

Sårutfordringer

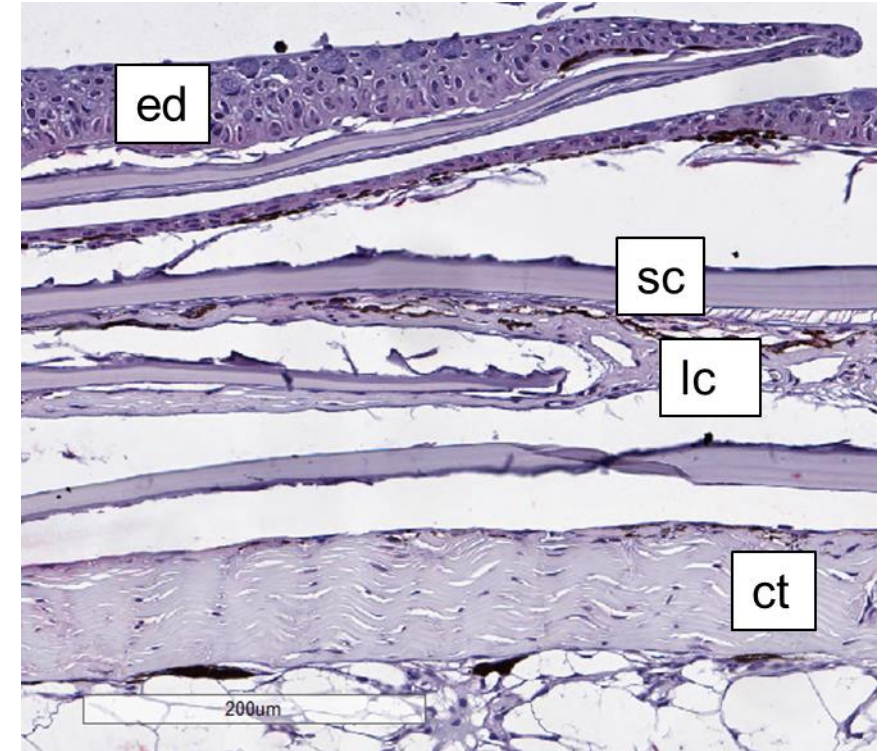
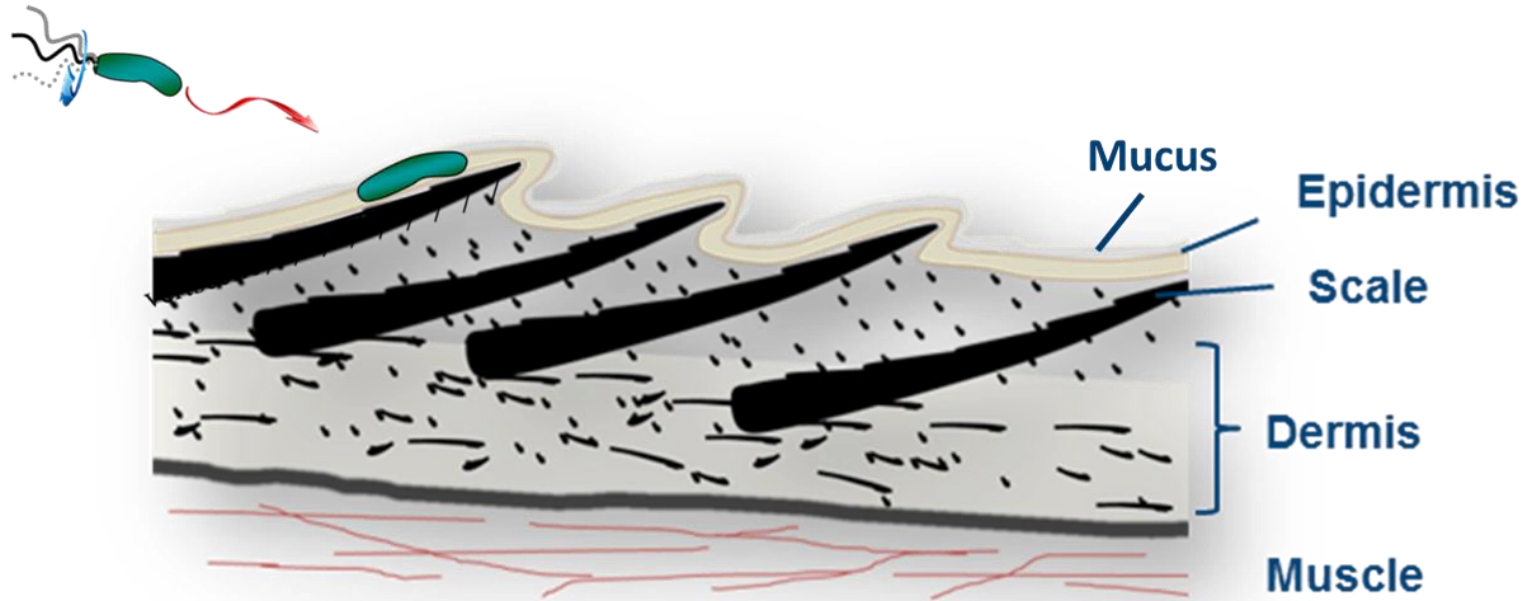
Kunnskapsutvikling



