1.3.2 Pseudokidney Disease

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A. Name of Disease and Etiological Agent

Pseudokidney disease is caused by *Carnobacterium piscicola* (formerly classified as *Lactobacillus piscicola*).

B. Known Geographical Range and Host Species of the Disease

1. Geographical Range

It is found in the United States, Canada, and United Kingdom. Possibly worldwide distribution because lactic acid bacteria are part of the normal oral and gut flora of animals.

2. Host Species

Reported isolations from coho *Oncorhynchus kisutch* and chinook salmon *Oncorhynchus tshawytscha*, rainbow trout *Oncorhynchus mykiss*, and cutthroat trout *Oncorhynchus clarki*. Potentially all freshwater and marine fish may be susceptible under stressful conditions.

C. Epizootiology

Epizootics have occurred in fish one year and older and especially in broodstock following the stress of spawning.

The reservoirs of the infection are unknown.

D. Disease Signs

External signs include abdominal distension, erythema at the base of fins, and sub-dermal blood blisters. Internally, there may be enlargement of the liver, spleen, and kidney. Ascitic fluid in the peritoneal cavity is common. Hemorrhages may be present in the testes, intestine, and muscle. A grey pseudomembrane resembling that seen in some BKD infections has been reported.

E. Disease Diagnostic Procedures

Along with the clinical signs, diagnosis is based on isolation and identification of the etiological agent. Primary isolation should be made from kidney or lesion on either TSA or BHIA cultured aerobically at 15 to 24°C for 24 to 72 hours.

1. **Presumptive Diagnosis**
   Colonies are pinpoint, opaque, entire, circular, and nonpigmented when grown on TSA. The organism is a nonmotile, non-sporeforming, non-acid fast, facultatively anaerobic, gram-positive rods or coccobacillus of 1.1 to 1.4 x 0.5 to 0.6 μm in size. Older cultures become gram variable. Other phenotypic traits include negative results for oxidase, catalase, urease, H_2S, nitrite reduction, and lactose and xylose fermentation. The organism shows positive reactions for arginine dihydrolase and lactic acid production from glucose (no gas), maltose, mannitol, and sucrose.

2. **Confirmatory Diagnosis**
   Additional tests can be done to show that the isolate is phenotypically identical or very similar to the type strain B270, ATCC 35586 (Hiu et al. 1984).

F. Procedures for Detecting Subclinical Infection

No procedures have been reported.

G. Procedures for Determining Prior Exposure to Etiological Agent

No procedures have been reported.

H. Procedures for Transportation and Storage of Samples to Ensure Maximum Viability and Survival of the Etiological Agent

See Section 1, 1.1.1 General Sampling Procedures for Bacteria.

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