

REPORT NO. PA-9B6J3CAT-RS	PA CASE NO. 1618no22	ORDERED AS Standard Smolt (3 working days)
CASE BIOLOGIST Iselin Karlsen, tel: 45292141	REPORTED ON 25.03.2022	

Company

CLIENT NORGES MILJØ- OG BIOVITENSKAPELIGE UNIVERSITET (NMBU)	SUBMITTED BY Ricardo Tavares Benicio (NORGES MILJØ- OG BIOVITENSKAPELIGE UNIVERSITET (NMBU))	REPORT TO	INVOICE TO NORGES MILJØ- OG BIOVITENSKAPELIGE UNIVERSITET (NMBU) PHARMAQ ANALYTIQ PROJECT ID
		SUBMITTER REF. Group 2	

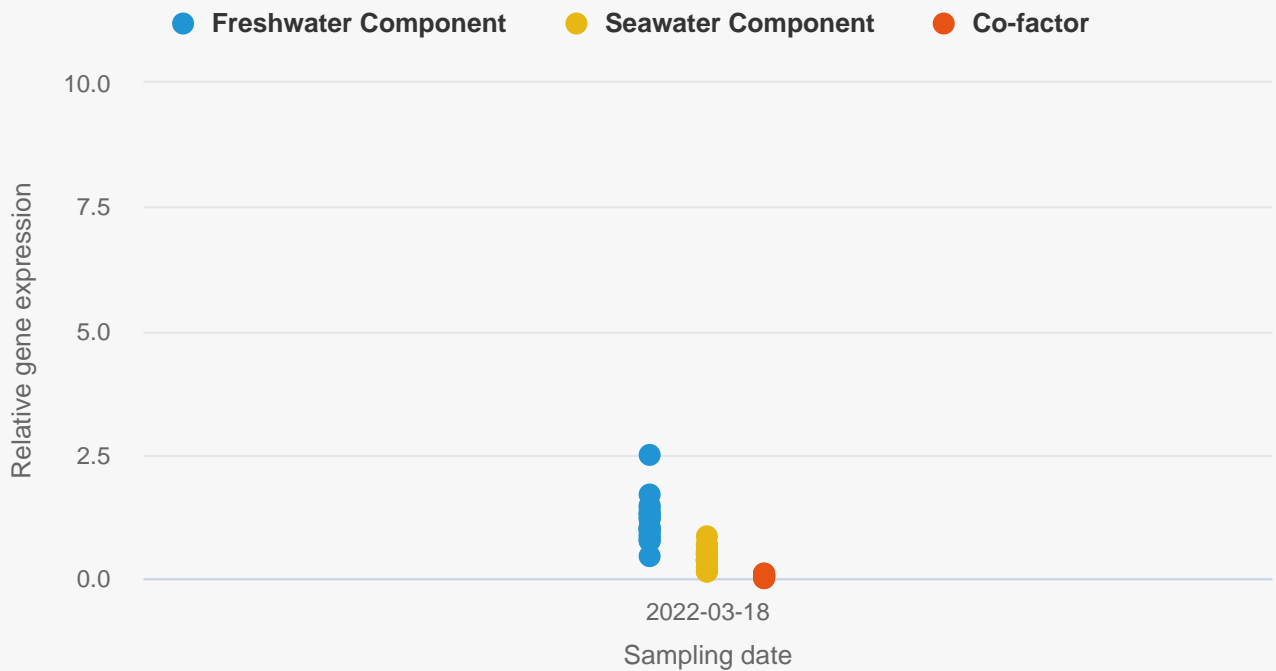
Details of Sample Materials

SITE NAME ÅS	SAMPLE DATE 18.03.2022	RECEIVED DATE 23.03.2022
SITE REF 00005-NO	STOCK TYPE	TRANSFER DATE

SAMPLE NUMBER 1-20	SAMPLE TYPE SmoltVision sample	SPECIES Atlantic salmon	PROCESSING LAB Bergen	COMMENTS
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SmoltVision