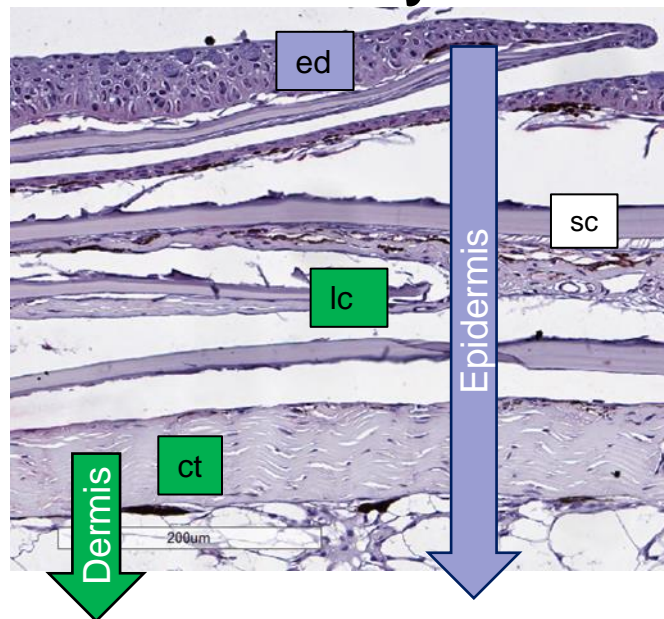
Christian Karlsen

Fiskehelse

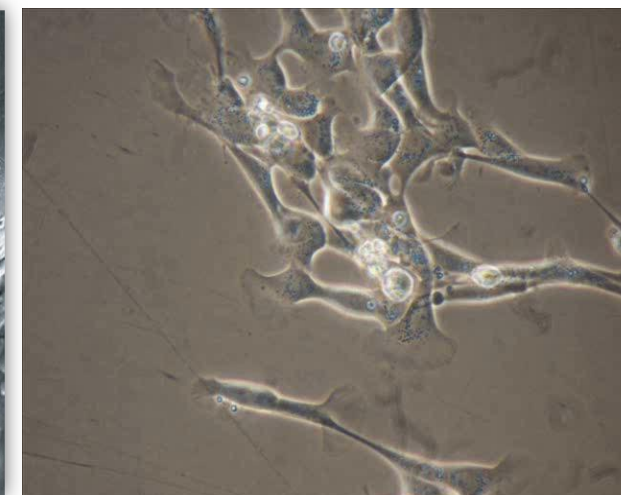
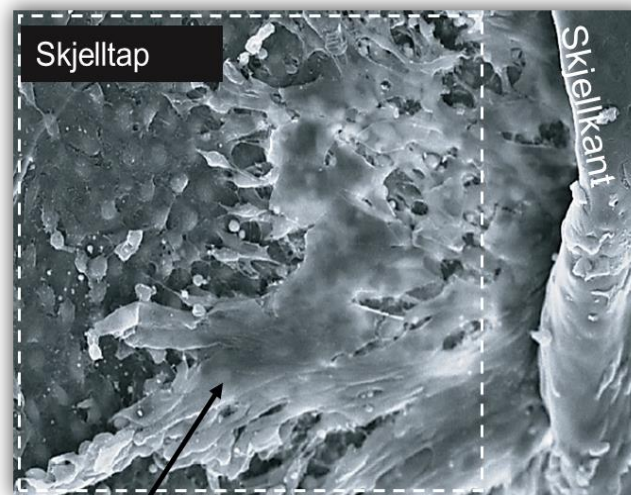
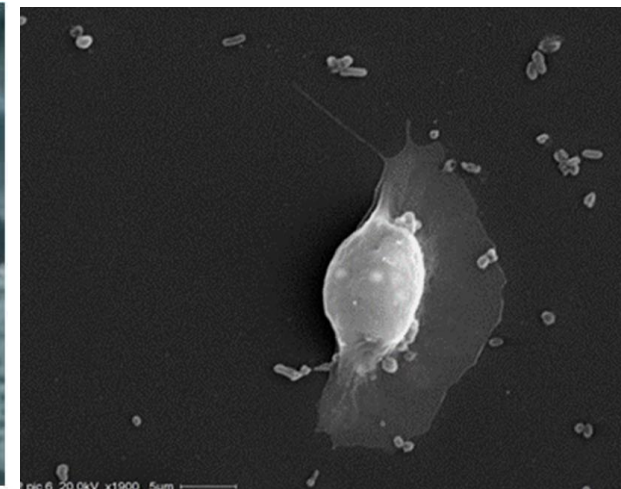
Skinnet til laksen



