

Approved Vaccines for Use in Aquaculture



AFS-Fish Culture Section



AFS-Fish Health Section



General Recommendations

- Vaccinate only healthy fish
- If accidental injection of human occurs, immediately seek medical advice
- Shake well before using
- Store product at temperature indicated on the label
- Use entire contents when first opened
- Follow label recommendations
- Seek professional advice regarding appropriate vaccine use before application
- Vaccination is one component of a complete fish health program

True Name: *Aeromonas Salmonicida* Bacterin

Trade Name: Furogen Dip

Uses: aids in prevention of furunculosis in salmonids, 2 g or larger, caused by *Aeromonas salmonicida*

Dose and administration: Each liter of bacterin is sufficient to vaccinate 100kg of fish; Add 1 liter of bacterin to 9 liters of clean hatchery water to make a 10 liter vaccine bath. Aerate the bath. Net, drain, and immerse 5 kg batches of fish in the bath for 60 seconds. The bath may be reused up to 20 times before discarding

Permittee: Novartis Animal Health US, Inc, Larchwood, Iowa 51241 U.S. Vet. Permit No. 303A

Precautions: Withhold food from fish for 24 hours prior to vaccination; do not vaccinate within 21 days of slaughter.

True Name: *Aeromonas Salmonicida-Vibrio Anguillarum-Ordalii-Salmonicida* Bacterin

Trade Name: Lipogen Forte

Uses: aids in prevention of furunculosis, vibriosis, and cold water vibriosis in salmonids 10 g or larger

Dose and administration: Anaesthetize fish to immobilize and administer a 0.1 mL injection intraperitoneally, one fin length ahead of the pelvic fins along the ventral midline of each fish. Warming vaccine to room temperature may facilitate injection

Permittee: Novartis Animal Health, US, Inc., Larchwood Iowa 51241 U.S. Vet. Permit No. 303A

Precautions: Withhold food from fish for 48 hours prior to vaccination; do not vaccinate within 60 days of slaughter

True Name: *Arthrobacter* Vaccine, Live Culture

Trade Name: Renogen

Use: aid in prevention of Bacterial Kidney Disease caused by *Renibacterium salmoninarum* in healthy salmonids 10g or larger

Dose and Administration: Anaesthetize fish until immobilized and then administer 0.1 mL of the resuspended vaccine intraperitoneally along the midline, one fin length ahead of the pelvic fins. It is recommended that a minimum period of 400 degree days is allowed before exposure to disease occurs.

Permittee: Novartis Animal Health US, Inc., Larchwood, Iowa 51241, U.S. Vet. Permit No. 303A

Precautions: Do not vaccinate fish within 60 days of slaughter; do not administer antimicrobial drugs 14 days before or after vaccination; it is recommended that oxytetracycline not be administered 6 weeks before or after vaccination; diagnostic kits which employ the use of polyclonal antiserum against *Renibacterium salmoninarum* should not be used to screen fish vaccinated with product for at least 4 weeks after vaccination, since kidney samples from vaccinated fish will yield positive test results, vaccination should precede exposure by at least 400 degree days.

True Name: Infectious Salmon Anemia Virus Vaccine, *Aeromonas Salmonicida-Vibrio Anguillarum-Ordalii-Salmonicida* Bacterin, Killed Virus

Trade Name: Forte V1

Uses: aids in prevention of Infectious Salmon Anemia, furunculosis, vibriosis, and cold water vibriosis in salmonids 30 g or larger

Dose and administration: Anesthetize fish to immobilize and administer a 0.15 mL injection intraperitoneally, one fin length ahead of the pelvic fins along the ventral midline of each fish. Warming the vaccine to room temperature may facilitate injection.

Permittee: Novartis Animal Health, US, Inc., Larchwood Iowa 51241, U.S. Vet Permit No. 303A

Precautions: Withhold food from fish 48 hours prior to vaccination, do not vaccinate within 60 days of slaughter; do not vaccinate fish during the period of smoltification; oil adjuvanted vaccines administered by intraperitoneal injection in fish may cause visceral adhesions; this vaccine is intended to be used in young fish stock, the effects of vaccination of broodstock has not been determined; during vaccination, the water temperature of the holding tanks should be between 2 and 12 °C; it is recommended that vaccination precede exposure by at least 800 degree days.

