Clinical Sciences*
     Case Western Reserve University*; Department of Medicine, Cleveland, OH*
     Saint Louis University*; Department of Nutrition and Dietetics, Saint Louis, MO*
     Georgia State University*; Department of Respiratory Therapy, Atlanta, GA*

5. Konopka (2017) Influence of Nrf2 activators on subcellular skeletal muscle protein
   - Konopka, A. R., et al. (2017). "Influence of Nrf2 activators on subcellular skeletal muscle protein and DNA synthesis rates after 6 weeks of milk protein feeding in older adults." Geroscience.
   - ***Colorado State University****; Department of Health and Exercise Science*

Laboratory studies (16)

1. Velmurugan (2009)—Mice MIN6 pancreatic beta-cells
   - Velmurugan, K., et al. (2009). "Synergistic induction of heme oxygenase-1 by the components of the antioxidant supplement Protandim." Free Radic Biol Med **46**(3): 430-440.
   - ***University of Colorado Denver;*** *Division of Endocrinology, Division of Pulmonary Sciences, Department of Medicine*
     Veterans Affairs Medical Center*; Section of Endocrinology, Denver, CO*
     Ochsner Medical Center; *Department of Molecular Genetics, New Orleans, LA*

2. Liu (2009)—Mice with skin cancer
   - Liu, J., et al. (2009). "Protandim, a fundamentally new antioxidant approach in chemoprevention using mouse two-stage skin carcinogenesis as a model." PLoS One **4**(4): e5284.
   - ***Louisiana State University Health Sciences Center****; Department of Pharmacology, Toxicology & Neuroscience, Department of Pathology, Department of Neurosurgery, Feist-Weiller Cancer Center, Shreveport, Louisiana*
     University of Colorado Health Sciences Center*; Department of Medicine, Denver, Colorado*

3. Bogaard (2009)—Rats heart muscles cells
   - Bogaard, H. J., et al. (2009). "Chronic pulmonary artery pressure elevation is insufficient to explain right heart failure." Circulation **120**(20): 1951-1960.
   - ***Virginia Commonwealth University****; Divisions of Pulmonary, Critical Care and Cardiology, Department of Medicine, and Department of Anatomy and Neurobiology, Richmond*
     VU University Medical Center*; Department of Pulmonary Medicine, Amsterdam, the Netherlands*
     University of Colorado at Denver and Health Sciences Center; *Divisions of Cardiology and Pulmonary Sciences, Department of Medicine.*

4. Robbins (2010)—Mice with skin cancer
    - Robbins, D., et al. (2010). The chemopreventive effects of Protandim: Modulation of p53 mitochondrial translocation and apoptosis during skin carcinogenesis. PLoS One **5**(7): e11902.
    - ***Louisiana State University Health Sciences Center**, Department of Pharmacology, Toxicology and Neuroscience, Feist-Weiller Cancer Center, Department of Pathology, Shreveport, Louisiana*
      ***Jilin University;** College of Life Science, Changchun, Jilin Province, China*
      ***Nicholls State University;** Department of Chemistry, Thibodaux, Louisiana*
      ***University of Colorado at Denver and Health Sciences Center**; Department of Medicine**,** Aurora, Colorado*

5. Qureshi (2010)—Mice with muscular dystrophy
    - Qureshi, M. M., et al. (2010). "The Dietary Supplement Protandim Decreases Plasma Osteopontin and Improves Markers of Oxidative Stress in Muscular Dystrophy Mdx Mice." J Diet Suppl **7**(2): 159-178.
    - ***Texas Tech University Health Sciences Center**; Department of Pediatrics*
      ***University of Colorado Denver Health Sciences Center**; Department of Math and Science, Otero Junior College; Department of Cell and Developmental Biology, Department of Medicine, Aurora, CA*
      ***Harvard Medical School**; Department of Neurology, Division of Child Neurology, Massachusetts General Hospital, Boston, MA*

