CLAIMS

1. Bacterial strain or combination of bacterial strains for use as a probiotic in fish(es), wherein the bacterial strain or at least one bacterial strain of the combination is selected from the group consisting of:
    a. a Chryseobacterium massiliae strain identified by Accession Number No. I-5479 deposited at the CNCM on January 24, 2020,
    b. a Chryseobacterium massiliae strain which has a genome that has at least 95% or more Average Nucleotide Identity (ANI) with Chryseobacterium massiliae strain identified by Accession Number No. I-5479 deposited at the CNCM on January 24, 2020
    c. a Flavobacterium sp. strain identified by Accession Number No. I-5481 deposited at the CNCM on January 24, 2020, and
    d. a Flavobacterium sp. strain which has a genome that has at least 95% or more Average Nucleotide Identity (ANI) with the Flavobacterium sp. strain identified by Accession Number No. I-5481 deposited at the CNCM on January 24, 2020,

2. Bacterial strain or combination of bacterial strains for use as a probiotic in fish(es) according to claim 1, wherein:
    a. when only one bacterial strain is used, said bacterial strain is administered to a fish in need thereof without acceptable carrier or delivery vehicle(s), or within a composition, or
    b. when a combination of distinct bacterial strains is used, said bacterial strains are administered to a fish in need thereof:
        i. as separate bacterial strains without acceptable carrier or delivery vehicle(s), or
        ii. as a mixture of distinct bacterial strains found within a single composition, or
        iii. within distinct compositions each comprising at least one bacterial strain, or
        iv. as a collocation of at least one individualized bacterial strain and distinct composition(s) each comprising at least one bacterial strain, and

    when a combination of distinct bacterial strains is used, said bacterial strains are administered to a host in need thereof simultaneously or separately in any order, or sequentially in any order.

3. Bacterial strain or combination of bacterial strains for use as a probiotic in fish(es) according to any one of claims 1 to 2, wherein bacterial strain(s) is(are) selected from bacterial strain(s):

- Whose genome has at least 96% or more Average Nucleotide Identity (ANI) with SEQ ID NO:2 or which have at least 96% ANI with the *Chryseobacterium massiliae* strain identified by Accession Number No. I-5479 deposited at the CNCM on January 24, 2020, and/or whose genome has at least 96% or more Average Nucleotide Identity (ANI) with SEQ ID NO:1 or which have at least 96% ANI with the *Flavobacterium sp.* strain identified by Accession Number No. I-5481 deposited at the CNCM on January 24, 2020, respectively, and/or
- That comprise(s) a 16s rDNA sequence with at least 97%sequence identity to a 16s rDNA sequence present in a *Chryseobacterium massiliae* strain whose genome comprises SEQ ID NO:2 or a strain identified by Accession Number No. I-5479 deposited at the CNCM on January 24, 2020, or a *Flavobacterium. sp* strain whose genome comprises SEQ ID NO:1 or a strain identified by Accession Number No. I-5481 deposited at the CNCM on January 24, 2020, respectively, and/or
- Which is(are) from the group consisting of: a *Chryseobacterium massiliae* strain whose genome comprises SEQ ID NO:2 or a strain identified by Accession Number No. I-5479 deposited at the CNCM on January 24, 2020, and a *Flavobacterium sp.* strain whose genome comprises SEQ ID NO:1 or a strain identified by Accession Number No. I-5481 deposited at the CNCM on January 24, 2020, and/or
- Which is (are) variants of any one of these strains, wherein one or more virulence factor coding gene(s) and/or antibiotic resistance genes is(are) deleted or inactivated.

4. Bacterial strain or combination of bacterial strains for use as a probiotic in fish(es) according to any one of claims 1 to 3, wherein the at least one bacterial strain(s) is(are) administered to:
    a. a host that is a teleostean fish, or
    b. hosts comprising or consisting essentially of or consisting of homogenous or mixed population(s) of fishes.

5. Bacterial strain or combination of bacterial strains for use as a probiotic in fish(es) according to any one of claims 1 to 4, wherein the combination additionally comprises at least one another bacterial strain of the indigenous microbiota of the treated fish species.

6. Bacterial strain or combination of bacterial strains for use as a probiotic in fish(es) according to any one of claims 1 to 5, wherein a composition consists essentially of, or consists of, at least one bacterial strain and an acceptable carrier or delivery vehicle(s).

7. Bacterial strain or combination of bacterial strains for use according to any one of claims 1 to 6, in a method of:

a. preventing or minimizing infections by *Flavobacterium columnare* in the host fish or treated population of host fishes, or enhancing the resistance against *Flavobacterium columnare* of the treated host fish or treated population of host fishes and/or

b. preventing or controlling diseases, notably caused by *Flavobacterium columnare* pathogen infections, in the treated fish species or treated population of host fishes, and/or

c. increasing the lifespan of treated host fish or population of treated host fishes, or reducing the mortality of treated host fish or population of treated host fishes.

8. Bacterial strain or combination of bacterial strains for use according to any one of claims 1 to 7 against infections caused by a *Flavobacterium columnare* pathogen or diseases caused by infections due to a *Flavobacterium columnare* pathogen.

