

TARA-ARCTIC cruise - 2013 (PI: Annick Bricaud)
These analyses were carried out thanks to an ESA funding.

Contact:

Hervé Claustre, Joséphine Ras, Mustapha Ouhssain

LOV - Caserne Nicolas - BP 08 - Quai de la Darse - 06238 Villefranche sur mer

Tel : +33 4 93 76 37 29 or +33 4 93 76 37 21

Email : claustre@obs-vlfr.fr ; jras@obs-vlfr.fr ; mustapha.ouhssain@obs-vlfr.fr

Notes:

- 1 Filters extracted in 100% methanol, disrupted by sonication and clarified by filtration (GF/F Whatman). Extraction time lasted 2 hours.
- 2 Analysis by HPLC was carried out the same day. Instrument: HPLC 1200
- 3 undetected pigments are represented by "LOD" (Limit of detection, see Note 7)
- 4 The analytical procedure is described in:
Ras J, Uitz, J, and H. Claustre (2008). Spatial variability of phytoplankton pigment distributions in the Subtropical South Pacific Ocean: comparison between in situ and modelled data. Biogeosciences, 5, 353-369
- 5 Detection of carotenoids and chlorophylls c and b: 450 nm, chlorophyll a and derivatives: 676 nm, bchl a : 770 nm.
- 6 Performance metrics:
Tchl a injection precision : 0.91% Calibration precision: 0.4%
Tchl a accuracy (SeaHARRE-6): 3.72% Calibration accuracy: 0.3%
Retention time precision: 0.54%
- 7 Limits of detection : calculated in ng per injection and as the concentrations corresponding to a signal:noise ratio of 3 and for a filtered volume of 1 L.
- 8 Analysts: Mustapha Ouhssain and Josephine Ras
- 9 Quality control evaluation of the peaks: QA=1 = "good"
QA=2 = "acceptable"
QA=3 = "questionnable"
Prasinoxanthin concentrations are classified QA=3 due to coelution with an unknown pigment (Fucoxanthin-like or Micromonal)
- 11 Deleted samples:
station 189 (9 samples): abnormal profil, probably problem during filtration (R010000940, -941, 942, -943, -954, -955, -957, -958, -959).
R010000313 udw from 22/9/2013: Tchl a abnormally low
R010000742 udw from 26/11/2013: Tchl a abnormally low
- 12 5 missing samples: R010000736, -739, -314, -896, -991.

Titles	Description	Units	detection wavelength (nm)	LOD ng/inj	LOD for 1 L filtered (en mg.m-3)
Date of analysis	UTC	dd/mm/yyyy			
Cruise or Project					
Ship					
Sampling date	UTC	dd/mm/yyyy			
Sampling time	UTC	hh:mm			
Latitude		degrees decimal			
Longitude		degrees decimal			
Sample code					
Station					
CTD					
Niskin Bottle					
Depth (m)	Sampling depth	metres			
Filtered Vol (L)	Filtered volume	Litres			
Chlorophyll c3		mg per cubic metre	450	0.014	0.0004
Chlc3-QA	quality control evaluation	1, 2 or 3			
sum Chlorophyll c2+c1	sum of chlorophyll c1 and c2	mg per cubic metre	450	0.017	0.0004
Chlc2c1-QA	quality control evaluation	1, 2 or 3			
Sum Chlorophyllide a	Chlda + Chlda-like	mg per cubic metre	667	0.017	0.0004
Chlda-QA	quality control evaluation	1, 2 or 3			
Peridinin		mg per cubic metre	450	0.007	0.0002
Peri-QA	quality control evaluation	1, 2 or 3			
Sum Phaeophorbid a	Phda + Phda-like	mg per cubic metre	667	0.010	0.0002
Phda-QA	quality control evaluation	1, 2 or 3			
19'-Butanoyloxyfucoxanthin		mg per cubic metre	450	0.009	0.0002
But-QA	quality control evaluation	1, 2 or 3			
Fucoxanthin		mg per cubic metre	450	0.009	0.0002

Fuco-QA	quality control evaluation	1, 2 or 3			
Neoxanthin		mg per cubic metre	450	0.009	0.0002
Neo-QA	quality control evaluation	1, 2 or 3			
Prasinoxanthin		mg per cubic metre	450	0.009	0.0002
Pras-QA	quality control evaluation	1, 2 or 3			
Violaxanthin		mg per cubic metre	450	0.012	0.0002
Viola-QA	quality control evaluation	1, 2 or 3			
19'-Hexanoyloxyfucoxanthin		mg per cubic metre	450	0.009	0.0002
Hex-QA	quality control evaluation	1, 2 or 3			
Diadinoxanthin		mg per cubic metre	450	0.013	0.0004
Diadino-QA	quality control evaluation	1, 2 or 3			
Alloxanthin		mg per cubic metre	450	0.014	0.0004
Allo-QA	quality control evaluation	1, 2 or 3			
Diatoxanthin		mg per cubic metre	450	0.014	0.0004
Diato-QA	quality control evaluation	1, 2 or 3			
Zeaxanthin		mg per cubic metre	450	0.014	0.0004
Zea-QA	quality control evaluation	1, 2 or 3			
Lutein		mg per cubic metre	450	0.013	0.0004
Lut-QA	quality control evaluation	1, 2 or 3			
Bacteriochlorophyll a		mg per cubic metre	770	0.013	0.0004
Bchla-QA	quality control evaluation	1, 2 or 3			
Divinyl Chlorophyll b		mg per cubic metre	450	0.003	0.0002
DVChlb-QA	quality control evaluation	1, 2 or 3			

Chlorophyll b		mg per cubic metre	450	0.004	0.0002
Chlb-QA	quality control evaluation	1, 2 or 3			
Total Chlorophyll b	DV Chlb + Chlb	mg per cubic metre	450	0.004	0.0002
TChlb-QA	quality control evaluation	1, 2 or 3			
Divinyl Chlorophyll a		mg per cubic metre	667	0.011	0.0002
DVChla-QA	quality control evaluation	1, 2 or 3			
Chlorophyll a	Chlorophyll a + allomers + epimers	mg per cubic metre	667	0.011	0.0002
Chla-QA	quality control evaluation	1, 2 or 3			
Total Chlorophyll a	Chla + DV Chla + Chlorophyllid a	mg per cubic metre	667	0.013	0.0004
Tchla-QA	quality control evaluation	1, 2 or 3			
sum Phaeophytin a	Phytna + Phytna-like	mg per cubic metre	667	0.007	0.0002
Phytna-QA	quality control evaluation	1, 2 or 3			
Sum carotenes	beta carotene + a-carotene	mg per cubic metre	450	0.013	0.0004
Tcar-QA	quality control evaluation	1, 2 or 3			
Observations					