The proportion of the three phytoplankton size classes, pico-, nano- and microplankton were estimated from biomarker pigments concentrations. The composition of taxonomic groups was estimated by Chemtax (a program that applies matrix factorization to pigments data in order to estimate the contribution of phytoplankton groups to total chlorophyll a). Microscope cell counts were performed. Synoptic Chla L3 and L4 products from MODIS and MERIS, were used to characterize the Chla distributions contemporary to the surveys.

Significant correlations were obtained between RS Chla, Chla determined by in situ fluorimetry and by HPLC. Significant correlations were also obtained between Chla concentration and microplankton percentage within the community.

Significant correlations between taxonomic groups obtained by Chemtax and by microscopy were found. Communities were found to be different in the two cruises, which highlights the relevance of understanding phytoplankton community structure.

In summary, the results obtained show the advantages and constraints of using ocean colour images to monitor the occurrence of algal blooms (including HABs), and highlight the need for further work with in situ data on pigment concentration and microscopy observations to refine RS detection of HABs in Iberian waters.

QUANTIFICATION OF THE TOXIC DINOFLAGELLATE *Ostreopsis* spp. BY qPCR ASSAY IN MARINE AEROSOL

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Marine aerosols are airborne particles of biological origin containing algal cells, bacteria, spores, and viruses, which are carried out by bubbles to the sea surface microlayer and to the atmosphere.

Since the summer of 2005, in the Mediterranean Sea, growing concerns regarding exposure to harmful marine aerosols associated with toxic benthic dinoflagellate *Ostreopsis* spp. blooms have been reported, as they represent major health and economic risks to human populations.

Toxic events in humans after inhalation or cutaneous contact have been reported during *O. cf. ovata* blooms and were attributed to palytoxin (PLTX)-like compounds produced by this microalga.

In this context, we developed a qPCR assay for the estimation of the toxic benthic dinoflagellate *Ostreopsis cf. ovata* in the complex matrix of marine aerosol at Sant Andreu de Llavaneres (northwestern Mediterranean Sea) during a bloom together with a determination of PLTX-like compounds using hemolytic assay and liquid chromatography.

Marine aerosol samples collected at two stations were analyzed by qPCR. The sensitivity was set at two rDNA copy number and 8×10^{-4} cell per reaction. Results showed that *O. cf. ovata* abundance in marine aerosol during the bloom varied in the range of 1–102 cells per filter. No PLTX was detected in the aerosol filters by analytical determinations, while the estimation of PLTX like-compound concentrations in microepiphytic assemblages varied between 0.1 and 1.2 pg/cell.

In conclusion, the developed qPCR assay is a highly sensitive and specific quantification method for toxic *O. cf. ovata* in a complex matrix, such as marine aerosol.