【ノート】

Determination and characterization of corrinoid compounds in truffle (*Tuber* spp.) and shoro (*Rhizopogon rubescens*) fruiting bodies

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[Abstract]

Edible mushrooms are an important source of various nutrients for vegetarians. However, vitamin B_{12} contents of various truffle and shoro fruiting bodies is unknown, and it is also unknown whether they contain vitamin B_{12} or the pseudovitamin B_{12}, which is biologically inactive in humans. We characterized and quantified vitamin B_{12} in the fruiting bodies of black and white truffles (*Tuber* spp.) and "shoro" (*Rhizopogon rubescens*) using a microbiological assay based on *Lactobacillus delbrueckii* subsp. *lactis* ATCC 7830. Bottled black truffle fruiting bodies contained approximately 4.5 µg of vitamin B_{12} per 100 g of wet weight, but the vitamin B_{12} contents of raw and frozen samples contained approximately 50% or less vitamin B_{12}. In addition, bottled white truffle and shoro fruiting bodies contained approximately 2.9 µg and 3.3 µg of vitamin B_{12} per 100 g of wet weight, respectively. The mean values (approximately 11.5 µg of vitamin B_{12} per 100 g dry weight) of these truffle fruiting bodies were higher than those reported for other edible mushroom fruiting bodies. Corrinoids were purified from the black and white truffles and shoro fruiting bodies and vitamin B_{12} was identified using liquid chromatography-electrospray ionization tandem mass spectrometry.

Key words: Cobalamin, *Rhizopogon rubescens*, Shoro, Truffle, *Tuber* spp., Vitamin B_{12}

［摘　要］

松露及び西洋松露（トリュフ）のビタミン B_{12}（B_{12}）含有量と B_{12} 化合物を同定した．黒トリュフと白トリュフは市販品（瓶詰，冷凍，生）を，松露は鳥取大学農学部附属菌類きのこ遺伝資源センターで冷凍保存された試料を用いた．各きのこ子実体から B_{12} の抽出・定量は，五訂増補日本食品標準成分表で採用される微生物的定量法で測定した．トリュフの B_{12} 含量は 6.0 - 18.7 µg/100 g 乾燥重量，松露は 7.0 µg/100 g 乾燥重量となり，他の食用きのこに比べて非常に高い B_{12} 含量を示した．また，*E. coli* 215 によるバイオオートグラムと LC/ESI-MS/MS 分析の結果，すべてのトリュフ及び松露子実体において B_{12} のみが検出され，疑似 B_{12} は含まれていなかった．