

蛍光造影法によるアユ眼底の観察

誌名	日本水産學會誌
ISSN	00215392
著者名	桜井,新太郎 村地,四郎 難波,憲二
発行元	日本水産學會
巻/号	54巻2号
掲載ページ	p. 321-321
発行年月	1988年2月

農林水産省 農林水産技術会議事務局筑波産学連携支援センター
Tsukuba Business-Academia Cooperation Support Center, Agriculture, Forestry and Fisheries Research Council
Secretariat



Short Paper

Fluorescein Angiographic Observation of a Ocular Fundus of Ayu

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(Accepted February 26, 1987)

The ocular fundus of ayu *Plecoglossus altivelis* 14.0 to 40.0 g in body weight, was observed by fluorescein angiography.¹⁾ Fluorescite Injection 10% (Alcon Inc.), for medical use and containing 10% fluorescein served as the fluorescein material, and was administered by injection into the caudal vein (0.1 to 0.5 ml), or by direct application to the gill surface (0.1 ml). In the case of ayu, the latter method made administration of the fluorescein material easier than the former. Ophthalmoscopy was observed by the method which was previously reported.^{2,3)}

Photographs of the ocular fundus were taken by a fundus camera for small laboratory animals (RC-2, model-621, Kowa Inc.). It was provided with a barrier-filter (Gelatin filter, No. 15, Kodak Inc.) and could be used with or without an excitation-filter (Gelatin filter, No. 47a, Kodak Inc.). Better photographs, however, were obtained without the excitation-filter. The ocular fundus could be observed for about 10 min more peripherally with clarity by the same amount of illumination as that in conventional methods.²⁻³⁾ In particular, fluorescein angiography made it possible to observe not only fundus vascularization up to the arterioles and capillaries but conditions of blood circulation as well (Fig. 1).

Remarkable constriction of the vessels and reduced blood flow were often observed at arteriolar branchings in the ocular fundus (Fig. 2). This may indicate that there is a special structure to control blood circulation at such points.

Fluorescein material was found to be considerably toxic to ayu, because all the fish died during or following the experiments. Nevertheless, the fluorescein angiographic method was concluded particularly useful for detailed *in vivo* observations of vascularization and blood circulation in the ocular fundus of fish.

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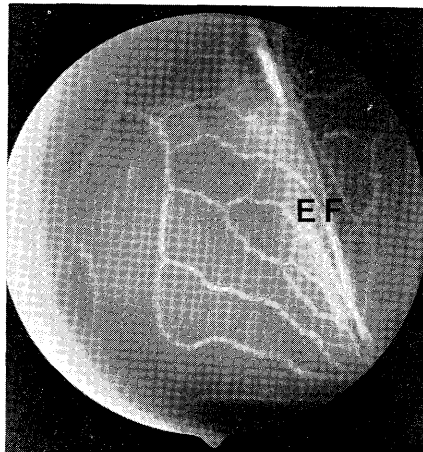


Fig. 1. Capillaries surrounding the embryonic fissure of ayu, observed by fluorescein angiography. (EF, embryonic fissure)

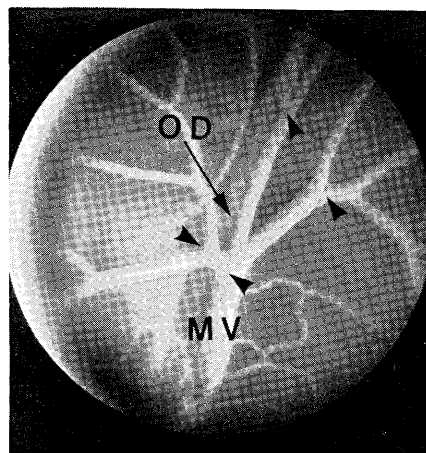


Fig. 2. Constriction of vessels (arrow heads) observed at arteriolar branchings in the ocular fundus of ayu. (OD, optic disc; MV, main vessel)

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