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INTRODUCTION

The presence of heavy metals in aquatic ecosystems is of major environmental concern, because they are essentially cumulative in body tissues and hard to remove.

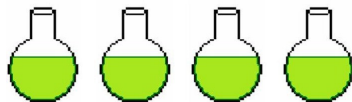
Microalgae – the basic step of the aquatic food chain, can absorb those metal; hence, their application in environmental heavy metal removal has been increasingly studied in recent years, owing to such a demonstrated high biosorption capacity of toxic metals from polluted waters, even at low levels.

The aim of this study was to test the ability for removing Cd^{2+} , from contaminated aqueous media, by *Desmodesmus pleiomorphus*, a wild strain isolated from a heavily polluted environment in Northern Portugal.

MATERIALS & METHODS

Experimental design

Desmodesmus pleiomorphus



$[Cd^{2+}] = 0.5 \text{ mg/L}$ 1 mg/L 2.5 mg/L 5 mg/L

OHM medium; $T(^{\circ}C) = 25$; continuous light



7 day - exposure

75 mL + 75 mL sample taken

Centrifugation at 4000 rpm, $4^{\circ}C$

Analytical assaying

- Total Cd removed
- Cd adsorbed
- Cd taken intracellularly

Cd analysed by atomic absorption spectrophotometry, with flame atomization

RESULTS & DISCUSSION



- Total amount of Cd removed increased with increasing initial metal concentration;
- Most of Cd ions removed were adsorbed on the cell surface (via a self-protection mechanism, accounting for tolerance against toxic metals); and
- Maximum amount removed was 61.2 mg Cd/g, upon exposure to 5 mg Cd/L, by 1 d.

***D. pleiomorphus* biomass has potential for bioremediation of metal-polluted waters**

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