SmoltVision on tanknumber 1_21, 1_23, 3_3A, 5_26 during periode 2022-03-18



Individual data

DATE	REPORT NR	FRESHWATER COMPONENT	SEAWATER COMPONENT	CO-FACTOR	SMOLT INDEX	K-FACTOR	WEIGHT
2022-03-18	PA-9B6J3CAT-RS	1,14	0,42	0,05	2,8	1,22	199,7

Temperature / Light regime

DATE	TEMPERATURE	SALINITY
2022-03-18	14.60 °C	-
LIGHT REGIME	DESCRIPTION OF DIFFERENT LIGHT REGIME	
Other light regime	24:0	

Salt feed

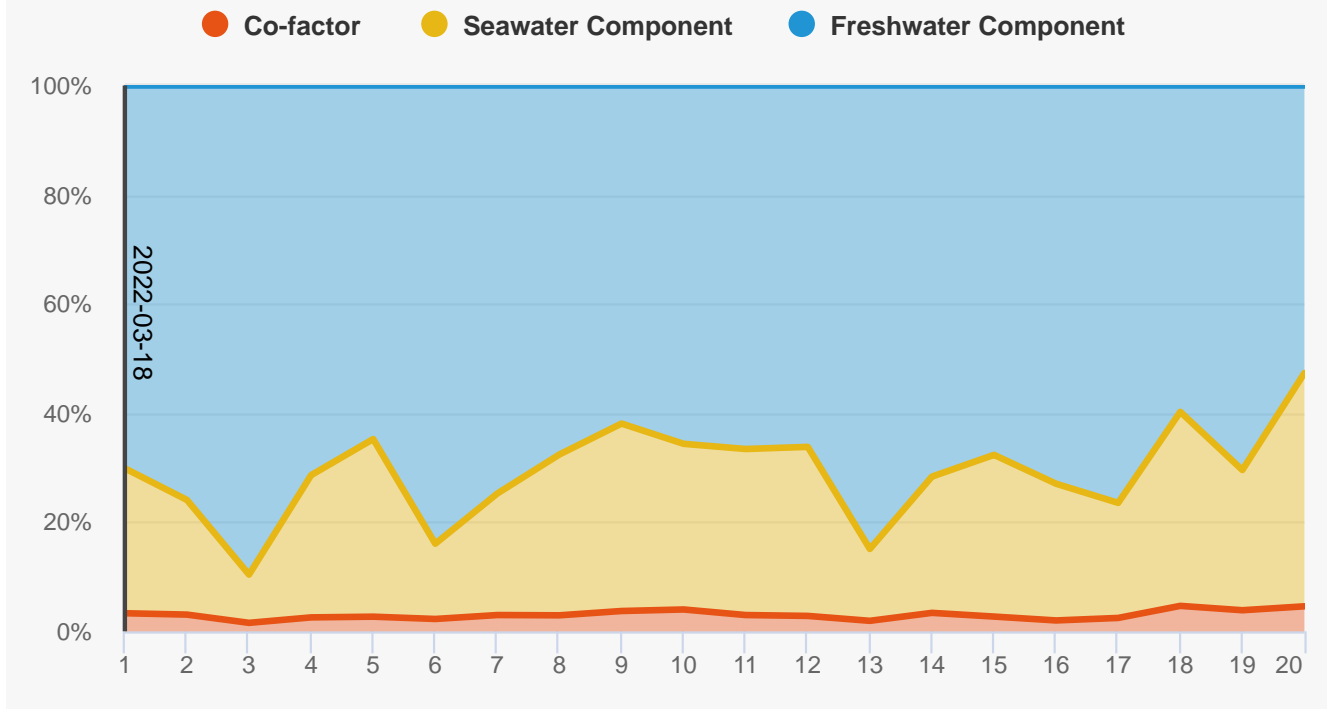
FEED SUPPLIER	SALT FEED START DATE	SALT FEED END DATE
-	-	-

Conclusions/Comments

18.03.2022

SmoltVision is showing in average a higher expression of freshwater ATPase (1,14) than seawater ATPase (0,42) and a co-factor of 0,05. The co-factor is within the normal range (makes up $\pm 20\%$ of the total gene expression, as seen in the graph below), indicating that there are no disturbances of the gills or the smoltification process being picked up at this sampling point. The group is showing some variation in the gene expression. 20 out of 20 individuals have a dominating production of freshwater ATPase at this sampling point, which is not compatible with seawater tolerance. 3 individuals (fish no. 3, 6, and 13) stand out from the rest of the group with a very strong freshwater expression. The group have a large and robust size, which may compensate to some degree for the lack of seawater ATPase at seawater transfer. Based on the size of the fish it's likely that the fish have been through the smoltification process at least once at an earlier stage, and we cannot exclude the possibility that the group is now desmoltifying. Smolt index is low at 2,8, while condition factor is good at 1,22. The fish are on a 24:0 hour light regime. The estimated date of transfer is not stated. Based on the results the fish have a gene expression that is not compatible with seawater tolerance at this sampling point. The large and robust size may compensate for this to some degree. We recommend a new sampling point prior to seawater transfer, to follow the development and smolt status of the fish. Iselin Karlsen

