Spatial patterns of biphasic ectoenzymatic kinetics related to biogeochemical properties in the Mediterranean Sea.

France Van Wambeke[1], Elvira Pulido[1], Julie Dinasquet[2,3], Kahina Djaoudi[1,4], Anja Engel[5], Marc Garel[1], Sophie Guasco[1], Sandra Nunige[1], Vincent Taillandier[6], Birthe Zäncker[6,7], Christian Tamburini[1].

Supplementary Material

Figure S1. a) Distribution of total aminoacids (TAA, bars, lef scale) and TAA-N/DON ratio (dots, right scale). b) Distribution of total combined carbohydrates (TCHO, bars, left scale) and TCHO-C/DOC ratio (dots, right scale). At each station four data are presented, corresponding to, from left to right, ‘surf’, ‘dcm’, ‘liw’ and ‘mdw’ layers, respectively. At stations ST10, ST1 and ST2, DON data at ‘mdw’ and ‘liw’ layers were not available

Figure S2. Distribution of bacterial production (BP, a) and bacterial abundances (BA, b). At each station four data are presented, corresponding to, from left to right, ‘surf’, ‘dcm’, ‘liw’ and ‘mdw’ layers, respectively. BP data are not available for ‘liw’ layer at stations ST2 and ST4, and ‘mdw’ layer at station FAST, ST2, ST4, ST6.

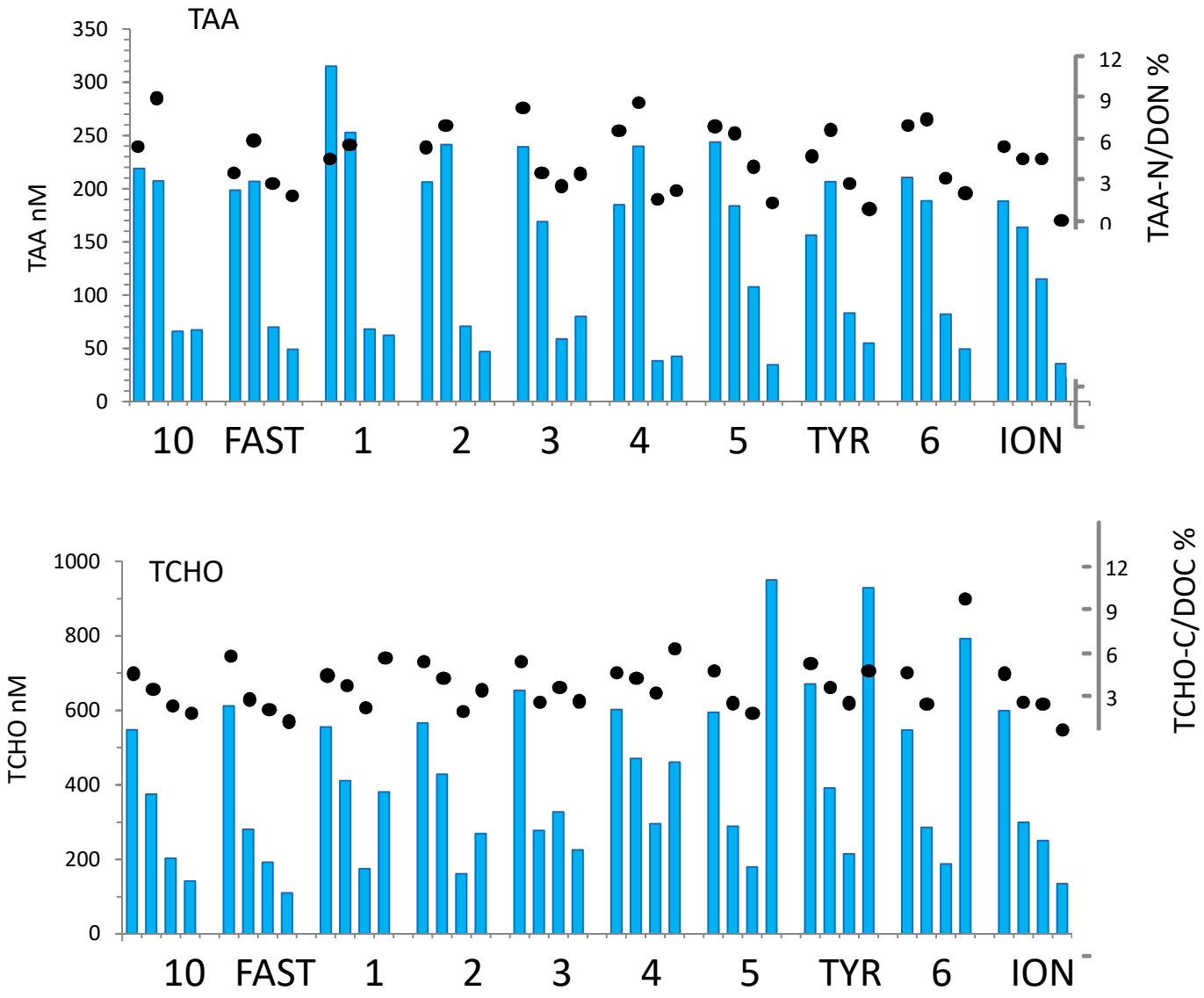
TAA
TAA nM
TAA-N/DON %
350
300
250
200
150
100
50
0
12
9
6
3
0
10
FAST
1
2
3
4
5
TYR
6
ION
TCHO
TCHO nM
TCHO-C/DOC %
1000
800
600
400
200
0
12
9
6
3
10
FAST
1
2
3
4
5
TYR
6
ION

