GREEN FLUORESCENCE PROTEIN (GFP) FIRSTLY DETECTED IN AN IMMATURE MEDUSA OF NAUSITHOE SP. FROM JAPAN

By

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Abstract

Green fluorescence protein (GFP) is firstly detected in whole body of an immature medusa of Nausithoe sp. collected from Tanabe Bay, Wakayama Prefecture, Japan in 2011.

Introduction

By epi-fluorescence microscopic observations of immature individuals of any species of scyphomedusae and scyphopolyps do not demonstrate distribution of green fluorescence protein (GFP) as is rare in hydropolyps (Kubota 2011; Kubota & Gravili 2011; unpublished data). In the present study, however apparent GFP distribution in this taxonomic group is firstly reported among scyphomedusae collected in Japan.

Materials and methods

By towing a small plankton net vertically and/or horizontally in Tanabe Bay, a young individual of scyphomedusa belonging to the genus Nausithoe was collected at Shirahama, Wakayama Prefecture, Japan on September 1, 2011. This sole living specimen was placed in a depression slide glass soon after collection and its fluorescence distribution pattern was observed under an epi-fluorescence microscope (Nikon ECLIPSE 80i, Japan) with blue light excitation (using the B-2A filter set), and photographed.

Results and Discussion

Presence of green fluorescence protein (GFP) is detected in whole body of a young medusa of Nausithoe sp. (2.2 mm in diameter) with an eye on each rhopalia and round lappets, as shown in Plate 1, A-B. In the present study, apparent GFP distribution in this taxonomic
group is firstly reported among scyphomedusae collected in Japan.

References

Kubota, S. 2011. Green fluorescence in young individual(s) of Cubomedusa, Scyphomedusa
and Ctenophora. Kuroshio Biosphere, 7: 45-46+1Pl.

Kubota, S. and Gravili, C. 2011. Rare distribution of green fluorescent protein (GFP) in
hydroids from Porto Cesareo, Lecce, Italy, with reference to biological meaning of

Explanation of plate 1

Figures A-B: Transmission and green fluorescence images of the same individual of a young
individual of Nausithoe sp. (2.2 mm in diameter) collected from Shirahama, Tanabe Bay,
Wakayama Prefecture, Japan.