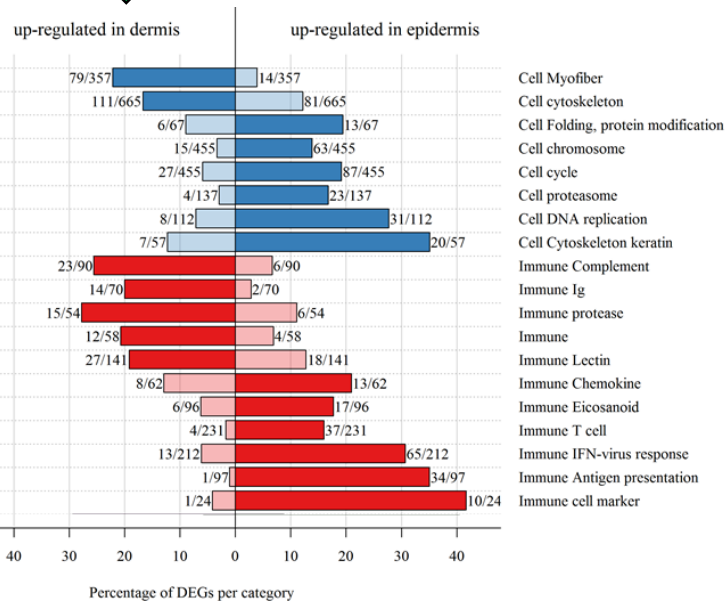
Epidermis – det ytterste hudlaget



Skjelltap og migrerende keratocytter

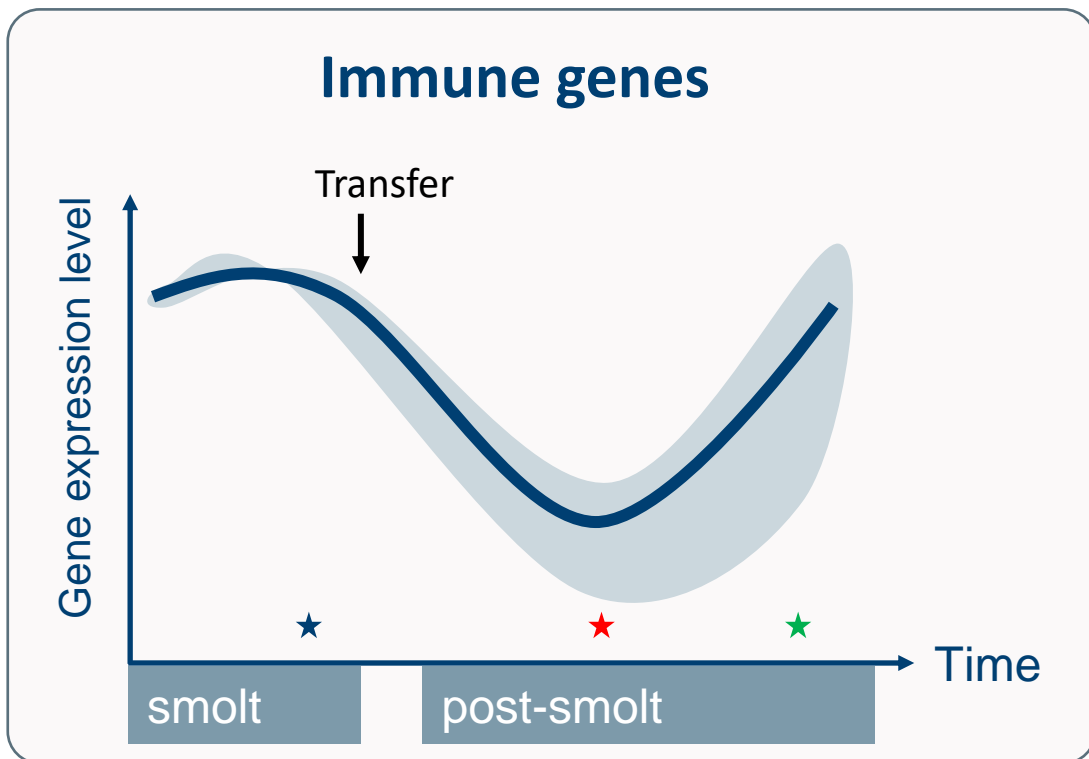


Migrerende keratocytter



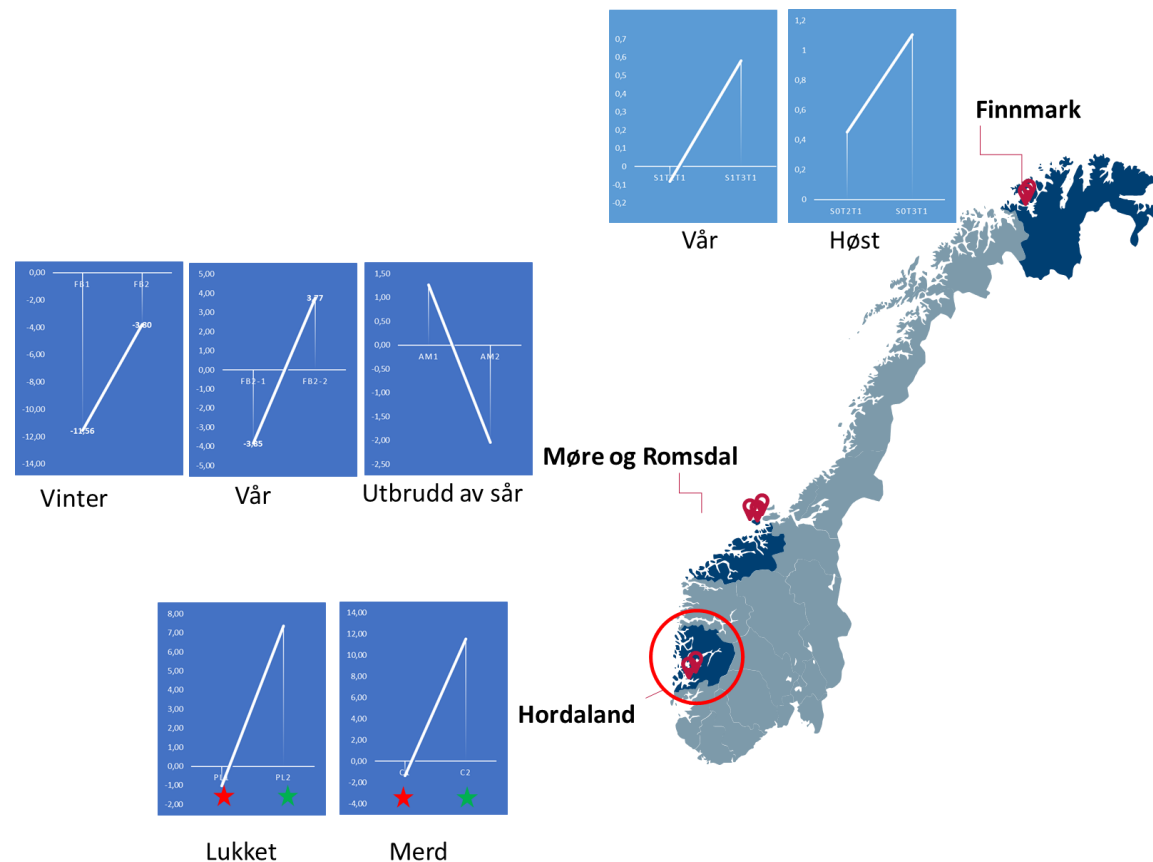
Skinnets immunforsvar etter overgang til sjø

