

A GUT HEALTH ENHANCER TO IMPROVE RESISTANCE OF AQUATIC FARMED SPECIES AGAINST PATHOGENIC PRESSURE

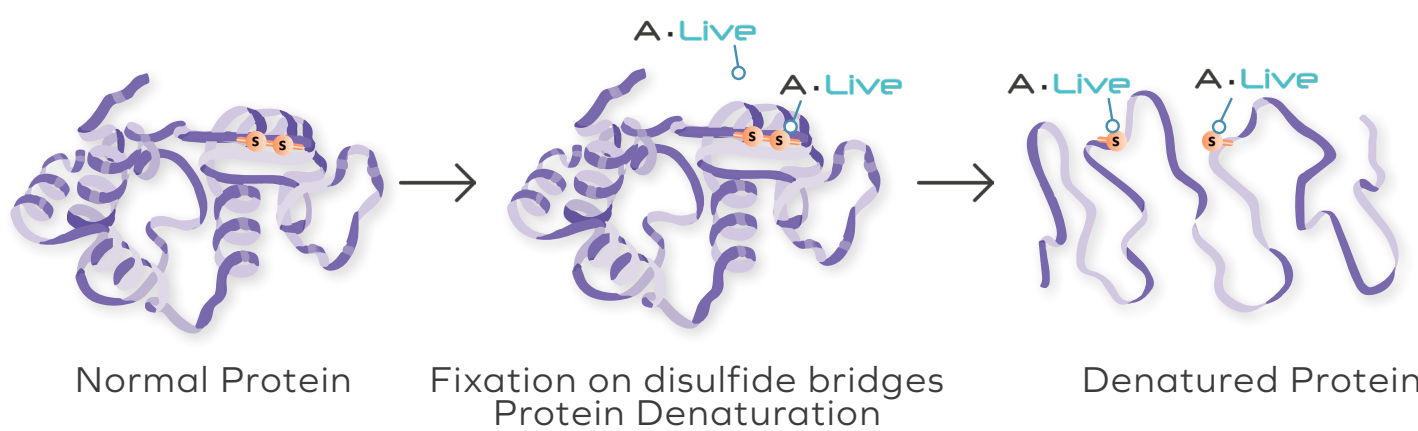
Aquaculture industry is highly challenged by diseases outbreaks, introduction and spread of specific new pathogens, having significant impacts on the economics of the farms and on animal performance. In recent years, chemicals like antibiotics have been chosen as first solutions, but their massive use is now a high public health concern.

In the scope of its sustainable approach, miXscience (France) developed a specific solution called A-Live, based on plant products, with a wide spectra of actions, that helps to control the pathogenic pressure in all aquaculture farming systems.

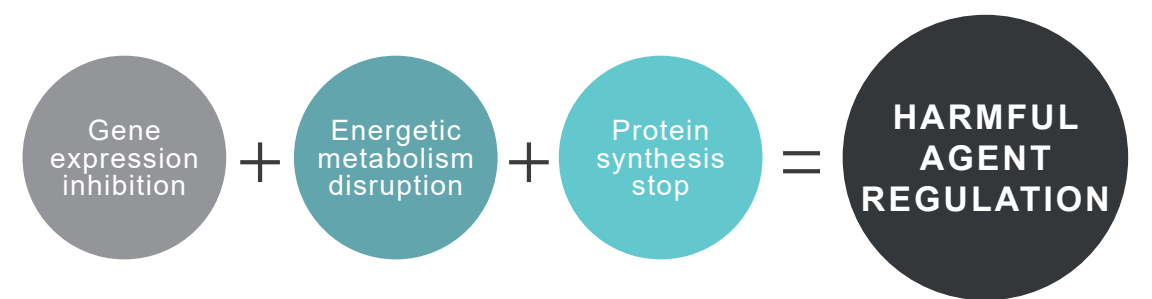
MODES OF ACTIONS

The ubiquitous efficacy of this product is linked to its universal mode of action.

It acts on denaturation of proteins, the main component of microbial pathogens...



... that induces the following cascade effect:



KEY RESULTS FROM LAB TO FIELD

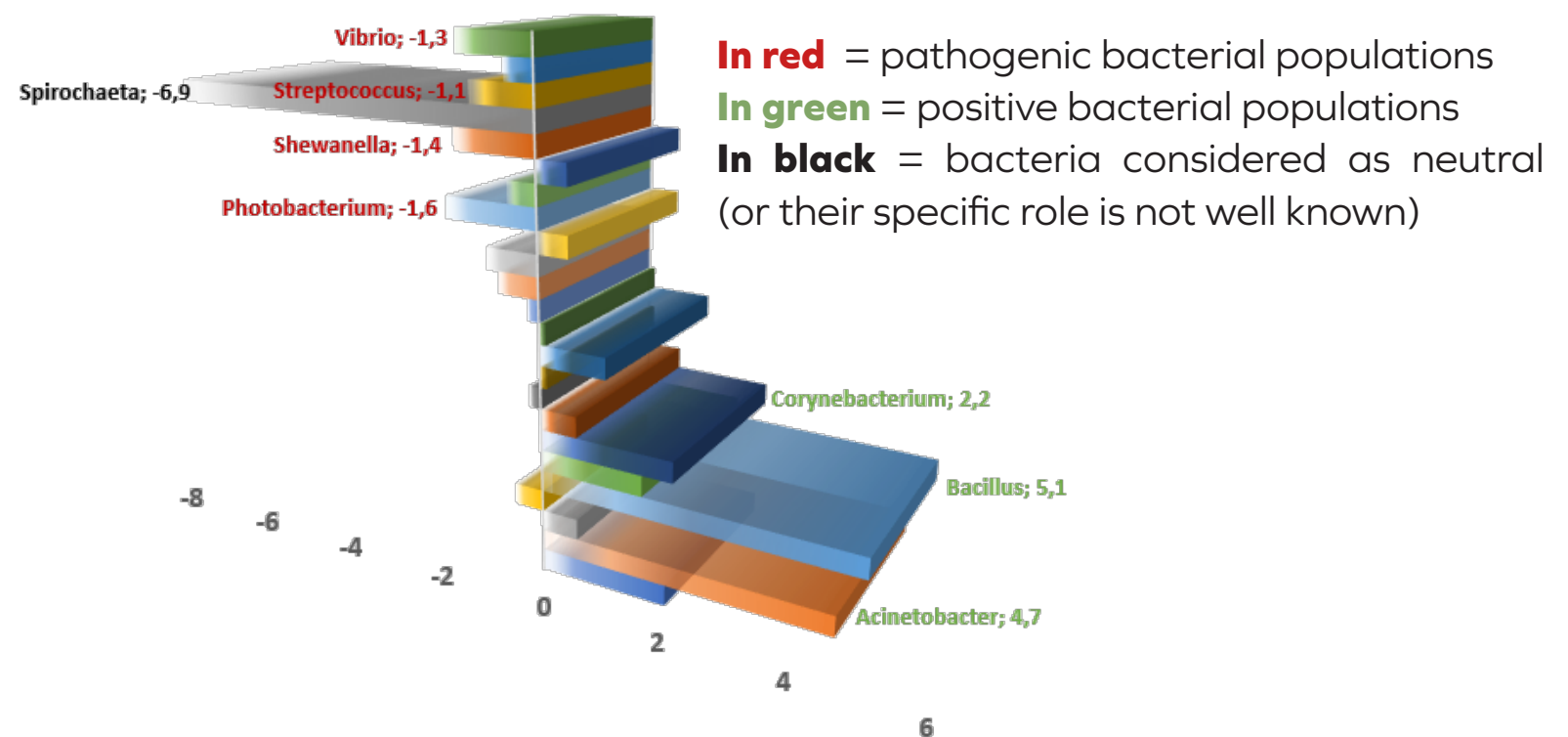
1 - COMPARATIVE INHIBITION OF MICROORGANISMS VISIBLE GROWTH

Internal miXscience trials (2016) based on MIC (ppm)

	A-Live	Competitor A	Competitor B	Competitor C
Aeromonas salmonica	+++	+++	++	-
Edwardsiella tarda	++	-	+	-
Photobacterium damsela	+++	+	-	-
Streptococcus iniae	++	+	-	-
Tenacibaculum maritimum	+++	+++	+++	-
Tenacibaculum discolor	+++	+++	++	-
Vibrio harveyi	+++	-	-	-
Vibrio alginolyticus	++	-	-	-
Vibrio anguillarum	+++	+	-	-
Yersinia ruckeri	+++	-	+	-

2 - EXAMPLE OF THE RELATIVE % OF VARIATION OF THE GUT MICROBIOME OBSERVED IN SEABREAM AFTER 90 DAYS

A-Live vs Control at the end of the trial
External miXscience trials (2019) run in Greece * p<0.05



3 - COMPARISON OF SURVIVAL (%) WITH DIFFERENT AQUATIC SPECIES AND THEIR ASSOCIATED PATHOGENS

Internal miXscience trials from 2016 to 2022 - * p<0.05



AT LAB AND FIELD SCALES, THE PRODUCT:

1 - Regulates a wide range of harmful agents

2 - Positively modulates the gut microflora by increasing its biodiversity and abundance and by reducing the negative populations

3 - Contributes to improve global resistance of different aquatic species under challenging conditions

We concluded that this feed solution provides an efficient control against a large variety of pathogens and could be considered as an universal and sustainable way of reducing the use of antibiotic in aquaculture systems.