6. Joddar (2011)—Human saphenous veins.
    - Joddar, B., et al. (2011) Protandim attenuates intimal hyperplasia in human saphenous veins cultured ex vivo via a catalase-dependent pathway. Free Radic Biol Med **50**(2011): 700-709.
    - ***The Ohio State University;** Department of Biomedical Engineering, Davis Heart & Lung Research Institute, Department of Surgery, Department of Cardiothoracic Surgery, Columbus, OH*
      ***RIKEN Nanomedical Engineering Laboratory**, Wako-shi, Saitama, Japan*
      ***University of Colorado at Denver**; Division of Pulmonary and Critical Care Medicine, Department of Medicine, Aurora, CO*

7. Hybertson (2011)—Potential of Nrf2 activation.
    - Hybertson, B. M., et al. (2011). "Oxidative stress in health and disease: the therapeutic potential of Nrf2 activation." Mol Aspects Med **32**(4-6): 234-246.
    - ***University of Colorado at Denver**, Department of Medicine, Division of Pulmonary Science and Critical Care Medicine, Aurora, CO*
      ***LifeVantage Corporation**, South Jordan, UT*

8. Donovan (2012) Phytochemical Activation of Nrf2
    - Donovan, E. L., et al. (2012). "Phytochemical activation of Nrf2 protects human coronary artery endothelial cells against an oxidative challenge." Oxid Med Cell Longev **2012**: 132931.
    - ***Colorado State University**, Department of Health and Exercise Science, Fort Collins, CO*
      ***University of Colorado**, Pulmonary Sciences and Critical Care Medicine, Denver Anschutz Medical Campus Research Building*

9. Dugan (2012)—Breast cancer cells
    - Dugan, A., et al. (2012). "Comparison of the dietary supplement Protandim and 4-hydroxytamoxifen on pre-malignant human breast cancer cells." The FASEB **26**.
    - ***Louisiana State University**, Health Science Center*

10. Reuland (2013)— Heart muscle cells
    - Reuland, D. J., et al. (2013). "Upregulation of phase II enzymes through phytochemical activation of Nrf2 protects cardiomyocytes against oxidant stress." Free Radic Biol Med **56**: 102-111.
    - ***Colorado State University**, Department of Health and Exercise Science, Fort Collins,CO*
      ***University of Colorado at Denver Health Science Center**; Cardiovascular Pulmonary Research Group, Division of Cardiology, School of Medicine, Aurora, CO*
      ***University of Colorado, Denver Anschutz Medical Campus**, Pulmonary Sciences and Critical Care Medicine, Aurora, CO*

11. Lisk (2013)—Rats & acute mountain sickness
    - Lisk, C., et al. (2013). "Nrf2 activation: a potential strategy for the prevention of acute mountain sickness." Free Radic Biol Med **63**: 264-273.
    - ***School of Medicine**, Division of Cardiology, Department of Pediatrics, Cardiovascular Pulmonary Research Group, Aurora, CO*
      ***University of Colorado at Denver**, Pulmonary Division, Anschutz Medical Campus, Aurora, CO*
      ***Duke University**, Department of Radiation Oncology, Durham, NC*
      ***Colorado State University**, Exercise and Sports Science, Fort Collins, CO*

12. Cheatham (2015) – animals and hearing function

- Cheatham, M. A., et al. (2015). "Prestin-Dependence of Outer Hair Cell Survival and Partial Rescue of Outer Hair Cell Loss in PrestinV499G/Y501H Knockin Mice." PLoS ONE **10**(12): e0145428.
- ***Northwestern University**, The Knowles Hearing Center, Roxelyn and Richard Pepper Department of Communication Sciences and Disorders, Department of Neurobiology, Evanston, IL*
  ***Feinberg School of Medicine Northwestern University,** The Knowles Hearing Center, Department of Otolaryngology-Head and Neck Surgery, Chicago, IL*

13. Strong (2016) – Mice and longevity
    - Strong, R. (2016). "Nrf2 and longer lifespan in mice treated with Protandim " Aging Cell: 12496
    - ***The University of Texas Health Science Center at San Antonio**, Department of Molecular Medicine and Barshop Institute for Longevity and Aging Studies, San Antonio, TX*
      ***West Virginia University**, Center for Basic & Translational Stroke Research, Morgantown, WV*
      ***Wageningen University and Research Centre**, Division of Human Nutrition, Wageningen, The Netherlands*
      ***National Institute on Aging**, Division of Aging Biology, Bethesda, MD*