Modell

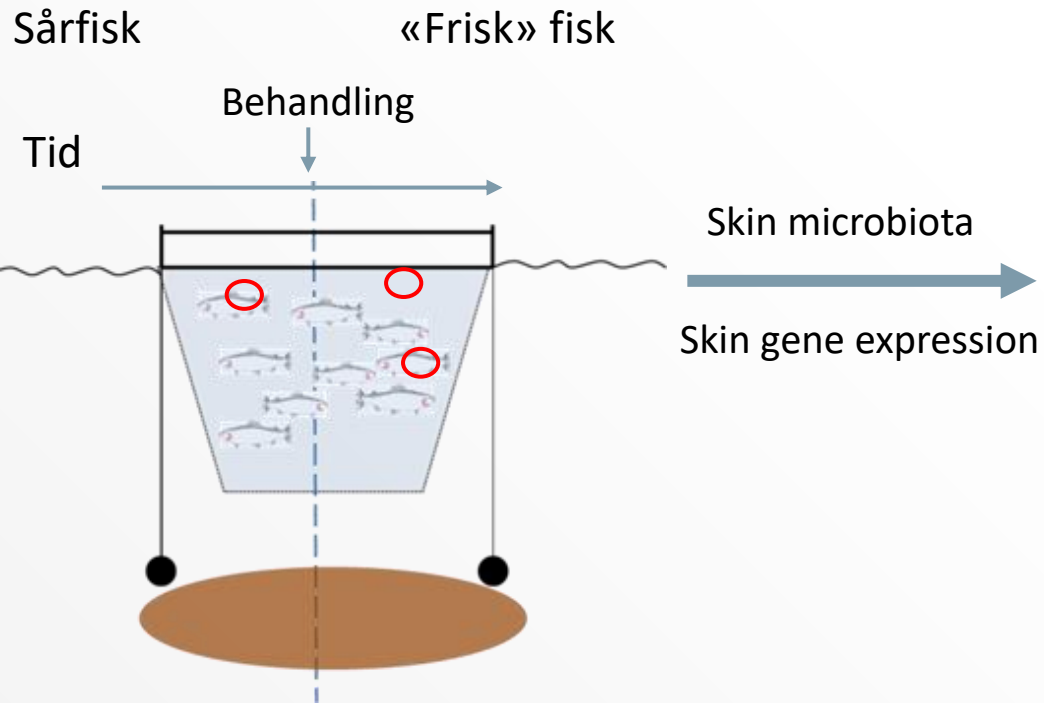


★ I første fase - Redusert immunforsvar

★ I andre fase - Øker immunforsvaret



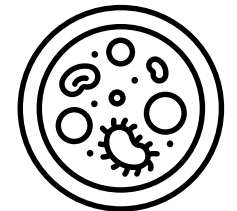
Skinnstatus og mikrobiota



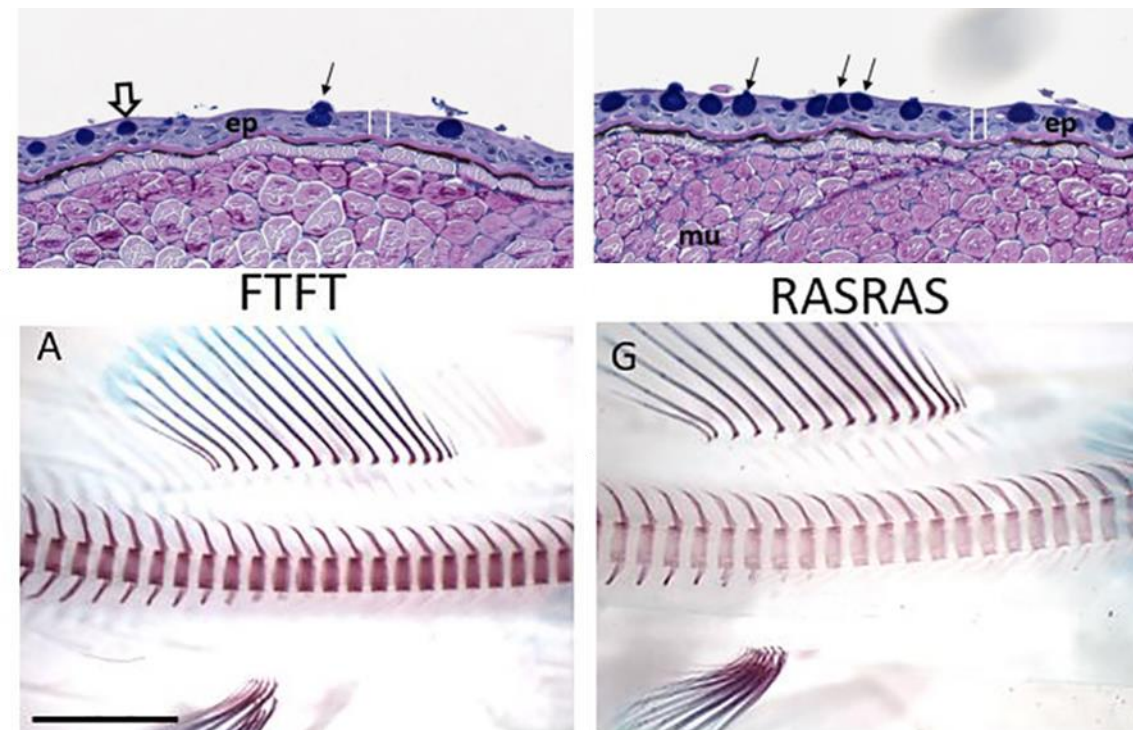
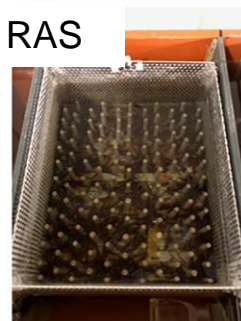
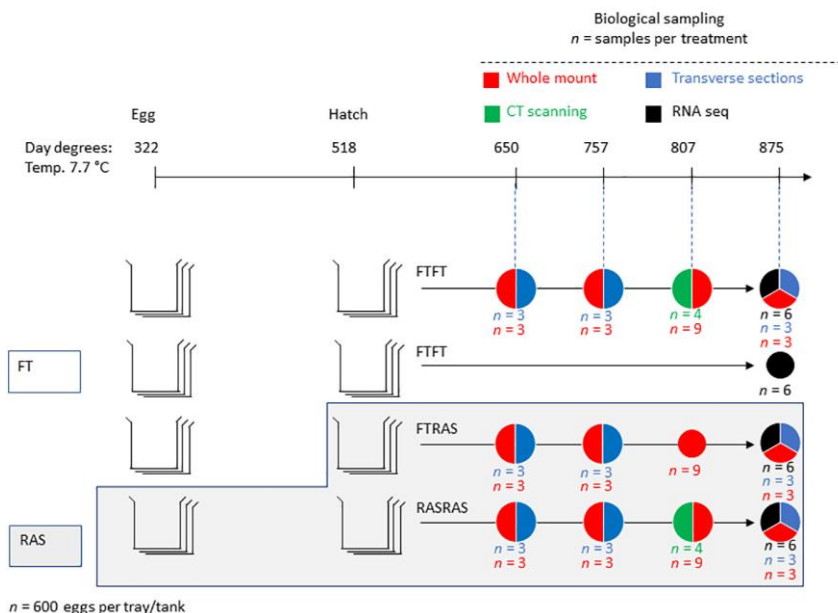
Tenacibaculum	
positive correlation	Tissue Differentiation-hox: 17.1% out of 35
	Immune TNF: 14.9% out of 47
	Immune Lectin: 14.8% out of 27
	Metabolism Ion: 12.7% out of 55
	Tissue Differentiation: 7.6% out of 157
	Cell cytoskeleton: 7.1% out of 154
	Cell Folding, protein modification: 7.5% out of 93
	Metabolism Protease: 10% out of 100
	Tissue Growth factor: 10% out of 70
	Tissue ECM: 15.5% out of 71
	Tissue Epithelium: 21.4% out of 14
negative correlation	Cell Cytoskeleton keratin: 27.8% out of 18
	Tissue ECM mucus: 33.3% out of 12
	Tissue ECM collagen: 39% out of 59