Fig S1

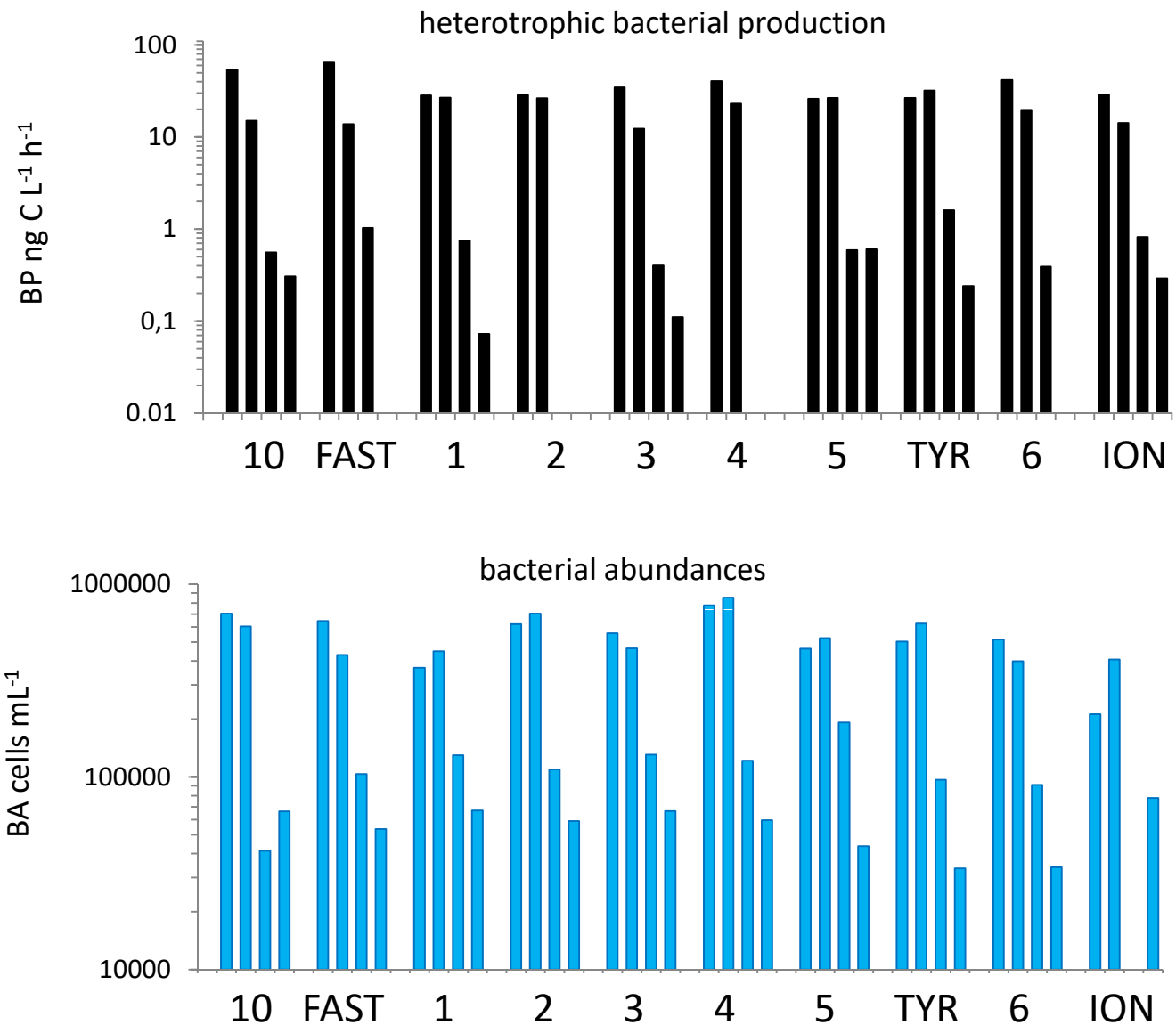
heterotrophic bacterial production
BP ng C L-1 h-1
100
10
1
0,1
0.01
10
FAST
1
2
3
4
5
TYR
6
ION
bacterial abundances
BA cells mL-1
1000000
100000
10000
10
FAST
1
2
3
4
5
TYR
6
ION

