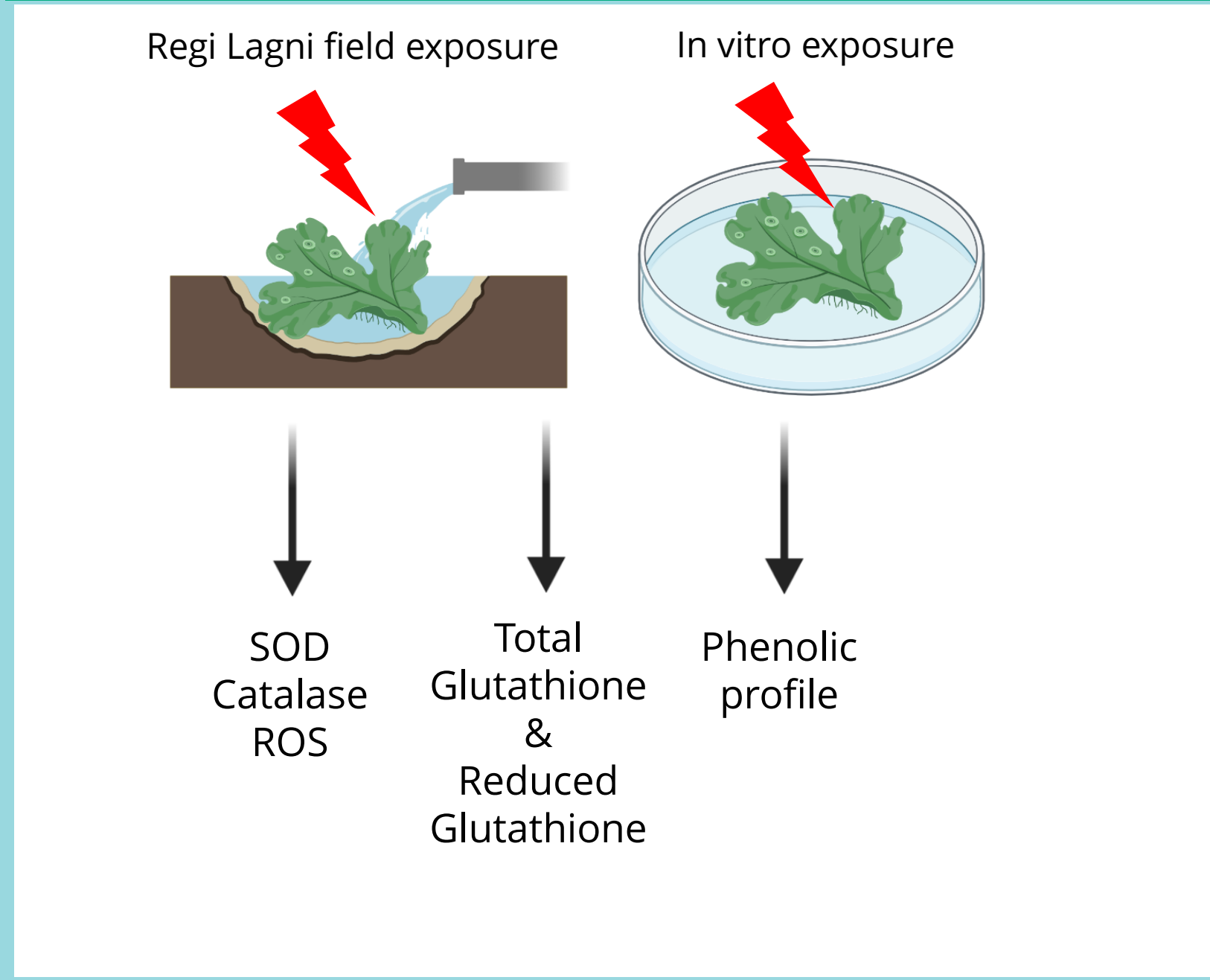


Antioxidant response to heavy metal pollution in *Conocephalum conicum* L. (Dum.)

