# Investigating the Effects of Chaga Mushroom Extracts on the Development of a Specific Tumor Cell Line

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The Chaga mushroom (Inonotus obliquus) is a parasitic fungus. Commonly referred to as “black gold,” the charcoal colored mushroom grows mostly on birch trees in very cold areas around the world. Chaga mushrooms have been used for centuries by various cultures for its medicinal properties. Along with its ability to boost the immune system, enhance liver health and fight viruses, Chaga has been rumored to treat or prevent some forms of cancer. More than 150,000 people die annually from lung cancer in the US, accounting for almost 25% of all cancer-related deaths. There are two major types of lung cancer- non-small cell lung cancer and small cell lung cancer. Traditional treatments for lung cancer include chemotherapy, radiation therapy, surgery, and immunotherapy. The side effects of traditional cancer treatments include many undesirable reactions such as hair loss, fatigue, and infection. Treatment with Chaga mushroom extracts has the potential to treat many kinds of cancer without these side effects. There are not currently any human studies available, but the results of studies conducted in rats have shown the ability for Chaga mushroom extract to effectively treat certain kinds of cancers. Overall, the extract produced a decrease in the number of cancer cells with an average reduction of 67.1%. The results of this experiment may indicate that Chaga mushroom extract has the potential to treat certain types of cancer in humans, particularly large cell carcinoma. The significance of this application lies in the idea that cancer patients could potentially avoid the detrimental side effects that many traditional treatments cause. It also has the potential to lower the costs of treatment dramatically.

**Awards Won:**