

First characterization of blue mussel gene-based sensor in Mediterranean ports (Corsica, France)



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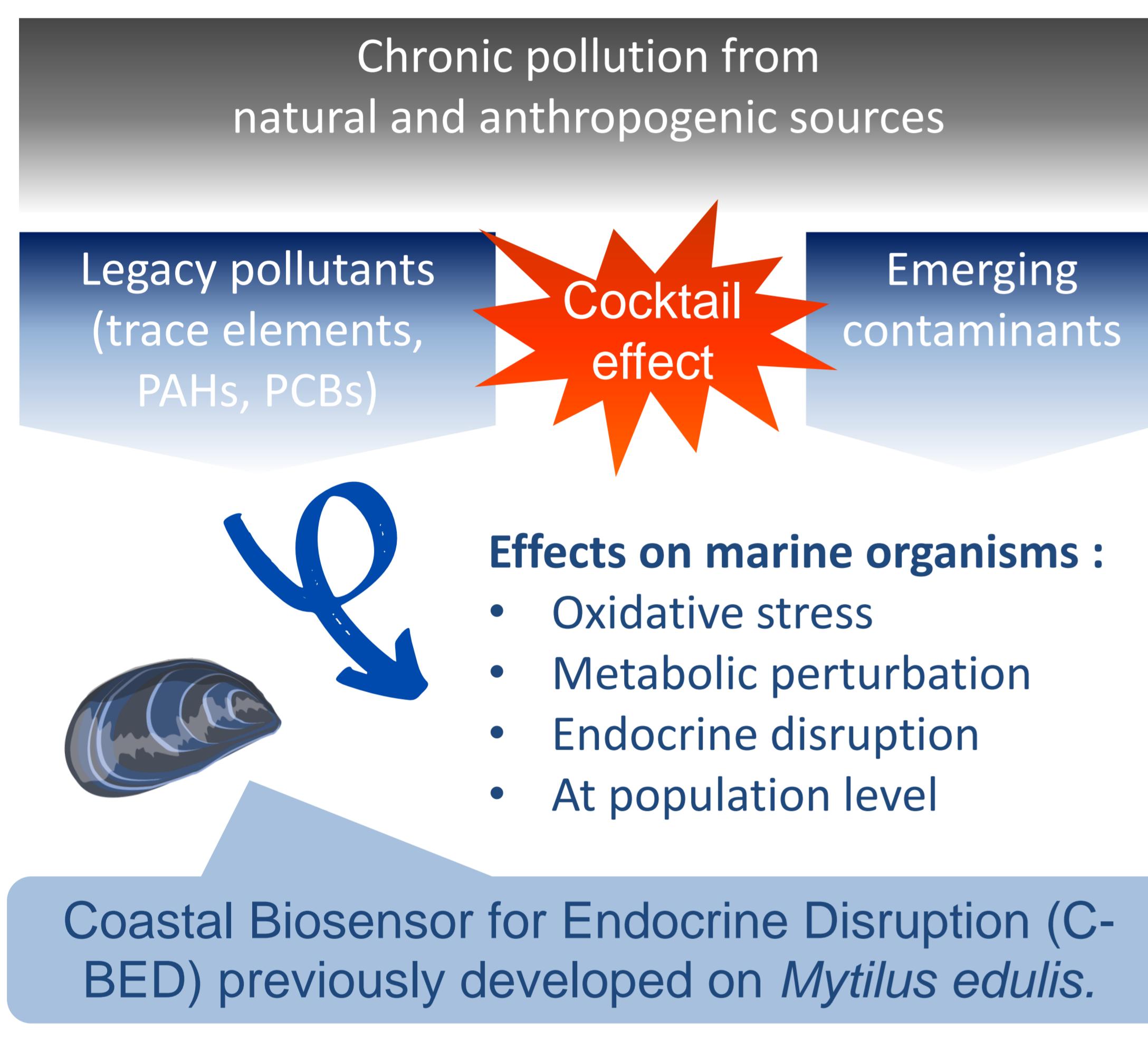
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Context