9. Bacterial strain or combination of bacterial strains for use according to claim 8, wherein the disease is the columnaris disease.

10. Bacterial strain or combination of bacterial strains for use according to any one of claims 1 to 9, wherein the at least one bacterial strain(s) is(are) administered to a teleostean fish or a population encompassing a teleostean fish in aquaculture settings or fish husbandry settings.

11. Bacterial strain or combination of bacterial strains for use according to any one of claims 1 to 10, wherein the teleostean fish is selected amongst: eels (*Anguilla sp*.), salmonids (*Oncorhynchus sp. and salmo sp*.), tilapia (*Oreochromis sp.),* hybrid-striped bass (*Morone chrysops x M. saxatilis*), walleye (*Stitzostedion vitreum*), channel catfish, cetrachids (such as largemouth bass (*Micropterus salmoides*)), bait minnows (*Pimephales promelas*), goldfish (*Carassisu auratus*), carp (*Cyprinus carplo*) and aquarium fish (tropical fish species such as black mollies (*Poecilia sphenops*)) and platies (*Xiphophorus maculatus*).

12. Bacterial strain or combination of bacterial strains for use according to any one of claims 1 to 10, in a method of preventing or mitigating a rainbow trout fish disease in aquaculture settings or fish husbandry settings where a pathogen has been detected in the aquaculture settings or fish husbandry settings.

13. Bacterial strain or combination of bacterial strains for use according to claim 12, wherein the pathogen is *Flavobacterium columnare* and the disease is columnaris disease.

14. Bacterial strain or combination of bacterial strains for use according to any one of claims 1 to 13, in a method of treating a fish wherein the bacterial strain(s) or combination of bacterial strains is(are) introduced into the fish environment, or introduced into the fish commensal microbial community by administration of encapsulated bacterial strain or combinations thereof.

15. Bacterial strain or combination of bacterial strains for use according to any one of claims 1 to 14, wherein the bacterial strain(s) or combination of bacterial strains is(are) administered to a host in need thereof in a dosage ranging from, or equivalent to, $5x10^4$ cfu/mL to $5x10^6$ cfu/mL of bacterial strain(s).

16. Probiotic composition or food product comprising at least one bacterial strain selected from the group consisting of:
    a. a *Chryseobacterium massiliae* strain identified by Accession Number No. I-5479 deposited at the CNCM on January 24, 2020,
    b. a Chryseobacterium massiliae strain which has a genome that has at least 95% or more Average Nucleotide Identity (ANI) with the Chryseobacterium massiliae strain identified by Accession Number No. I-5479 deposited at the CNCM on January 24, 2020,
    c. *a Flavobacterium sp.* strain identified by Accession Number No. I-5481 deposited at the CNCM on January 24, 2020,
    d. a *Flavobacterium sp.* strain which has at least 95% or more Average Nucleotide Identity (ANI) value with the *Flavobacterium sp.* strain identified by Accession Number No. I-5481 deposited at the CNCM on January 24, 2020.

17. Probiotic composition or food product according to claim 16, wherein the at least one bacterial strain is as defined in claim 3.

18. Probiotic composition or food product according to claim 17, wherein the at least one bacterial strain is an encapsulated bacterial strain.

19. Probiotic compositions or food product as defined in any one of claims 16 to 18, for use according to any one of claims 1 to 15.

20. Bacterial strain selected from the group consisting of:
    a. a *Chryseobacterium massiliae* strain identified by Accession Number No. I-5479 deposited at the CNCM on January 24, 2020,

b. a Chryseobacterium massiliae strain which has a genome that has at least 95% or more Average Nucleotide Identity (ANI) with the Chryseobacterium massiliae strain identified by Accession Number No. I-5479 deposited at the CNCM on January 24, 2020,

c. a *Flavobacterium sp.* strain identified by Accession Number No. I-5481 deposited at the CNCM on January 24, 2020,

d. a *Flavobacterium sp.* strain which has at least 95% or more Average Nucleotide Identity (ANI) value with the *Flavobacterium sp.* strain identified by Accession Number No. I-5481 deposited at the CNCM on January 24, 2020.

21. Kit comprising a bacterial strain or a combination of bacterial strains as defined in any one of claims 1 to 15, or a probiotic composition or food product according to any one of claims 16 to 18, and a leaflet of instructions for administration to a fish in need thereof.

22. Method to identify bacterial strain(s) that are probiotic against a pathogen infection, comprising the steps of:

- Providing a germ-free trout model that is susceptible of being infected, with adverse effect on its health condition, by at least one determined pathogen, the latter of which does not infect a conventional trout with adverse effect on its health condition,
- Determining the microbiota of the said conventional trout of step a) and optionally identifying the most represented bacterial strains of said microbiota,
- Exposing the germ-free trout model to the at least one determined pathogen of step a) after reconventionalization of the germ-free trout model through inoculation of the germ-free trout with either the microbiota determined in b) or with the most represented bacterial strain(s) of said microbiota identified in b), when identified,
- Concluding about the probiotic effect of the microbiota or the most represented bacterial strains thereof, inoculated to the reconventionalized germ-free trout model.