14. Abusarah (2016) - Human & mice cartilage cells
    - Abusarah, J., et al., (2016) Elucidating the role of Protandim and 6-gingerol in protection against osteoarthritis. Cell Biochemistry [10.1002/jcb.25659]
    - ***University of Montreal**, Orthopedic Research Laboratory, Osteoarthritis Research Unit and Research Centre, Hopital du Sacre-Coeur de Montreal and Department of Surgery, Montreal, Quebec, Canada*

15. Lim (2016) - Rat brain cells (oligodendrocytes)
    - Lim, J. L., et al. (2016). "Protandim Protects Oligodendrocytes against an Oxidative Insult." Antioxidants (Basel) **5**(3).
    - ***Vrije Universiteit University Medical Center**, Department of Molecular Cell Biology and Immunology, Neuroscience Campus Amsterdam, Amsterdam, the Netherlands*
      ***University Medical Center Groningen**, Department of Cell Biology, University of Groningen, Groningen, the Netherlands*
      ***University of Colorado at Denver**, Department of Medicine, Division of Pulmonary Science and Critical Care Medicine, Aurora, CO*

16. Chevreau (2017) – Primary human small intestinal epithelial cells (Extended Abstract)
    - Chevreau, N., (2017) Protandim treatment causes reversible nuclear translocation of Nrf2 and activation of the antioxidant response element. JISANH **3**(3):11865.
    - ***LifeVantage Corporation***

17. Bruns (2018) – Exercise adaptation in rats
    - Bruns et al (2018) "Differential effects of Vitamin C or Protandim on skeletal muscle adaptation to exercise". J. Applied Physiology. June 1, 2018
    - ***Colorado State University**; Department of Health and Exercise Science*

Scientific Reviews that mention Protandim™ (5)

1. Robbins (2011)—MnSOD and skin cancer
    - Robbins, D., et al. (2011). The role of manganese superoxide dismutase in skin cancer. SAGE-Hindawi Enzyme Research 2011, 409295: 1-7
    - ***Louisiana State University Health Science Center;** Department of Pharmacology*

2. Voelkel (2013)—Pulmonary artery hypertension
    - Voelkel, N. F., et al., (2012). Antioxidants for the treatment of patients with severe angioproliferative pulmonary hypertension?. Antioxidants & Redox Signaling DOI: 10.1089/ars.2012.4828
    - ***Virginia Commonwealth University**, Victoria Johnson Center for Lung Research, Richmond, Virginia*
      ***Vrije Universiteit (VUMC),** Pulmonary Division, Amsterdam, The Netherlands.*

3. Reuland (2013)—Attenuation of cardiovascular disease
    - Reuland, D. J., et al. (2013). "The role of Nrf2 in the attenuation of cardiovascular disease." Exerc Sport Sci Rev **41**(3): 162-168.
    - ***Colorado State University**, Department of Health and Exercise Science, Fort Collins, CO*
      ***University of Colorado**, Pulmonary Sciences and Critical Care Medicine, Denver Anschutz Medical Campus, Aurora, CO*

4. Gao (2014)—The clinical potential of Nrf2 activation
    - Gao, B., et al. (2014). "The clinical potential of influencing Nrf2 signaling in degenerative and immunological disorders." Clin Pharmacol **6**: 19-34.
    - ***University of Colorado Anschutz Medical Campus**; Department of Medicine, Division of Pulmonary Sciences and Critical Care Medicine, Aurora, CO*

5. Pall (2015)- Nrf2 a master regulator
    - Pall, M. L. and S. Levine (2015). "Nrf2, a master regulator of detoxification and also antioxidant, anti-inflammatory and other cytoprotective mechanisms, is raised by health promoting factors." Sheng Li Xue Bao **67**(1): 1-18.
    - ***Washington State University**, Portland, Oregon*
      ***Allergy Research Group**, Alameda, CA*

Scientific Presentations (3)

1. Talbott (2015) “The Keap1/Nrf2 Pathway in Health and Disease” at Biochemical Society – January 6-8, 2015 at Cambridge University, United Kingdom
2. Chevreau (2016) Experimental Biology USA– Gut cells
3. Chevreau (2016) ISANH Paris, France – Reversible activation of Nrf2 with Protandim