

## 【論文】

Luminescent intensity of cultured mycelia of eight basidiomycetous fungi from Japan

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### [Abstract]

Using eight species of fungi collected in Japan, we determined the intensity of light emitted by cultured mycelia based on multiple isolates from a single fungal species after two different culture periods and at two different temperatures. The highest luminescent intensity was produced by isolates of *Favolaschia peziziformis* followed by *Dictyopanus gloeocystidiatus*, *Armillaria mellea*, *Omphalotus japonicus*, *Pleurotus nitidus*, *Mycena chlorophos*, *Mycena manipularis*, and *Armillaria tabescens*. There were significant differences within the three species that had more than five isolates, *D. gloeocystidiatus*, *O. japonicus*, and *P. nitidus*. All *P. nitidus* isolates showed greater intensity after incubation for 7 d than for 14 d. In contrast, incubation for 14 d yielded greater intensity in *M. chlorophos*, *M. manipularis*, and *O. japonicus*. For one isolate of *D. gloeocystidiatus*, one isolate of *M. manipularis*, and four isolates of *O. japonicus*, the luminescence were significantly more intense at 25°C than at 15°C. Only one isolate each of *D. gloeocystidiatus*, *M. chlorophos*, and *P. nitidus* had lower intensity at 25°C than 15°C. Eight isolates from four species showed the highest intensity at 520 nm. The intensity produced by one isolate of *A. mellea* gradually decreased during measurement for 16 h.

Key words: *Dictyopanus gloeocystidiatus*, *Favolaschia peziziformis*, Luminescent mushroom, *Omphalotus japonicus*, *Pleurotus nitidus*

### [摘要]

本邦産 8 種の菌類菌糸体の発光強度を、培養日数と測定温度を変え、複数の菌株を用いて測定した。発光最大強度はエナシラッシタケで示され、次いでスズメタケ、ナラタケ、ツキヨタケ、シロヒカリタケ、ヤコウタケ、アミヒカリタケ、ナラタケモドキの順であった。同一種の中で 5 菌株以上を試験した結果、スズメタケ、ツキヨタケ、シロヒカリタケで菌株ごとの強度に有意差がみられた。培養 7 日間の方で強度が高かったものは、シロヒカリタケ全菌株であり、逆にヤコウタケとアミヒカリタケでは 14 日培養の方が高かった。測定温度 15°C よりも 25°C の方で強度が高かったものは、スズメタケとアミヒカリタケのそれぞれ 1 菌株、ツキヨタケの 4 菌株であった。スズメタケ、ヤコウタケ、シロヒカリタケのそれぞれ 1 菌株では 25°C の方が低かった。4 種の 8 菌株で発光最大強度は 520 nm であった。ナラタケ 1 菌株の 16 時間測定では強度は徐々に低下した。