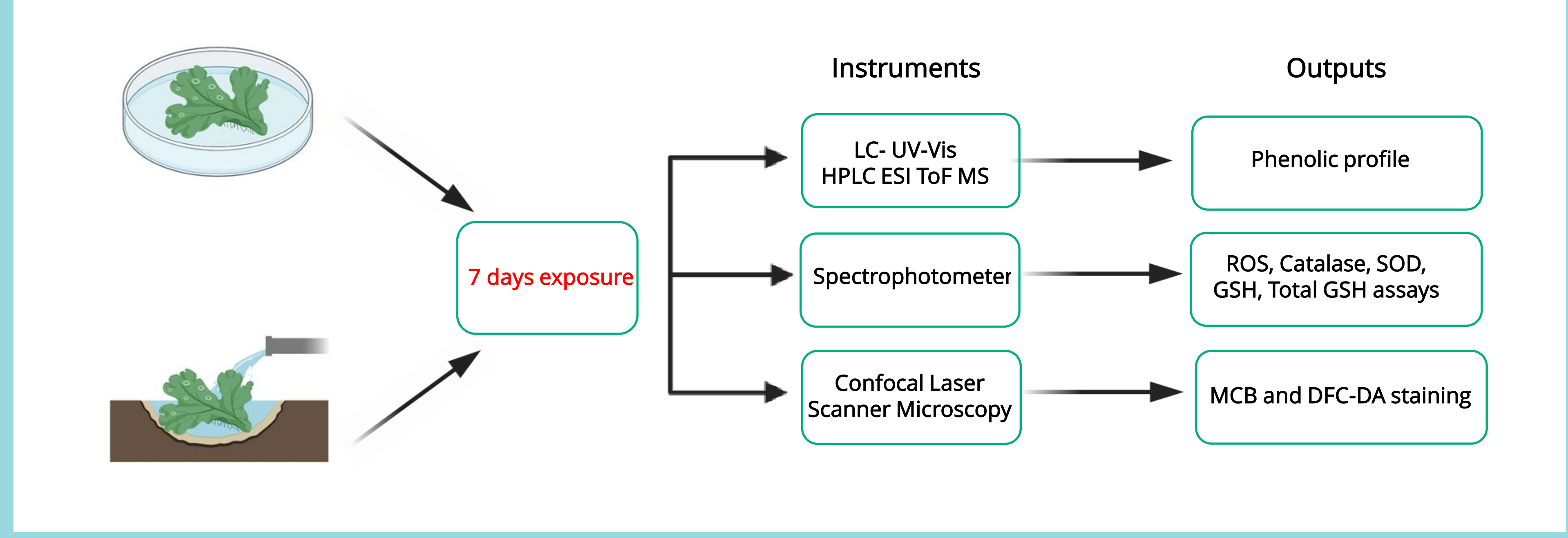
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Abstract



Methods



Conclusion

The present study investigated antioxidant responses in *C. conicum* exposed to heavy metal both in vitro and in heavy metals-polluted channels. General biomarkers of oxidative stress were measured and all showed a good relationship with the degree of pollution. Data confirms that the liverwort *C. conicum* could be a valuable biological sentinel in the assessment of the environmental quality of freshwaters bodies.

Introduction

The Regi Lagni consists of a network of straight channels that, collecting meteoric, spring and also waste waters, carry them from the plain north of Naples to the Tyrrhenian Sea, covering a length of about 56 km. Nowadays the Regi Lagni channels are in a completely careless condition and are affected by severe contamination caused by heavy urbanization and industrialization (mainly chemical industry) as well as intensive agriculture and buffalo farms. The liverwort *Conocephalum conicum* L. (Dum.) (Marchantiales, Bryophyta) is wild growing on the banks of mount site. Previous studies reported that this species was able to respond to local environmental pollution and/or heavy metal treatment by changing its ultrastructure and other biological features. The present study aimed to investigate the effects of the heavy metals pollution from Regi Lagni on *C. conicum* exposed in bags in 3 sites representative of different environmental conditions and in vitro exposed to the same concentrations of heavy metals measured in the water at the time of exposure. In particular, the objective of our study is the evaluation of the bioaccumulation of metals in the gametophyte of the liverwort during the exposure period and the evaluation of the enrichment factor, the production and localization of ROS and the activation of the enzymatic antioxidant response and the production of phenolic compounds.

Results

