

**Long Considered, Now Confirmed: KOHJIN Life Sciences Presents  
Successive Studies on the Presence and Benefits of Glutathione through Oral Intake  
– 61<sup>st</sup> ACSM & 248<sup>th</sup> ACS Annual Meeting 2014**

The indicators on Glutathione (GSH) have been pointing in the same direction for years: The major redox couple has been widely available in pharmaceuticals and supplements, offering benefits that range from discharging toxins and expunging free radicals from the system, to combating aging, pollution, stress, bolstering liver function, beautifying the complexion, and reenergizing exhausted muscles. Though the empirical evidence has been overpowering, new science-based studies and support have been unavailable until now, thanks to successive studies conducted by KOHJIN Life Sciences.

Presenting at the 61st Annual Meeting of the American College of Sports Medicine (ACSM) in Orlando, Florida this past May, researchers from KOHJIN Life Sciences, Kyoto Prefectural University, and the Karolinska Institutet presented a report on their laboratory and *in vivo*/human clinical studies that made them the first researchers ever to tip the balance to certainty in the matter of GSH's ability to restore muscular energy through oral intake and absorption; shining a brighter light on the tripeptide's significant role in maintaining good health, based on our human studies. The studies demonstrate, for the first time, mitochondrial biogenesis associated with the ingestion of a food product. They show that oral intake of GSH (KOHJIN Glutathione, US FDA GRAS Notified GRN #000293) resulted in a PGC-1 $\alpha$ , Mitochondrial DNA and AMP activated-kinase expression in skeletal muscle, which can lead to acceleration of fatty acid utilization through activation of mitochondrial aerobic metabolism. These results suggest that GSH improves lipid metabolism and acidification in muscle during exercise, which leads to the decrease of muscle fatigue. For nearly a half century, KOHJIN Life Sciences, a wholly owned subsidiary of the Mitsubishi Corporation, has developed its reputation as the pioneer research group studying the benefits of GSH. The company's signature process of L-Glutathione production using *Torula* yeast, its quality, consistency, and multiple internationally recognized dietary certifications have all contributed to KOHJIN's Glutathione becoming the world's largest selling GSH, and KOHJIN one of the field's most trusted names. KOHJIN will be hosting a seminar at this

year's 248th American Chemical Society (ACS) annual meeting in San Francisco on August 12th and 13th to discuss these game-changing studies with newly published oral absorption data, which constitute the most significant news to reach the community about GSH since the earliest days of its development.

In brief, though GSH has a long history as a natural supplement to improve liver function and skin whitening, no data has shown a significant increase of GSH being detected in human blood after oral ingestion, leaving the benefits of GSH supplementation in question. By following the path of protein conjugates in blood serum, KOHJIN Life Science's research was able, for the very first time, to demonstrate conclusively its increased presence in human blood plasma following ingestion. The implications of this study are both stunning and hugely encouraging to all those involved in the future of functional food supplementation.

Please visit the KOHJIN Life Sciences website [<http://www.kohjinls.com/en/>] to learn more. Formulators and manufacturers have trusted KOHJIN Glutathione for years. With these studies, their confidence has been rewarded with conviction, and consumers can look to greater and more varied ways to partake of GSH's benefits on a daily basis going forward.