


## CASE REPORT

## *Trametes versicolor* (Turkey Tail Mushrooms) and the Treatment of Breast Cancer

彩茸栓菌（云芝）和乳腺癌治疗

*Trametes versicolor* (cola de pavo) y el tratamiento del cáncer de mama

Paul Stamets, United States

 Content designated as open access.

**Author Affiliation and Disclosure**

Paul Stamets is the owner and director of research at Fungi Perfecti Laboratories, Kamilche Point, Washington.

**Correspondence**

Paul Stamets  
paulstamets@gmail.com

**Citation**

Glob Adv Health Med. 2012;1(5):18.

**Key Words**

*Trametes versicolor*, turkey tail mushrooms, breast cancer, beta-glucans

“PS,” an 83-year-old woman, was diagnosed in June 2009 with advanced, metastatic inflammatory breast cancer. At the same time, she began chemotherapy with Taxol and Herceptin, she also began taking capsules of turkey tail mushroom daily. The dose was 4 g twice daily (Host Defense Turkey Tail capsules, Fungi Perfecti Laboratories, Kamilche Point, Washington). The turkey tail capsules consist of activated, freeze-dried, organic mushroom mycelium, containing polysaccharides (beta-glucans, arabinoxylane, glucose, xylose, galactose, mannose, glycoproteins, ergosterols, triterpenoids, and other myconutrients). In December 2009, when the patient’s chemotherapy regimen was completed and she began Herceptin maintenance therapy every 3 weeks, she continued to take 4 g daily of turkey tail mushrooms and added a combination mushroom formula (Host Defense MyCommunity capsules, Fungi Perfecti, Laboratories). This preparation consisted of 17 species of activated, freeze-dried, organic mushroom mycelium, containing polysaccharides (beta-glucans, arabinoxylane, glucose, xylose, galactose, cordycepic acid, glycoproteins, ergosterols, triterpenoids, and other myconutrients).

Turkey tail mushrooms grow in a woodland environment worldwide and have been reported to stimulate immune function in women with breast cancer. They are called bracket fungi because they form thin structures in concentric circles and grow almost everywhere trees are found. This species of mushrooms has a history of use in Asia as a nonspecific immune modulator, and in breast cancer patients, they have been shown to interact with the CR3 membrane receptors for beta-glucans.<sup>1</sup> Immune modulation is believed to be the primary mechanism of action of turkey tail mushrooms.<sup>2</sup> The University of Minnesota and Bastyr University (Kenmore, Washington) recently completed a phase I dose-escalation trial and found that up to 9 g/day of a *T versicolor* preparation is safe and tolerable in women with breast cancer who had undergone chemotherapy.<sup>3</sup> Perhaps the most intriguing part of this study was the finding that 6 g of *T versicolor* appeared to lead to faster immune recovery after radiotherapy. This should be studied in additional clinical trials on the potential primary and secondary effects of mushroom therapy in patients with cancer and, more specifically, cancers with altered CR3 membrane receptors.



*T versicolor* growing in its natural habitat.

Photograph courtesy of Paul Stamets.

My hypothesis is that that the documented immune modulation activity of the turkey tail mushrooms enhanced the ability of the patient’s immune system to discover the tumor, thereby increasing the effectiveness of the chemotherapy. This is consistent with some of the basic science research describing medicinal mushrooms as modulators of molecular targets in cancer treatment. Three and one-half years later, this now 87-year-old patient leads a vital and active life, is disease free, and in addition to being administered Herceptin every 3 weeks, takes a daily dose of turkey tail mushrooms and a 17-species mushroom formula.

**REFERENCES**

1. Morimoto T, Ogawa M, Orita K. Postoperative adjuvant randomised trial comparing chemoendocrine therapy, chemotherapy and immunotherapy for patients with stage II breast cancer: 5-year results from the Nishinohon Cooperative Study Group of Adjuvant Chemoendocrine Therapy for Breast Cancer (ACETBC) of Japan. *Eur J Cancer*. 1996 Feb;32A(2):235-42.
2. Zaidman BZ, Yassin M, Mahajna J, Wasser SP. Medicinal mushroom modulators of molecular targets as cancer therapeutics. *Appl Microbiol Biotechnol*. 2005 Jun;67(4):453-68.
3. Torkelson C, Sweet E, Martzen M, et al. Phase I clinical trial of *Trametes versicolor* in women with breast cancer. *ISRN Oncol*. 2012;2012:251632. Epub 2012 May 30.