- Bakterier assosiert med nedbrutt skinn – uønskede bakterier
- Bakterier assosiert med intakt skinn – vanlige bakterier

Probiotica

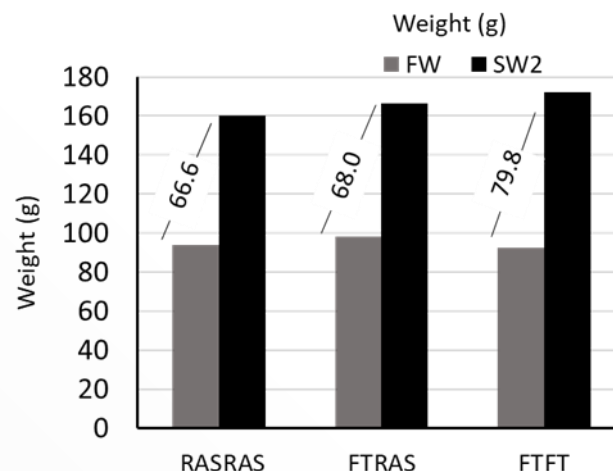
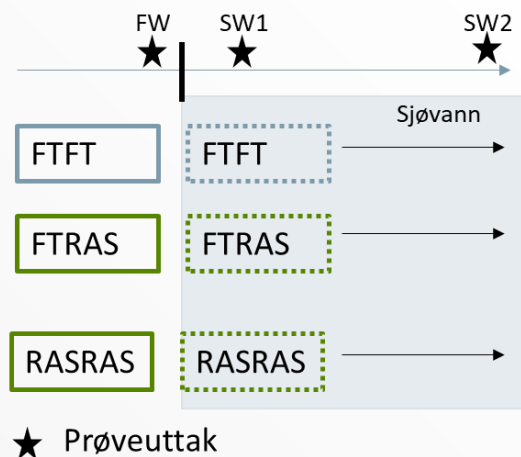


Miljøpåvirkning RAS vs gjennomstrømming



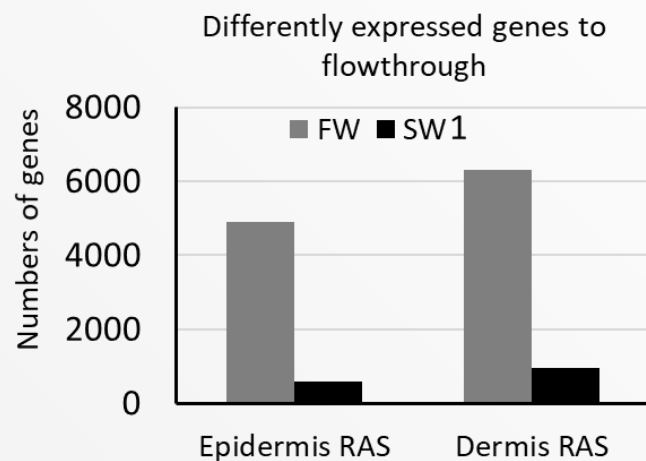
- Tynnere epidermis med flere mukusceller helt ytterst (stress) i RAS fisk
- Virvler og ribbein mindre mineralisert i RAS fisk
- Transkripsjonsdata støtter observasjonene

RAS vs gjennomstrømming ved overføring til sjøvann



Velferdsindikatorer skinn

Group	FW	SW1	SW2
FTFT	OK	OK	Good
FTRAS	OK	Poor	Severe
RASRAS	OK	Poor	Severe



Skinstatus ut i fra genuttrykk

- Skinnet til RAS fisk er ikke like responsivt?

