

Gold and redox signaling molecules: A catalyst for enhancing recovery and combating oxidative stress

Executive summary

- The synergy of gold combined with redox signaling molecules increases Nrf2 activation, providing anti-inflammatory properties, supporting immune function, and reducing oxidative stress.
- This synergy also increases activation of the Nrf2 signaling pathway, enhancing relief and recovery against oxidative stress and inflammation.
- The redox signaling molecules gold gel (RSM-GG) formulations were shown to be non-toxic and had no negative impact on cell viability.
- The gel formulations increased intracellular glutathione (GSH) levels by up to 70%, boosting antioxidant defenses
- Under stress conditions, the gel restored GSH levels by up to 280%, supporting cellular recovery.
- The gel activated the Nrf2 pathway by 160%, strengthening antioxidant defenses.
- The gel also promoted the expression of NQO1, which is a precursor to NAD+ and a protective protein that enhances oxidative stress resistance.

Recent research on gold and redox signaling molecules

RSM-GG gel: A new formulation for cellular health

A recent study focused on researching different formulations that combine gold particles with redox signaling molecules to create the new formulation of RSM-GG. Gold micro-powder, gold flakes, and clay were added to a proprietary and well-calibrated formulation containing redox signaling molecules to create a new gel formulation. The resulting gel aims to provide relief and enhance the body's ability to fight oxidative stress at the cellular level in order to accelerate recovery. The study tested the gel on cells to evaluate both its safety and effectiveness.

Safety testing of the RSM-GG gel

To ensure safety, the study first assessed whether the gel was toxic to human cells. The results showed that the gel was non-toxic and did not reduce cell viability, meaning it is safe for use. A human repetitive insult patch test was also conducted. No irritation or sensitivity was detected in humans who tested the product. Testing shows this formulation to be completely safe.

Effect on antioxidant defenses: GSH and Nrf2 activation

The study evaluated the gel's effect on antioxidant defenses and recovery pathways, specifically focusing on two key aspects: glutathione (GSH) and Nrf2. GSH is a natural protein produced by healthy cells to protect them from damage, while Nrf2 is a protein central to the body's antioxidant response. The study found that the RSM-GG significantly increased intracellular GSH levels, enhancing the cells' ability to defend against oxidative stress. Furthermore, the gel activated Nrf2, leading to stronger relief and recovery.



US English 02/2025. This material is intended only for the US market. All words with trademark or registered trademark symbols are trademarks of ASEA, LLC. ©2025 ASEA, LLC, Pleasant Grove, UT 84062 • support@aseaglobal.com • aseaglobal.com

Results of the study

Increased GSH levels and enhanced cellular protection

The results of the study showed that the RSM-GG gel increased GSH levels by up to 70%, boosting the cells' ability to protect themselves from oxidative damage. In cases where cells were artificially depleted of GSH, the gel was able to restore GSH levels by up to 280%, suggesting its potential for helping cells recover from stress.

Promoting Nrf2 and NQO1 expression

The study also showed that the gel promoted the expression of both Nrf2 and NQO1, two proteins involved in relief and recovery. It activated Nrf2 by 160% which protects cells from oxidative damage.

NQO1 is an enzyme that helps protect your cells from damage and supports faster recovery by keeping CoQ10 in its active form, ubiquinol. This powerful antioxidant fuels mitochondria—the "powerhouses" of cells—to produce energy more efficiently, helping cells repair and regenerate. By neutralizing free radicals, CoQ10 also strengthens cell membranes, reducing damage and slowing signs of aging.



Graphical highlight 1

Conclusion: The power of RSM-GG in cellular health

The study demonstrated that the RSM-GG gel is safe and effective in enhancing the antioxidant capacity of human cells. By activating the Nrf2 pathway and increasing GSH levels, the gel enhances the body's resistance to oxidative stress. Additionally, the gel supports cellular resilience and recovery by promoting the expression of protective proteins like NQO1.

The dual mechanism of action—boosting GSH levels and activating the Nrf2 pathway—provides a strong defense against oxidative stress. The non-toxic nature of the gel makes it suitable for use in applications where oxidative stress plays a significant role in cell damage. These findings suggest that this gold-based gel could be used to improve relief, recovery, and maintain cellular health in conditions where oxidative stress is a contributing factor.



Graphical highlight 2