

3.A2 Profiles Obtained with API-20E for Known Fish Pathogens

The following table represents API20E profiles for *Yersinia ruckeri* when cultures were tested at 22°C rather than the manufacturer's recommended incubation temperature of 35 to 37°C. All isolates listed tested appropriately with the standard biochemical media and confirmed serologically by FAT. Based on the profile submitted to API, bacterial identification is given in order of probability, then remarks as to the likelihood of the profile are provided when profiles are poorly matched to the manufacturer's database (National Wild Fish Health Survey Lab Procedures Manual, USFWS).

Bacterial Isolate ID	API PROFILE*	API Manual or Computer Identification
1. Eastern Fishery Disease Laboratory (EFDL) Positive Control #1- Type II (11.29) 2. Nisqually Fall chinook (3/88)	5307500	1. <i>Serratia marcescens</i> 2. <i>Serratia liquefaciens</i> 3. <i>Hafnia alvei</i>
1. Eastern Fishery Disease Laboratory (EFDL) Positive Control #2- Type II (11.29) 2. Fall Chinook, Suquamish R, WA (3/88) 3. Spring Chinook, Skookum Creek, WA (2/88)	5107500	(Same ID as 5307500 above) 1. <i>Serratia marcescens</i> 2. <i>Serratia liquefaciens</i> 3. <i>Hafnia alvei</i>
Unknown source – Isolate confirmed by biochemical and serological testing.	5144100	1. <i>Escherichia coli</i> 2. <i>Yersinia ruckeri</i>
Eastern Fishery Disease Laboratory (EFDL) Positive Control - Type I (11.4)	5107100	“Unacceptable profile”
Coho, Quinault River, WA	5106100	“Questionable ID”
Late Fall Chinook, Battle Creek, CA (11/94)	5105100	“Acceptable ID” 1. <i>Hafnia alvei</i>
Notes from ERM archived files – previous testing	5104500	“Questionable ID”

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Bacterial Isolate ID	API PROFILE*	API Manual or Computer Identification
1. Hagerman – Type I (11.4)	5104100	“Very good ID” 1. <i>Yersinia ruckeri</i>
Coho, Quilcene R., WA (11/88)	5104000	“Very good ID” 1. <i>Yersinia ruckeri</i>
Unknown source	5100100	“Excellent ID” 1. <i>Yersinia ruckeri</i>
Unknown source	4105100	1. <i>Hafnia alvei</i>
Unknown source	4104100	1. <i>Yersinia ruckeri</i> 2. <i>Salmonella gallinarum</i>
Unknown source	4104000	“Acceptable ID” 1. <i>Yersinia ruckeri</i>
Unknown source	0104100	“Acceptable ID” 1. <i>Yersinia ruckeri</i>

* *Yersinia ruckeri* generally fails to produce a positive citrate reaction when incubated at room temperature (22 to 25°C). Refer to the API Manual for specific biochemical tests and interpretation of API20E™ profiles. Also see references listed on page 5-27.

3.A2 Profiles Obtained with API-20E for Known Fish Pathogens - 3

The following represents API20E profiles for *Aeromonas salmonicida* isolates following manufacturer's instructions but incubating test strips at room temperature (22°C). All isolates listed tested appropriately with the standard biochemical media and confirmed serologically by FAT.

Bacterial Isolate ID (collection date)	API PROFILE*	Computer/Manual ID
spp not identified, Makah NFH, WA (8/88)	0006104	“Acceptable ID” 1. <i>Pseudomonas pseudomaleae</i>
Winter Steelhead, Makah NFH, WA (1/89) Chum, Makah NFH, WA (12/89)	0006104	Same as above
Winter Steelhead, Quinault NFH, WA (1/89)	0006104	Same as above
Spring Chinook, Entiat NFH, WA (8/89)	0006104	Same as above
Spring Chinook, Quilcene NFH, WA (3/91)	2006104	1. <i>Aeromonas salmonicida</i>
Profiles given in API MANUAL for <i>Aeromonas salmonicida</i>	6006104 6006504 4006104 2006104	“Good to Excellent ID” 1. <i>Aeromonas salmonicida</i>

**Aeromonas salmonicida* generally fails to produce positive relations for ONPG, ADH, and LDC when incubated at room temperature (22 to 25° C).

Profiles provided in the API Manual are based on positive reactions for some or all of these first three biochemical tests, therefore the first digit of the “acceptable” profiles for *A. salmonicida* include the values 2,4, or 6. More often, a zero value is obtained after 24 to 48 hours incubation at room temperature. Longer incubation periods are required for these tests.

References

- Romalde, J. L., and A. E. Toranzo. 1991. Evaluation of the API-20E system for the routine identification of the enteric redmouth disease. *Bulletin of European Association of Fish Pathologists* 11(4), 147.
- Kent, M. L. 1982. Characteristics and identification of *Pasteurella* and *Vibrio* species pathogenic to fishes using API-20E (Analytab Products) multitube test strips. *Canadian Journal of Fisheries and Aquatic Sciences* 39:1725-1729.
- Toranzo, A. E., Y.Santos, T. P. Nieto, and J. L. Barja. 1986. Evaluation of different assay systems for identification of environmental *Aeromonas* strains. *Applied Environmental Microbiology* 51:652-656.