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New Findings on the Role of Glutathione in Cancer

By Priya Shah

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by: **Priya F Shah**

Cancer cells and normal cells are known to respond differently to nutrients and drugs that affect glutathione status.

Numerous studies have shown that tumor cells have elevated levels of glutathione levels, which confers resistance to chemotherapy drugs.

One of the challenges of cancer therapy is how to deplete tumor cells of glutathione, so as to make them more vulnerable to the effects of chemotherapy drugs, while at the same time allowing normal cells to remain relatively unaffected by chemotherapeutic drugs.

A number of new findings have emerged that take into consideration the role of glutathione in pathways that promote programmed cell death (apoptosis) in cancer cells.

A German study has reported that glutathione (GSH) plays a critical role in cellular mechanisms that result in cell death. The study found that cancer cells resistant to apoptosis had higher intracellular GSH levels.

Depletion of glutathione in these tumor cells made them more vulnerable to the effects of anticancer drugs or the gene that promotes apoptosis (CD95 or APO-1/Fas). The researchers concluded that apoptosis resistance in tumor cells depends, at least in part, on intracellular GSH levels. (1)

In another study conducted in Spain, researchers found that lowering GSH concentration may be convenient not only for the efficiency of chemotherapy, but also to induce a rather fast and direct apoptosis mechanism in tumor cells. (2)

Based on that premise that the glutathione-S-transferase enzyme is expressed at high levels in many tumors, researchers at the Fox Chase Cancer Center in Pennsylvania, went on to design a novel

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prodrug (PABA/NO).

The glutathione-s-transferase in tumor cells converts PABA/NO to lethal nitric oxide, resulting in death of the tumor cell. The prodrug was shown to have antitumor effects in an animal model for human ovarian cancer. (3)

In the fourth study, Polish researchers found that ingesting a selenium supplement is beneficial, as a supportive element in chemotherapy. (4)

Selenium is a co-factor of the enzyme glutathione peroxidase [GSH-P(x)] and was found to significantly increase the activity of GSH-P(x) in patients receiving the supplement.

A previous clinical study by the same researchers recommended the administration of selenium in patients with ovarian cancer undergoing multi-drug chemotherapy. (5)

Another interesting study by researchers in Texas showed that your chances of surviving a type of brain cancer, called primary malignant glioma, could depend on the type of glutathione-s-transferase (GST) gene you were born with.

Having a combination of a two specific variants of GST (germ-line GSTP1*A/*A and GSTM1 null genotype) confers a survival advantage in some types of brain cancers, but also comes with an increased risk of adverse events related to chemotherapy. (6)

There is compelling evidence to suggest a crucial role for glutathione and substances that target glutathione metabolism in the prevention and treatment of cancer.

Undenatured whey protein is one of the natural foods known to selectively deplete cancer cells of their glutathione, thus making them more susceptible to such cancer treatments as radiation and chemotherapy.

For a complete report on the research on undenatured whey protein and cancer see the report [Glutathione \(GSH\) and Whey Protein in Cancer](#).

Disclaimer: The information here is not provided by medical professionals and is not intended as a substitute for medical advice. Please consult your physician before beginning any course of treatment.

References:

1. Friesen C et al. [Cell Death and Differentiation advance online publication, 23 April 2004]
2. Tormos C et al. [Cancer Lett. 2004 May 10;208(1):103–13.]
3. Findlay VJ et al. [Mol Pharmacol. 2004 May;65(5):1070–9.]
4. Sieja K et al. [Gynecol Oncol. 2004 May;93(2):320–327.]

5. Sieja K. [Pharmazie. 1998 Jul;53(7):473–6.]

6. Okcu MF et. al. [Clin Cancer Res. 2004 Apr 15;10(8):2618–25.]

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L–Glutathione, The Wonder Antioxidant

By Barrett Niehus

A naturally occurring compound, L–Glutathione (Tathion,) has demonstrated that it is effective in fighting cancer, environmental poisons, and even cataracts. Sound like snake oil? Well, that is what I thought until I started doing research. It turns out that L–Glutathione is one of the most effective antioxidants that our body produces. It works to protect our bodies from the thousands of daily hazards that we are exposed to such as pollution, second hand smoke, alcohol, and food chemicals and poisons. In fact, it is so effective that some researchers believe that it can actually slow down the aging process.

L–Glutathione is an antioxidant that our body produces from three basic amino acids that are found in our food. Our body makes it and uses it, along with the other vitamins that we ingest, as a hard line defense against all of the hazards that cause us to grow sick and old. This is important because research into this specific anti–oxidant has shown that it can actually cure disease, regenerate damaged tissue, minimize the side effects of chemotherapy, and treat cataracts.

It works by acting as a guardian to the toxic compounds that attack our cells. These compounds, typically called free radicals, are extremely aggressive and attack the molecules that make up the cells in our body. These free radicals change the chemical structure of the molecules in our cells and make them ineffective. This in turn either kills the cell, makes it ineffective, or turns it cancerous.

L–Glutathione and other antioxidants attack the free radicals and destroy them before they have a chance to attack the cells.

Because it protects our cells by attacking the external poisons, the levels of L–Glutathione in our blood have the potential to significantly impact our overall health. Studies have demonstrated that administration of L–Glutathione is extremely effective in treated diseases such as Hepatitis. It has also been shown to be a key player in the regeneration of the liver, and to combat cirrhosis. The compound is useful in treating jaundice and protects the brain and body tissues in the event of poisoning. In addition, the level of tissue damage from Carbon Monoxide, Hydrogen Sulfide, heavy metals, pesticides, and environmental poisoning has been demonstrated to be significantly lower with adequate L–Glutathione in the blood stream. Finally, the side effects of chemotherapy and the growth

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of cataracts have been demonstrated to be significantly reduced with the addition of L–Glutathione.

So what does all of this mean? Essentially, it is time to supplement your diet with L–Glutathione or the proteins that help your body make more of this essential nutrient. Although L–Glutathione is readily made by your body, supplementation with it and its precursors may increase your overall level of protection. Glutathione and its precursors, Cysteine, Glycine and L–Glutamic Acid, are all readily available as food supplements in your local health food store. In addition to eating a healthy and balanced diet, supplementation with Glutathione and its constituents can only help to increase your overall level of health, and may even slow down the process of growing old.

Barrett Niehus is a principal in IP Ware

and is a technical associate of

Compound Solutions in Escondido, California.

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