

(Note)

The first report of *Trypanosoma* sp. (Sarcomastigophora: Kinetoplastida) infecting catfish, *Silurus asotus* (Siluriformes: Siluridae) from Hyungsangang (River), Korea

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Trypanosoma sp. (Sarcomastigophora: Kinetoplastida) was found in the blood of the Korean catfish, *Silurus asotus*, for the first time in Korea. The morphological characteristics of *Trypanosoma* sp. in the present study were similar with those of *T. carassii*, *T. tincae* and *T. danilewskyi*. However, the free flagellum length of *Trypanosoma* sp. was obviously shorter than that of those species. The species identification was reserved until elucidating the pleomorphism according to the phase of infection and the cross infectivity among fish species.

Key words: *Trypanosoma* sp., *Silurus asotus*, Blood parasite

Piscine trypanosomes are haemoflagellates transmitted by blood sucking leeches, and about 190 species of trypanosomes have been described in freshwater and marine fish (Woo and Poynton, 1995). Host specificity of the vast majority of piscine trypanosomes is not known (Lom, 1979). Furthermore, many trypanosome species show pleomorphism, and it is known that the host species affect the morphometrics of some non-host specific trypanosomes (Woo and Black, 1984). Therefore, species determination based only on morphological characters and occurrence in a new host without ascertainment of pleomorphism and cross infectivity is considered insufficient (Misra et al., 1973; Joshi, 1978).

No trypanosome has been reported from freshwater fishes in Korea. In the present study, we report *Trypanosoma* sp. from Korean catfish, *Silurus asotus*, for the first time in Korea. The species identification was reserved until elucidating the pleomorphism and

the cross infectivity.

One specimen of *S. asotus* (total length: 21.9 cm) was collected from Hyungsangang (River) in June 1998. Fish was killed in aqueous MS-222, and blood was collected in heparinized syringes from the caudal vein and smeared on slides. Internal organs including kidney, spleen and liver were aseptically excised, cross-sectioned in half, and smeared on slides. Smears were air-dried, fixed in 100% methanol, and stained with May Grunwald Giemsa. Specimens were measured with an ocular micrometer, and drawings were made with the aid of a camera lucida. Measurements, unless otherwise stated, are in micrometers, and are given as mean value with the range in parentheses. The description was based on 30 well-stained specimens.

Body length (PA, not including free flagellum) 30.3 (26-33); body slender, C- or S-shaped in stained preparations. Body width (BW) 2.2 (2.0-2.4); mean ratio of BW by PA 0.07 ± 0.01 . Cytoplasm stained as intense blue without granules or myonemes. Posterior extremity attenuated. Subterminal kinetoplast spherical; distance from posterior extremity to kinetoplast (PK) 1.0 (0.8-1.2); PK/PA = 0.03 ± 0.01 . Nucleus oval, located slightly anterior to center of body, 2.1 (1.7-2.5) long

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Fig. 1. Photograph of *Trypanosoma* sp. in the peripheral blood of *Silurus asotus*. May Grunwald Giemsa stain.

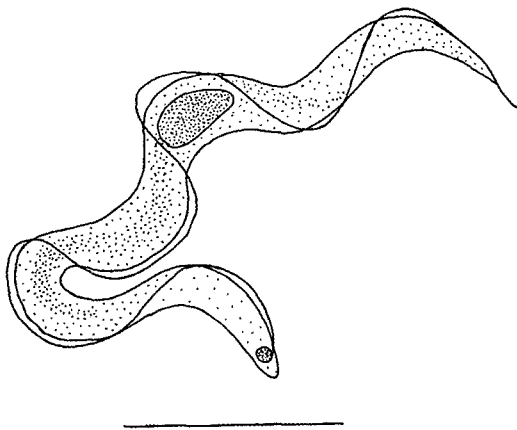


Fig. 2. *Trypanosoma* sp. in the peripheral blood of *Silurus asotus*. Bar scale: 10 μ m.

by 1.8 (1.4-2.3) wide; NA (distance from center of nucleus to anterior extremity)/PA=0.45 \pm 0.01. Free flagellum relatively short, 3.8 (3.0-4.5) long; AF (length of free flagellum)/PA=0.03 \pm 0.01. Undulating membrane narrow.

Host: *Silurus asotus*

Locality: Hyungsangang (River) (June, 1998)

Location in host: Blood (peripheral and tissues)

Specimens deposition: PKNU (Pukyong National University)
Protozoa Collection

The morphological characteristics of *Trypanosoma* sp. described in the present study were similar with those of *T. carassii*, *T. tincae* and *T. danilewskyi* based on the body shape and size. However, the length of free flagellum of *Trypanosoma* sp. was obviously shorter than that of those species. During the course of infection, most fish trypanosomes display successive forms differing conspicuously in their shape and size (Lom and Dykova, 1992). Therefore, depending on the phase of infection at which the fish is examined, one can find only a certain stage of forms. As the pleomorphism according to the phase of infection and the cross infectivity among other fish species had not been investigated in this study, we couldn't draw a definite conclusion on the species identity of the present specimens. Further studies are needed to be carried out to elucidate the Korean piscine trypanosomes.

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