Objectives :

- develop new biomarkers that can be used worldwide in regulatory testing, risks assessment and monitoring
- evaluate the interest of this innovative approach

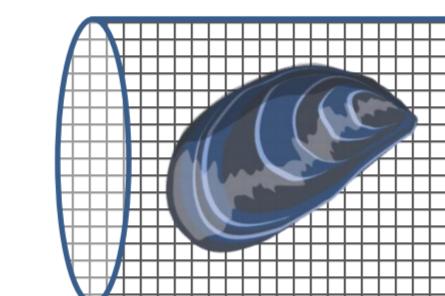


3 months exposure
 sampling in Sept 2020 and Jan 2021



- classic multibiomarker approach (effect & exposure)
- innovative transcriptomic approach adapted to *M. galloprovincialis* & Mediterranean ecosystem.

M. galloprovincialis



St. Florent harbour (exposed)

Revellata Bay (control)

0 20 km

Corsica

M & M

Results & discussion

Transcriptomic approach (C-BED)

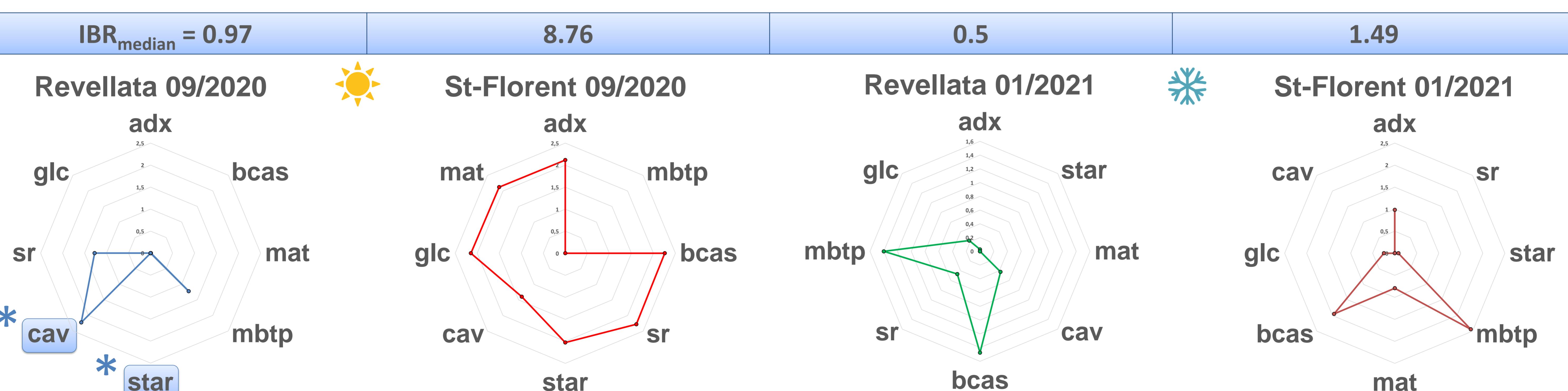
- higher integrative biomarker response values at St. Florent
- mussels may be experiencing endocrine disruption

Example of trace element bioaccumulation ($\mu\text{g/g}$ of dry tissue)

	September 2020	January 2021
	STARESO ☀ St. Florent	STARESO ⛅ St. Florent
Al	13,87	70,45
Cu	3,32	31,56
Fe	87,46	309,66
Pb	0,39	1,34
		95,56
		6,45
		214,12
		879,8
		1,05
		389,76
		16,69
		1,68

Classic multibiomarker approach

- seasonal and spatial variations
- response not only induced by trace elements contamination



Advantages of the C-BED assay vs the classic approach

Determination of the impacts of emerging contaminants

Ability to predict environmental impacts of contamination

Transformative tool for coastal environmental assessment



QUAMPO