Fig S2

Table S1. Average standard deviations and ranges of biogeochemical parameters, nitrates (NO3), nitrites (NO2), dissolved inorganic phosphate (DIP), total chlorophyll a (TChl a), dissolved organic carbon (DOC), dissolved organic nitrogen (DON), dissolved organic phosphorus (DOP), total combined amino acids (TAA), total combined carbohydrates (TCHO), at the four layers sampled.*LWCC technique, ** classical method

		surface	dcm	liwlayers	mdw waters
NO3	mean ± sd	0.013 ± 0.018	0.88 ± 0.59	7.38 ± 2.57	8.29 ± 1.30
µM	range	ld – 0.056	0.27– 1.75	2.5 – 9.7	4.94 – 9.15
NO2	mean ± sd	ld	106 ± 76	10 ± 4	ld
nM	range	ld	ld– 216	ld - 15	ld
DIP	mean ± sd	10 ± 4*	35 ± 30*	0.29±0.13**	0.36±0.07**
nM*, µM**	range	4 – 17	9– 107	0.05- 0.43	0.17 - 0.41
TChl a	mean ± sd	0.08 ± 0.04	0.54 ± 0.15	nd	nd
µg l^{-1}	range	0.06–0.19	0.31–0.82		
DOC	mean ± sd	71 ± 4	62 ± 3	51 ± 4	45± 3
µM	range	60–75	58–66	45 – 58	39– 49
DON	mean ± sd	5.7 ± 1.8	5.1 ± 1.2	3.6 ± 0.3	3.2 ± 0.4
µM	range	4.4 – 10.4	3.5 – 7.4	3.1 – 4.0	2.5 – 3.4
DOP	mean ± sd	0.05 ± 0.03	0.05 ± 0.04	0.04 ± 0.01	0.04 ± 0.01
µM	range	0.01 – 0.09	ld – 0.12	0.02-0.05	0.03–0.05
TAA	mean ± sd	216 ± 43	206 ± 31	76 ± 23	52 ± 14
nM	range	156 – 315	164 – 253	38 - 115	35 - 80
TCHO	mean ± sd	595 ± 43	351 ± 73	219 ± 55	427 ± 315
nM	range	547 - 671	278 - 471	162 -328	111-950