Fig. 2

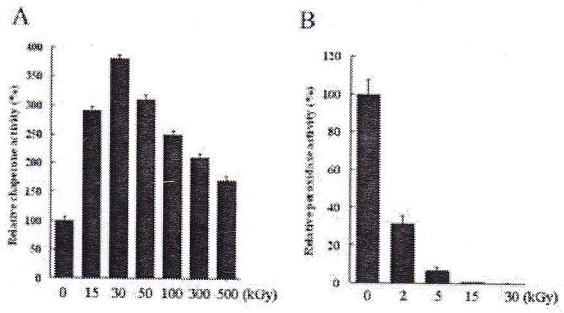

Figure 2. The effect of gamma irradiation on the enzymatic activities of PP1084.

(A) The chaperone activities of recombinant PP1084 proteins were measured using the aggregation of malate dehydrogenase (MDH) at 43°C at 350 nm. The chaperone activities of irradiated PP1084 proteins were compared with non-irradiated PP1084, whose activity was set to 100%. (B) The peroxidase activities of recombinant PP1084 proteins were measured with the yeast Trx system and NADPH at 340 nm. The peroxidase activities of irradiated PP1084 proteins were compared with non-irradiated PP1084, whose activity was set to 100%. The data shown are the means of at least three independent experiments.

FI-10

IRRADIATION EFFECT ON ANTIFUNGAL POTENTIAL CINNAMOMUM ZEYLANICUM ESSENTIAL OIL

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The *Cinnamomum zeylanicum* (*C. verum*) is a small tree with 10-15 meters tall, native to Sri Lanka in South Asia. The leaves have a long-oval form and the flowers that bloom in small packets are greenish and have a distinct odor. The fruit is a purple, approximately 1 centimeter with a single seed. Cinnamon is a spice obtained from the tree inner bark. The taste and scent come from cinnamic aldehyde or cinnamaldehyde. Widely used as a food condiment and flavoring, used in perfumery, chocolate and liqueurs preparation. In the medicine, the volatile oils are used as a cold "cure". The Cinnamomum has many biological properties as analgesic, antiseptic, antispasmodic, aphrodisiac, astringent, carminative, haemostatic, insecticidal and parasiticide. Previous research has revealed interesting antimicrobial effect in *C. zeylanicum* essential oil. Camphene, linalool, phelendrene, terpinene, limonene, cymene, cariophyllene, cinnamaldheyde and eugenol are some of the compounds found in *C. zeylanicum* essential oil. Spices irradiation is a worldwide process used and this technique is an effective pathogenic microorganisms control providing consumers food security. By the fact Cinnamomum not only be used in food, but also as an essential oil raw material this study investigated the cloves different irradiation doses influence on the possible antimicrobial potential oil. The aim of this study is evaluate the antifungal potential oil from unirradiated and irradiated clove in the fungus *Guinardia citricarpa* that causes serious damage in orange plantations. The clove samples will be irradiated in 60Co irradiator at doses of 0, 2.5, 5.0, 7.5 and 10.0kGy.

Key words: *Cinnamomum zeylanicum*; Irradiation; essential oil; *Guinardia citricarpa*; antifungal action