AquAdvantage Salmon
Genetically modified organism

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Introduction

AquAdvantage Salmon is a genetically modified organism developed by AquBounty Technologies.
The objective of this transgenic organism is to increase the growth rate to obtain the same of conventional salmon faster.

Figure 1. Differences in growth between AquAdvantage Salmon and conventional during the first three years of life (http://aquabounty.com/).

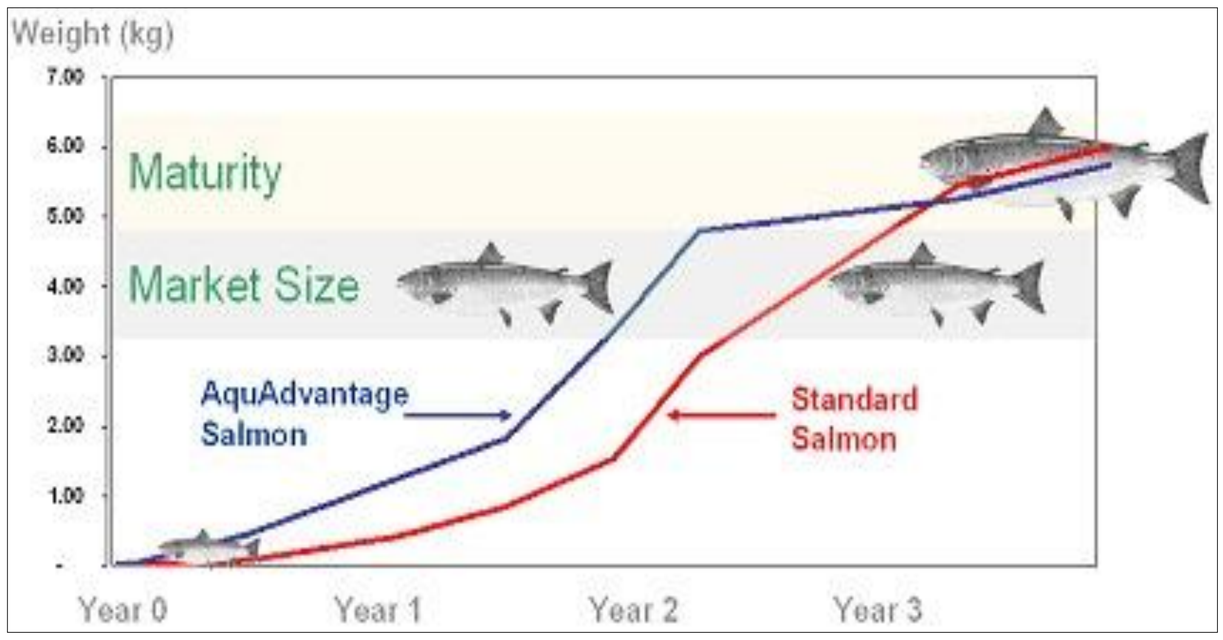


Figure 2. Differences in growth between AquAdvantage Salmon and conventional during the first three years of life (http://singlebarbed.com/2009/02/).

Objectives

• Identify what is the modification and which technique is used to obtain rapid growth to achieve market size.

• Existence of protocols and control strategies for AquAdvantage salmon production.

