

# LIFEPHARM EGG

## PROVEN TO PROTECT CELLS FROM SEVERE OXIDATIVE DAMAGE



Laminine® is a proprietary formula of LifePharm® built on the foundation of the early, fertilized, unprocessed avian egg extract. Unlike many other heated or chemically processed egg products, the fertilization of the LifePharm egg and its precise incubation time helps it retain its original active components. Comprised of a rich source of vital nutrients containing unique peptides, proteins, enzymes and bioactive growth factors, the LifePharm egg keeps active components in their natural state and functional.

When blended with quality fish and vegetable proteins to round out the amino acid profile, Laminine produces beneficial health effects. One of these health benefits is antioxidant protection.

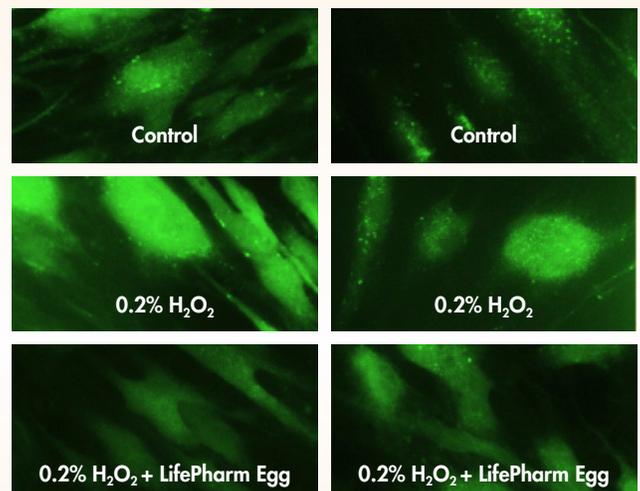
### ANTIOXIDANT TEST SHOWS LIFEPHARM EGG PROTECTS CELLS FROM SEVERE OXIDATIVE DAMAGE

Recently, LifePharm scientists connected with Dr. A. Hinek M.D., PhD, a human fibroblast cell scientist at the University of Toronto, who has expertise in techniques to evaluate growth factors and antioxidants. Dr. Hinek performed an antioxidant test by adding the LifePharm egg extract to human fibroblast cells. These cells were undergoing exposure to severe oxidative damage. The results showed powerful antioxidant properties from the LifePharm egg inhibiting oxidative stress.

### POWERFUL ANTIOXIDANT PROPERTIES FOUND IN LAMININE

In the pictures, the top control picture shows normal human fibroblast skin cells in culture, whereas the middle slide shows cells dying and spilling their contents when bombarded by the oxidative damage caused by hydrogen peroxide. The bottom slide shows that the fibroblast cells are protected from the oxidative damage of hydrogen peroxide ( $H_2O_2$ ) when the LifePharm egg extract is added to the cell culture.<sup>4</sup>

**Treatment with LifePharm Egg Inhibits the Hydrogen Peroxide-induced Production of Free Radicals**  
Detection of Free Radicals (ROS)  
in culture with two types of human fibroblasts



## THE CONNECTION BETWEEN OXIDATIVE STRESS AND ANTIOXIDANTS

Oxidative stress is hypothesized to be responsible for the onset and development of various diseases and ageing. Dietary antioxidants are thought to impart potential benefits in reducing the risk of some chronic diseases because of the antioxidant functions. There is extensive research on the presence and characterization of antioxidants from fruits, vegetables, cereals and herbs; however, there is only limited research with regard to antioxidants from animal derived products.<sup>3</sup>

Young, fertilized egg proteins (such as ovalbumin, ovotransferrin, phosvitin) are antioxidants. They also contain vitamin E, vitamin A, selenium and carotenoids, which are also reported to have antioxidant properties. However, domestic cooking tends to reduce the antioxidant activity of egg.<sup>3</sup>

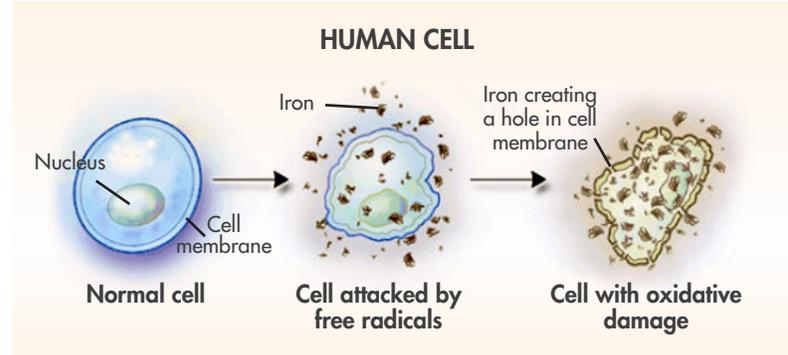
## PHOSVITIN INHIBITS DAMAGING IRON OXIDE FORMATION

Phosphopeptides are small protein molecules that attach phosphorus (the second most profuse mineral in the human body). This helps them effectively bind calcium and iron, and inhibit formation of insoluble calcium phosphates or iron complexes. Therefore, phosphopeptides can increase calcium or iron bioavailability and prevent oxidation.<sup>2</sup>

Phosvitin is one of the most important phosphopeptides, preserved in the LifePharm egg, and is considered the most phosphorylated protein found in nature. Phosvitin contains much greater number of phosphates in the molecule than milk protein.<sup>1</sup>

Although iron and copper are nutrients essential to health, consuming too much of these elements in foods can be harmful. Excess free floating iron and copper can become oxidized and when they come in contact with cell membranes or other structures they cause severe damage. Phosvitin is the best antioxidant to capture unattached iron and copper within the cell membrane.<sup>2</sup>

Phosvitin has also been shown to protect DNA against hydroxyl free radical damage. Because the phosvitin can attach to iron it can inhibit iron oxide formation. In one evaluation the antioxidant activity of phosvitin was significantly greater than that of vitamin E.<sup>2</sup>



Recent research studies indicate that numerous and powerful antioxidants can be found in the LifePharm egg extract. The LifePharm proprietary egg contains a unique combination of growth factors, peptides and antioxidants not found in other plant or animal sources. Laminine further contains a complete profile of all the essential and non-essential amino acids in a natural, non-synthetic form. Shown to promote an overall sense of health and well-being, Laminine has helped improve the lives of tens of thousands of people all over the world.

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These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

### REFERENCES

1. Chunyan L, Geng F, Huang X, Ma Heiha, Zhang X. Phosvitin phosphorous is involved in chicken embryo bone formation through dephosphorylation. *Poultry Science* 93:3065-3072.
2. Samaraweera H, Shang W, Lee EJ, Ahn D U. Egg Yolk Phosvitin and Functional Phosphopeptides—Review. *J of Food Science*, 2011, Sept.76;7;R143-R150.
3. Nimalaratne C1, Wu J. Hen Egg as an Antioxidant Food Commodity: A Review. *Nutrients*. 2015 Sep 24;7(10):8274-93.
4. Hinek, A. University of Toronto, Toronto Canada. Immunofluorescent cell staining of human dermal fibroblasts treated with hydrogen peroxide and Proprietary LifePharm egg extract. Unpublished data (Feb. 2016). Copyright protected.