

## VIBRIO DAMSELA AS A PATHOGENIC AGENT CAUSING MORTALITIES IN CULTURED SEA BASS (*LATES CALCARIFER*)

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*Vibrio anguillarum* and *Vibrio ordali* are species frequently described as fish pathogens. Seven species of *Vibrio* can also be implicated in disease problems in mariculture (Toranzo and Barja, 1990). In addition, some of these marine Vibrios such as *V. vulnificus* (Tison *et al.*, 1982) and *V. damsela* (Love *et al.*, 1981) can also cause illness in homoiothermic animals.

*V. damsela* was first described from skin ulcers of *Chromis punctipinnis* (Love *et al.*, 1981). This *Vibrio* has also been isolated from sharks (Grimes *et al.*, 1984) and yellow-tail *Seriola quinqueradiata* (Sakata *et al.*, 1989). In addition, this *Vibrio* species has recently been considered as the causative agent of mortalities in turbot, *Scophthalmus maximus* (Fouz *et al.*, 1991) and in seabream, *Sparus aurata* (Vera *et al.*, 1991) in Spain.

This study reports the isolation and biochemical characterisation of *V. damsela* from a new type of vibriosis oc-

curred in juvenile cultured sea bass, *Lates calcarifer*, in Ifremer's Pacific Oceanological Centre (Tahiti) nursery.

The main clinical signs of affected moribund fish were lethargy, haemorrhages at the base of the tail and extensive ulcerative lesions (Fig. 1). The fish losses were up to

**Table I:** Biochemical properties of *V. damsela* present isolate compared with reference strains.

Characters	<i>V. damsela</i> present isolate	<i>V. damsela</i> ATCC 33 539	<i>V. damsela</i> CDC 2227 - 81
Mobility	+	+	+
O/F Leifson	F	F	F
Gram stain	-	-	-
Oxidase	+	+	+
Indole	-	-	-
Citrate	-	-	-
H <sub>2</sub> S	-	-	-
ONPG	-	-	-
Urease	+	+	+
Gelatinase	-	-	-
Growth in TCBS	+(G)	+(G)	+(G)
0% NaCl	-	-	-
Sensitivity to O129	S	S	S
Arginine dihydrogenase	+	+	+
Lysine decarboxylase	+	+	(+)
Ornithine decarboxylase	-	-	-
Voges-Proskauer	+	+	+
Acid from:			
Mannitol	-	-	-
Arabinose	-	-	-
Sorbitol	NF	-	-
Glucose	+	+	+
Rhamnose	-	-	-
Sucrose	-	-	-
Inositol	NF	-	-

S = Sensitive strain; (G) = green colonies; F = fermentative.



**Figure 1:** juvenile sea bass, *Lates calcarifer*, showing haemorrhages at the base of the fins and tail and extensive ulcerative skin lesions.

1% in 24 h.

For bacterial isolation, samples were taken from kidney and brain of moribund fish and cultured on ZoBell agar in Lewis water and on Thiosulphate Citrate Bile Salt agar (TCBS) (Difco). Pure cultures of the isolated bacteria were identified taxonomically using standard morphological, physiological and biochemical plate and tube tests as well as API 10E. And bacterial identification was made following the scheme of Baumann and Schubert (1984). The reactions were compared with the reference strains *V. damsela* isolated from damselfish (*V. damsela* ATCC 33539) and from humans (*V. damsela* CDC - 2227 - 81). The bacterial isolate from sea bass was a gram-negative rod, motile, oxidase positive, fermentative and produced green colonies on TCBS agar. In addition, this *Vibrio* strain failed to produce gelatinase activity, but it was urease positive and sensitive to the vibriostatic

agent, O129. Table 1 shows the main biochemical characteristics of the bacteria. The phenotypic traits are characteristics of the reference strains of *V. damsela*.

The purpose of this brief publication is to describe the first isolation of *V. damsela* from cultured sea bass. Future studies on virulence and serological characteristics of this agent of vibriosis in comparison with reference strains could precise the nature of the bacteria.

#### Summary

*Vibrio damsela* has been isolated from kidney of juvenile sea bass, *Lates calcarifer*. The main symptom of affected fish was extensive ulcerative lesions.

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