Percentage gene expression per genetic component for tank 1_21, 1_23, 3_3A, 5_26 in period 2022-03-18



Additional Information

TRANSFER DATE	AVERAGE WEIGHT	WATER TYPE Saltwater	WATER TEMP. 14.6 °C	VACCINE	DIAGNOSIS/SYMPTOMS
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Received samples - detailed list

INDIVIDUAL	SAMPLE TYPE	ID	BARCODE	CAGE	BATCH	TISSUES	SAMPLING DATE
1	SmoltVision sample	16, LV3004197030	LV3004197030	5_26		Gill	2022-03-18
2	SmoltVision sample	17, LV3004197139	LV3004197139	5_26		Gill	2022-03-18
3	SmoltVision sample	18, LV3004197140	LV3004197140	5_26		Gill	2022-03-18
4	SmoltVision sample	19, LV3004197141	LV3004197141	5_26		Gill	2022-03-18
5	SmoltVision sample	20, LV3004197142	LV3004197142	5_26		Gill	2022-03-18
6	SmoltVision sample	21, LV3004197143	LV3004197143	3_3A		Gill	2022-03-18
7	SmoltVision sample	22, LV3004197144	LV3004197144	3_3A		Gill	2022-03-18
8	SmoltVision sample	23, LV3004197271	LV3004197271	3_3A		Gill	2022-03-18
9	SmoltVision sample	24, LV3004197272	LV3004197272	3_3A		Gill	2022-03-18
10	SmoltVision sample	25, LV3004197274	LV3004197274	3_3A		Gill	2022-03-18
11	SmoltVision sample	26, LV3004197275	LV3004197275	1_21		Gill	2022-03-18
12	SmoltVision sample	27, LV3004197277	LV3004197277	1_21		Gill	2022-03-18
13	SmoltVision sample	28, LV3004197281	LV3004197281	1_21		Gill	2022-03-18
14	SmoltVision sample	29, LV3004197497	LV3004197497	1_21		Gill	2022-03-18
15	SmoltVision sample	30, LV3004197498	LV3004197498	1_21		Gill	2022-03-18
16	SmoltVision sample	31, LV3004197499	LV3004197499	1_23		Gill	2022-03-18
17	SmoltVision sample	32, LV3004197500	LV3004197500	1_23		Gill	2022-03-18
18	SmoltVision sample	33, LV3004197501	LV3004197501	1_23		Gill	2022-03-18
19	SmoltVision sample	34, LV3004197504	LV3004197504	1_23		Gill	2022-03-18
20	SmoltVision sample	35, LV3004197611	LV3004197611	1_23		Gill	2022-03-18