LimiT – Begrense effekten av tenacibakulose i norsk lakseoppdrett

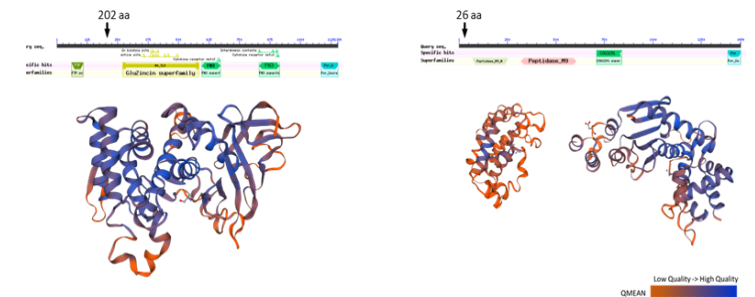
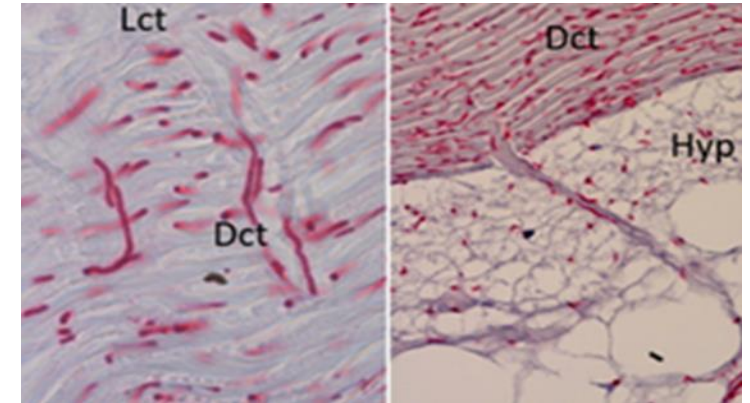
Effekt på fisken

- Akklimatisering med salinitet påvirker immunfunksjoner og forløpet av tenacibakulose i sjø

Forståelse av bakterien

- *Tenacibaculum finnmarkense* har høy affinitet for kollegenrikt vev, beveger seg i bindevesdrag
- Komparativ genomikk - predikering av virulensfaktorer
- To kandidater TenT og pepM9 , thermolysin og kollagenase, er rekombinant uttrykt og testet for aktivitet
- Kan PepM9 og TenT ha funksjon i glidende bevegelse?

(Sluttrapport FHF #901433)



ResisT

FHF 901655 pågår2021 - 2022

Fisk ble test immunisert (6 uker) i et design for å undersøke immunresponser til mulige antigener fra bakterien *Tenacibaculum finnmarkense*

A: Kontroll med saline

B: Nasal eksponering proteinene PepM9/TenT

C: Badeksponering proteinene PepM9/TenT

D: Badeksponering ekstracellulære producter (ECP)

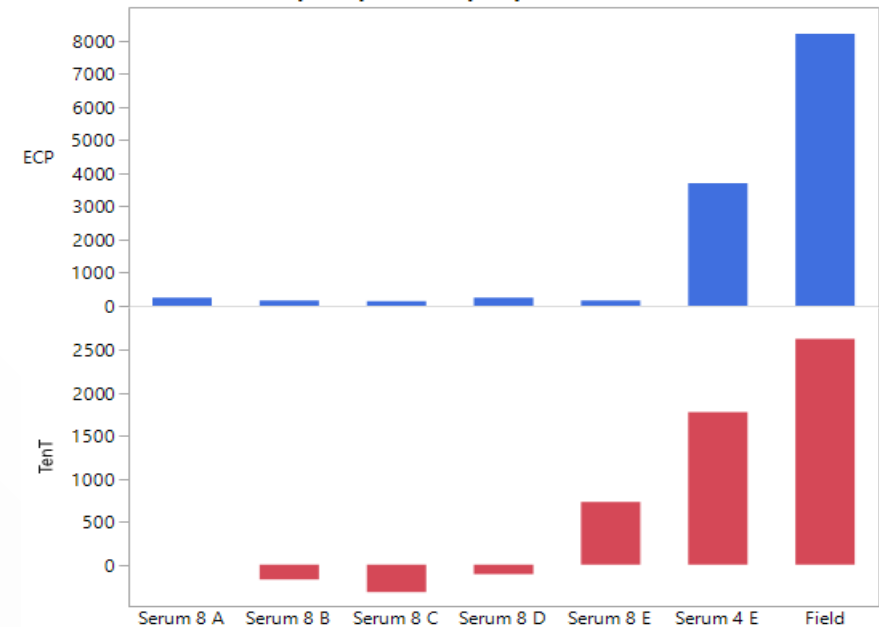
E: Subkutan injeksjon ryggfinnebasis med PepM9/TenT

