

Supplement

Biogenic and nonliving labile particulate iron in the subtropical North Pacific Ocean

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Text S1. Multiple linear regression of Fe uptake rates with *Prochlorococcus* and picoeukaryotes

A multiple linear regression model of *Prochlorococcus* and picoeukaryotes (cells mL⁻¹) with Fe uptake rates (pM d⁻¹) was calculated using *fitlm* in MATLAB. The resulting model equation was:

$$\text{Fe uptake rate} = -63.959 + 0.00045 \text{ *Prochlorococcus* } + 0.039445 \text{ picoeukaryotes.}$$

The model had an R² of 0.89 and p values < 0.05 for the coefficients of *Prochlorococcus* and picoeukaryotes.

Table S1. Correlations with Fe uptake rate at 25 m. Bolded parameters showed a negative correlation with Fe uptake rates.

Parameter (at 25 m)	Correlation with Fe uptake rate (R ²)
Dissolved Fe	0.03
Fe:C	0.92
Heterotrophic bacteria*	0.15
<i>Prochlorococcus</i> *	0.47
<i>Synechococcus</i> *	0.09
Picoeukaryotes*	0.41
Primary production	0.26
Particulate carbon	0.26
Recalcitrant particulate Fe	0.01
Labile particulate Fe	0.09
Total particulate Fe	0.03
Dissolved organic carbon	0.33

*Data not available for 2023

Table S2. Correlations with biogenic particulate Fe at 25 m. Bolded parameters showed a negative correlation with Fe uptake rates.

Parameter (at 25 m)	Correlation with Fe uptake rate (R^2)
Dissolved Fe	0.12
Heterotrophic bacteria*	0.03
<i>Prochlorococcus</i> *	0.61
<i>Synechococcus</i> *	0.22
Picoeukaryotes*	0.15
Primary production	0.19
Particulate carbon	0.13
Recalcitrant particulate Fe	0.00
Labile particulate Fe	0.25
Total particulate Fe	0.03
Dissolved organic carbon	0.31
Fluorometric Chlorophyll <i>a</i>	0.06
HPLC Monovinyl Chlorophyll <i>a</i>	0.23
HPLC Divinyl Chlorophyll <i>a</i>	0.09
HPLC 19'-Butanoyloxyfucoxanthin	0.10
HPLC Fucoxanthin	0.02
HPLC 19'-hexanoyloxyfucoxanthin	0.01
HPLC Carotenes	0.00

*Data not available for 2023

Table S3. Correlations with labile nonliving particulate Fe at 25 m. Bolded parameters showed a negative correlation with Fe uptake rates.

Parameter (at 25 m)	Labile nonliving particulate Fe (R^2)
Dissolved Fe	0.15
Fe uptake	0.12
Heterotrophic bacteria*	0.04
<i>Prochlorococcus</i> *	0.04
<i>Synechococcus</i> *	0.12
Picoeukaryotes*	0.01
Primary production	0.02
Particulate carbon	0.01
Recalcitrant particulate Fe	0.28
Labile particulate Fe	0.53
Total particulate Fe	0.47
Dissolved organic carbon	0.11
Recalcitrant particulate Al	0.19
Recalcitrant particulate Ti	0.31
Recalcitrant pAl export	0.04
Recalcitrant pTi export	0.02
Recalcitrant pFe export	0.02
Labile pFe export	0.00

*Data not available for 2023