

Suthida Traibut 2010: Molecular Genetics and Proteomic Analysis of Button Mushroom, *Agaricus bitorquis* KPS1. Master of Science (Agricultural Biotechnology), Major Field: Agricultural Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Malee Srisodsuk, Ph.D. 78 pages.

Morphological and molecular characterization of internal transcribed spacer (ITS) of rDNA sequences in tropical button mushroom isolated from Kasetsart University, Kamphaeng Saen Campus was found to be *Agaricus bitorquis*. From *hypA* gene cloning in *A. bitorquis*, it was found to have 646 nucleotides, consisted of 4 coding sequences and translated to 114 amino acid with 8 conserved cysteine residues. Total protein found in fruiting body of tropical (*A. bitorquis*) and temperate (*A. bisporus*) button mushrooms were analysed and compared by two-dimensional polyacrylamide gel electrophoresis (2D-PAGE). The results showed that 590 and 651 proteins, with pI 4.5-7.5 and pI 4.4-8.7, were found in *A. bitorquis* and *A. bisporus*, respectively. The total proteins showed 43.32% similarity among the two mushrooms.

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Student's signature

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Thesis Advisor's signature