# Effect of Selenium on the Nutritional Components of *Ganoderma lucidum* (W.Curt.:Fr.) Lloyd

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Selenium (Se) is not an essential microelement because some organisms—i.e., yeasts and plants—do not need selenoproteins, but in some animals and humans Se play an essential nutritional role. Selenium is an intergral component of several enzymes and proteins, and according to their roles it can be concluded that Se is an antioxidant and an antimutagenic agent, and it prevents the malignant transformation of normal cells and activation of oncogenes.

The effect of Se on the nutritional components of Ling Zhi or Reishi mushroom *Ganoderma lucidum* (GL) such as polysaccharides, proteins, amino acids, and mineral elements was studied using Se-enriched *G. lucidum* (Se-GL) of different Se content as tested samples. The Se-GL was obtained by cultivating *G. lucidum* in substrate with different Se contents.

The results showed that Se-GL with good yield and high Se content could be obtained by cultivating *G. lucidum* in a substrate with Se content of 200~250 μg/g. Low concentration of Se (<100 μg/g) in the substrate facilitated the synthesis of total protein and amino acids in *G. lucidum,* but high concentration of Se (>150 μg/g) played a reverse role. However, Se of all concentrations facilitated the synthesis of polysaccharides. Se concentration in the culture had no significant effect on the distribution of the amino acids and proteins. In addition, the effect of Se on the contents of mineral elements of Se GL was rather complicated. With the increase of Se content in Se-GL, the contents of Cu and Mo increased; however, the contents of other elements such as Fe, Ca, and Sr decreased.