True Name: *Yersinia Ruckeri* Bacterin

Trade Name: Ermogen

Uses: aids in prevention of enteric redmouth disease, caused by *Yersinia ruckeri* serotype 1 in healthy salmonids, 2 g or larger

Dose and administration: Each liter is sufficient to vaccinate 100 kg of fish. Add one liter of bacterin to 9 liters of clean hatchery water to make a 10 liter vaccine bath. Net, drain, and immerse 5 kg batches of fish in the bath for 30 seconds. The bath may be reused up to 20 times before discarding.

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Precautions: Vaccination should precede exposure by at least 250 degree days, withhold food from fish 24 hours prior to vaccination; do not vaccinate within 21 days of slaughter

True Name: *Flavobacterium Columnare* Bacterin

Trade Name: FryVacc1

Uses: aids in prevention of columnaris disease caused by *Flavobacterium columnare* in healthy salmonids 3 g or larger

Dose and administration: For immersion delivery, dilute entire contents of 1000 ml container with 9 liters clean hatchery water. Measure diluted bacterin in a suitable plastic container. Add fish to attain a density of 500 g per liter of diluted bacterin. Expose fish for 30 seconds then drain bacterin from fish. Return fish to holding facility. Repeat until a total of 20 groups have been vaccinated in this manner.

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Precautions: Do not vaccinate within 21 days of slaughter

True Name: *Vibrio Anguillarum-Ordalii* Bacterin

Trade Name: Vibrogen 2

Uses: aids in prevention of vibriosis caused by *Vibrio anguillarum* serotypes I and II and *Vibrio ordalii* in healthy salmonids 2 g or larger

Dose and administration: For immersion vaccination, each liter of bacterin is sufficient to vaccinate 100 kg of fish. To use, add 1 liter of bacterin to 9 liters of clean hatchery water to make a 10 liter vaccine bath. Net, drain, and immerse 5 kg batches of fish in the bath for 30 seconds. The bath may be reused up to 20 times before discarding.

For injection vaccination, anaesthetize fish ≥10 g in size to immobilize, and administer a 0.1 ml injection of undiluted bacterin intraperitoneally, one fin length ahead of the pelvic fins along the ventral midline of each fish.

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Precautions: Do not vaccinate within 21 days of slaughter, withhold food from fish 48 hours prior to vaccination

True Name: *Flavobacterium Columnare* Vaccine, Avirulent Live Culture

Trade Name: AQUAVAC-COL

Uses: aids in prevention of columnaris disease due to *Flavobacterium columnare* infection in healthy catfish at least 7 days of age

Dose and administration: One vial is sufficient to vaccinate 7.5 pounds of catfish in 5 gallons of water. When applied to fry at 7 days of age post hatch (average size of 13,000 catfish per pound or 29 catfish per gram or 812 catfish per ounce), each vial of vaccine is sufficient to vaccinate 100,000 fry in 5 gallons of water. When vaccinating catfish older than 7 days post hatch, each 10-pack of vaccine is sufficient to vaccinate 75 pounds of catfish in 50 gallons of water. See package insert for additional information.

Licensee: Intervet, Inc., Omaha, Nebraska 68103, U.S. Est. No. 165A

Precautions: Do not vaccinate within 21 days of slaughter, withhold food from fish 48 hours prior to vaccination, vaccination not recommended when water temperatures are below 21 °C (70 °F) or above 29 °C (85 °F)

Number of 7-day post-hatch fry to be vaccinated as a single group (x 1,000)	200	400	600	800	1,000
Vials of vaccine	2	4	6	8	10
Gallons of water	10	20	30	40	50

Pounds of catfish, 7 days and older, to be vaccinated as a single group	15	30	45	60	75
Vials of vaccine	2	4	6	8	10
Gallons of water	10	20	30	40	50

True Name: *Edwardsiella Ictaluri* Vaccine, Avirulent Live Culture

Trade Name: AQUAVAC-ESC

Uses: prevention of ESC (enteric septicemia of catfish) disease due to *Edwardsiella ictaluri* infection

Dose and administration: Each vial is sufficient to vaccinate 7.5 pounds of catfish in 5 gallons of water. When applied to fry at 7 days of age post hatch (average size of 13,000 catfish per pound or 29 catfish/gram or 812 catfish per ounce), each vial of vaccine is sufficient to vaccinate 100,000 fry in 5 gallons of water. When vaccinating catfish older than 7 days post hatch, each ten-pack of vaccine is sufficient to vaccinate 75 pounds of catfish in 50 gallons of water. See package insert for additional information.

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