New discovery: Plaice are spotted (on the inside)

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Have you seen a spotted plaice? Probably. However, marine biologist Helen Nilsson Skold at the University of Gothenburg is the first person to research the spotted insides of plaice.

Many species of animal have skin or fur with intricate pigmentation patterns, which they use for camouflage, communication, regulation of body heat and protection against the sun. A study conducted by researchers at the Department of Marine Ecology at the University of Gothenburg has found that several species of fish also have highly-coloured internal pigmentation.

In a study published in *Pigment Cell & Melanoma Research*, marine biologist Helen Nilsson Sköld and her colleagues show that the number of internal pigment cells has a direct link to the degree of transparency of the fish. Transparent fish can change colour using their internal pigment cells, thus enhancing external skin pigmentation and their ability to adapt to the background colours of their surroundings.

Mysteriously, plaice also have a high number of internal pigment cells in, for instance, the ear and brain and around their internal organs. Plaice however are not particularly transparent. The internal pigment cells of this fish cannot be seen easily from the outside, which makes its internal display of colour somewhat bewildering.

According to Helen Nilsson Sköld and her colleagues, the fact that less transparent fish also have this internal pigmentation indicates that the

pigment cells may have other, as yet unknown, functions.

"We believe that the internal pigment cells either function as vessels for excess pigment or perhaps provide various forms of protection or contribute to the immune system. We hope to investigate this subject further," says Helen Nilsson Sköld.

Provided by University of Gothenburg