Information to smolt certificate

DATE REGISTERED	BATCH	TEMPERATURE	SALINITY	TANK NUMBER
2022-03-18		14.60 °C		1_21, 1_23, 3_3A, 5_26

INDIVIDUAL ID	LABEL	BARCODE	LENGTH	WEIGHT	PARR MARKS	SILVER COLOURING	FIN MARGINS	COMMENTS	K-FACTOR	SMOLT INDEX	FRESHWATER COMPONENT	SEAWATER COMPONENT	CO-FACTOR
1	16, LV3004-197030	LV3004197030	261,0	202,1	4,0	3,0	3,0	Treatment S	1,14	3,3	1,41	0,53	0,07
2	17, LV3004-197139	LV3004197139	252,0	199,1	4,0	3,0	2,0	Treatment S	1,24	3,0	1,34	0,37	0,05
3	18, LV3004-197140	LV3004197140	255,0	216,1	4,0	2,0	2,0	Treatment S	1,30	2,7	1,19	0,12	0,02
4	19, LV3004-197141	LV3004197141	258,0	227,4	4,0	2,0	2,0	Treatment S	1,32	2,7	1,30	0,47	0,05

INDIVIDUAL ID	LABEL	BARCODE	LENGTH	WEIGHT	PARR MARKS	SILVER COLOURING	FIN MARGINS	COMMENTS	K-FACTOR	SMOLT INDEX	FRESHWATER COMPONENT	SEAWATER COMPONENT	CO-FACTOR
5	20, LV3004-197142	LV3004197142	264,0	234,7	4,0	2,0	2,0	Treatment S	1,28	2,7	1,30	0,65	0,05
6	21, LV3004-197143	LV3004197143	292,0	279,9	4,0	3,0	2,0	Treatment L	1,12	3,0	0,90	0,15	0,02
7	22, LV3004-197144	LV3004197144	273,0	222,9	4,0	3,0	4,0	Treatment L	1,10	3,7	0,77	0,23	0,03
8	23, LV3004-197271	LV3004197271	281,0	214,0	4,0	3,0	3,0	Treatment L	0,96	3,3	0,98	0,43	0,04
9	24, LV3004-197272	LV3004197272	265,0	214,2	4,0	3,0	2,0	Treatment L	1,15	3,0	1,19	0,66	0,07
10	25, LV3004-197274	LV3004197274	267,0	215,3	4,0	3,0	2,0	Treatment L	1,13	3,0	0,84	0,39	0,05
11	26, LV3004-197275	LV3004197275	232,0	165,1	4,0	2,0	1,0	Treatment C	1,32	2,3	0,74	0,34	0,03
12	27, LV3004-197277	LV3004197277	243,0	169,3	4,0	2,0	2,0	Treatment C	1,18	2,7	1,03	0,48	0,04
13	28, LV3004-197281	LV3004197281	226,0	138,3	3,0	2,0	1,0	Treatment C	1,20	2,0	1,48	0,23	0,03
14	29, LV3004-197497	LV3004197497	222,0	145,7	3,0	2,0	2,0	Treatment C	1,33	2,3	1,02	0,36	0,05
15	30, LV3004-197498	LV3004197498	267,0	248,8	4,0	2,0	2,0	Treatment C	1,31	2,7	0,82	0,36	0,03
16	31, LV3004-197499	LV3004197499	242,0	184,6	3,0	2,0	2,0	Treatment T	1,30	2,3	2,48	0,85	0,07
17	32, LV3004-197500	LV3004197500	221,0	131,3	4,0	2,0	2,0	Treatment T	1,22	2,7	1,70	0,47	0,05
18	33, LV3004-197501	LV3004197501	262,0	219,3	4,0	2,0	2,0	Treatment T	1,22	2,7	0,98	0,59	0,08
19	34, LV3004-197504	LV3004197504	228,0	144,6	4,0	2,0	1,0	Treatment T	1,22	2,3	0,96	0,35	0,05
20	35, LV3004-197611	LV3004197611	259,0	221,8	4,0	2,0	2,0	Treatment T	1,28	2,7	0,45	0,37	0,04
Min			221,0	131,3	3,0	2,0	1,0	-	0,96	2,0	0,45	0,12	0,02
Max			292,0	279,9	4,0	3,0	4,0	-	1,33	3,7	2,48	0,85	0,08
Average			253,5	199,7	3,9	2,4	2,1	-	1,22	2,8	1,14	0,42	0,05
Median			258,5	214,1	4,0	2,0	2,0	-	1,22	2,7	1,02	0,38	0,05
Std. Dev.			19,5	38,7	0,4	0,5	0,7	-	0,09	0,4	0,42	0,17	0,02

-END OF REPORT-

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