

CHARACTERIZATION AND CYTOTOXICITY OF ISOFLAVONES IN SOY TEMPEH AGAINST LUNG CANCER CELLS

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Summary

Tempeh, which is a fermented soybean product consumed widely in Indonesia has several beneficial characteristics and antioxidative activity being the most important of them. *Rhizopus oligosporus*, a fungus of Mucoraceae family is widely used as the starter of homemade tempeh. Although *R. oligosporus* can prevent the growth of other microorganisms; it can grow well together with *Lactobacillus plantarum*. Results demonstrated that co-inoculated tempeh contained higher beneficial isoflavones, followed by inoculated tempeh and unfermented soybean. Besides, isoflavones extracted from co-inoculated tempeh was also found to reduce cell viability in A549 lung cancer cells. The obtain data revealed that the co-inoculation between *R. oligosporus* and *L. plantarum* in tempeh processing improves bioavailability of isoflavones compound while maintains its anti-cancer activity.

Keywords: Antioxidative, anti-cancer, isoflavones, tempeh.