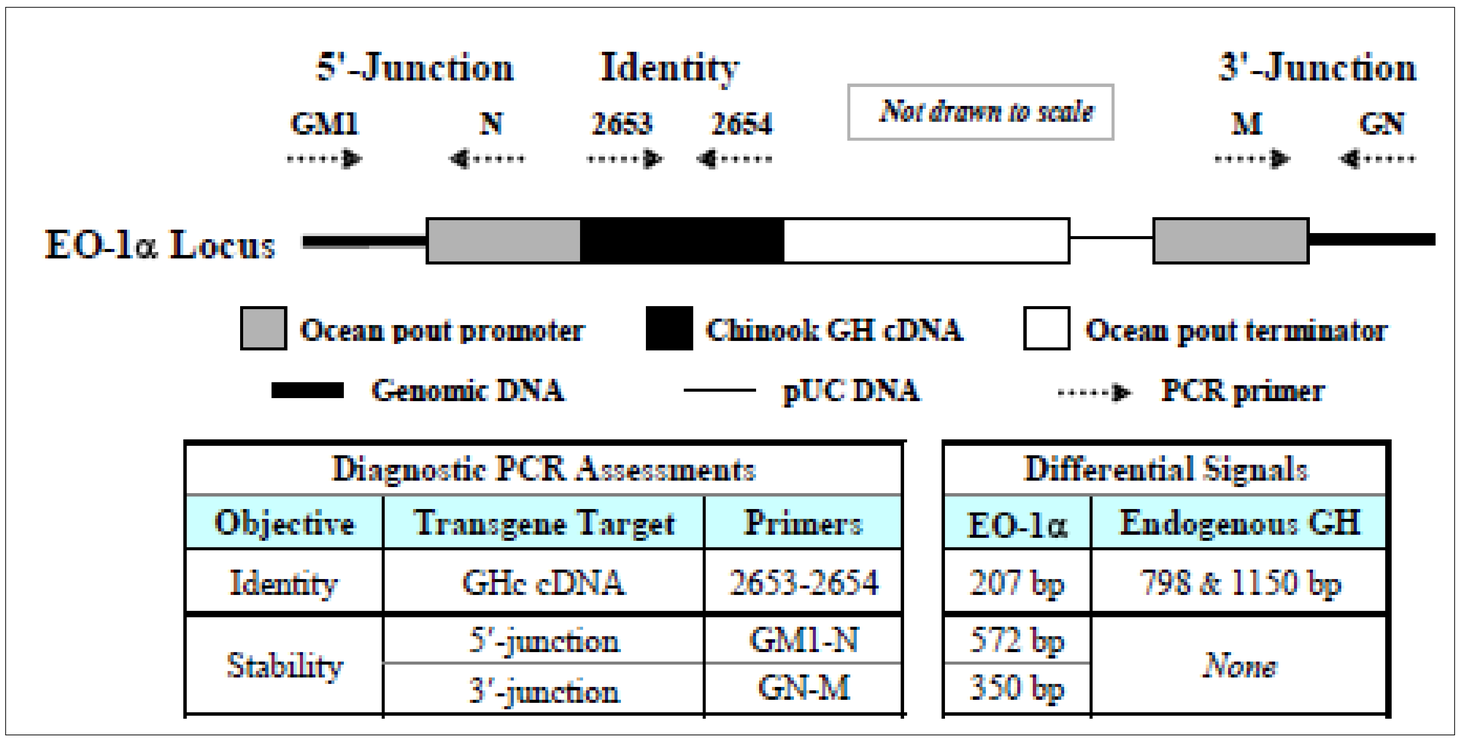
• Risks associated with the product and if it is safe for human consumption.

Conclusions

• Expressing growth hormone controlled by promoter opAFP (opAFP-GHc2) in Atlantic salmon reached rapid growth. We introduce growth hormone gene from a Pacific salmon and a promoter from a *Zoarces americanus* to the genome Atlantic salmon. These genes enable it to grow all year instead of only during warm months.

• There are established measures to reduce risk environmental impact if any of these organisms escape from their facilities. The control measures to keep all production under control are: physical, geographical and biological.

• It is early to affirm that consumption of modified salmon is safe, because there are still many aspects unclear and need further investigations to decide approve or not this product.



Diagnostic PCR Assessments			Differential Signals	
Objective	Transgene Target	Primers	EO-1α	Endogenous GH
Identity	GHc cDNA	2653-2654	207 bp	798 & 1150 bp
Stability	5'-junction	GM1-N	572 bp	*None*
	3'-junction	GN-M	350 bp	

Figure 3. Physical description of the *cassette* that we insert into genome of Atlantic salmon using a plasmid. Confirmation technique to determine presence or absence of construct opAFP-GHc2 (Anonymous, 2012).

Personal view

In my point of view, AquAdvantage Salmon should be evaluated for possible acceptance as a product for human consumption in a few years, when they have enough evidence about safety by the consumer. It is necessary more investigation about effects than can produce opAFP-GHc2 in human genome (dose, activity levels of growth hormone, etc.). On the other hand, I think if we continue studying this GMO can be an interesting product for our society.