Gruppe E



Utvikling av Bio-Plex assay for å gjenkjenne antigener av *T. finnmarkense*: TenT, PepM9, ECP

- Skinnmukus gir lite respons
- Serum gir reaksjon etter stikkvaksinering



Antimikrobiell aktivitet fra urteekstrakter

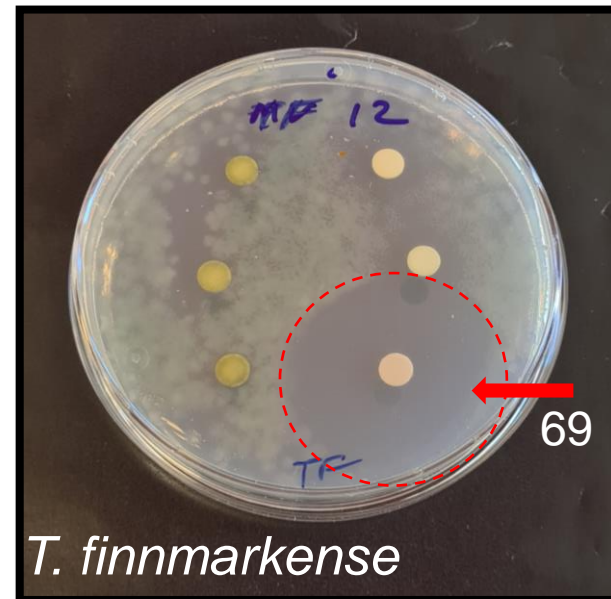
Project: Bio-Farming for bioactive compounds (bioACTive)



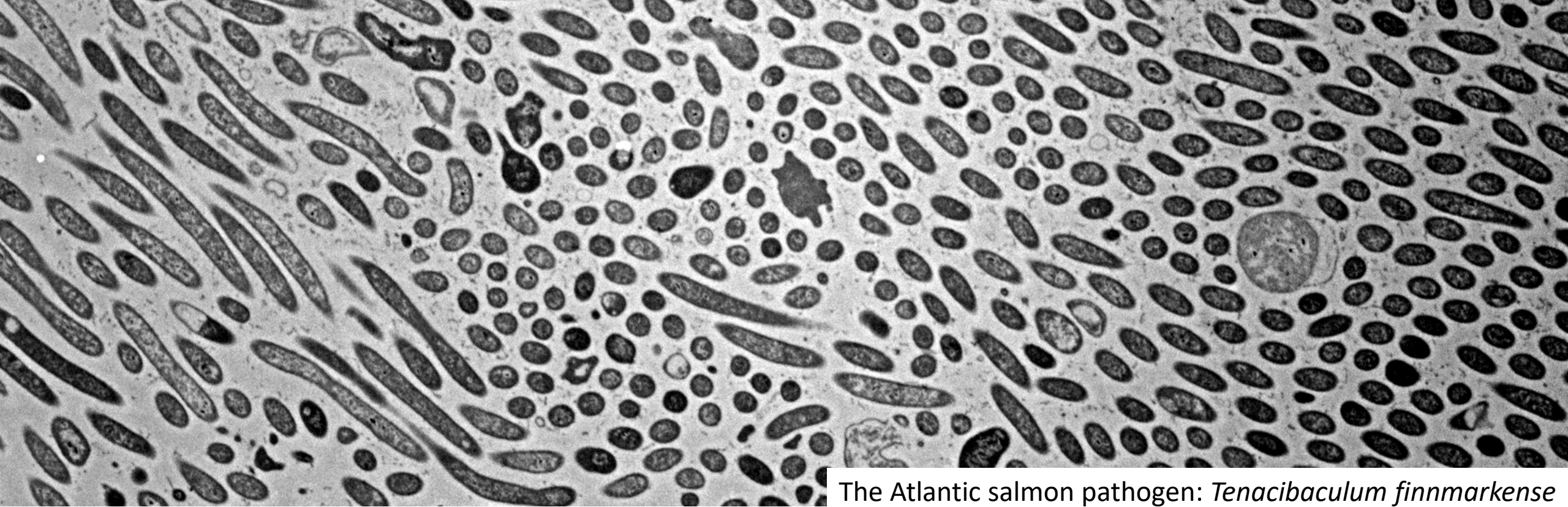
The Research Council of Norway



PlantChem



Postdoc. Amritha Johny



The Atlantic salmon pathogen: *Tenacibaculum finnmarkense*

Takk for oppmerksomheten



The Research Council
of Norway

