Table S1. Kinetic constants of nitrite oxidation of NOB isolates and "*Ca*. Nitrotoga" enrichments.

Organism	$K_{m(app)}$ (µM NO_2^-)	V_{max} (µmol NO_2^- mg protein^{-1} h^{-1})	V_{max} (fmol NO_2^- cell^{-1} h^{-1})	Reference
"Ca. Nitrotoga fabula KNB" (isolate, WWTP)	89	28	ND[b]	This study
"*Ca*. Nitrotoga arctica" (enrichment, arctic soil)	58	26	ND	(1)
"*Ca*. Nitrotoga sp. AM1" (enrichment, eelgrass sediment)	25	ND	6.1	(2)
Nitrospira defluvii (isolate, WWTP)	9	48	ND	(1)
Nitrospira lenta BS10 (isolate, WWTP)	27	20	ND	(1)
Nitrospira sp. ND1 (isolate, WWTP)	6	45	ND	(3)
Nitrospira japonica NJ1 (isolate, WWTP)	10	31	ND	(3)
Nitrospira moscoviensis (isolate, corroded iron pipe)	9	18	ND	(1)
Nitrospira marina Ecomares 2.1 (isolate, marine aquaculture biofilter)	54	21	ND	(4)
Nitrospira inopinata (isolate, hot groundwater)[a]	449	17	ND	(5)
Nitrobacter hamburgensis (isolate, soil)	540 - 1,370	ND	1 - 3.3	(6)
Nitrobacter hamburgensis (isolate, soil)	544	64	ND	(1)
Nitrobacter winogradskyi (isolate, soil)	36 - 260	ND	1.9 - 3.7	(6)
Nitrobacter winogradskyi (isolate, soil)	309	78	ND	(1)
Nitrobacter vulgaris (isolate, sewage)	49	164	ND	(1)
Nitrobacter sp. 311 (isolate, ocean surface water)	28	95	ND	(4)
Nitrolancea hollandica Lb (isolate, WWTP)	1,000	ND	ND	(7)
Nitrococcus mobilis 231 (isolate, ocean surface water)	120	141	ND	(4)
Nitrospina watsonii 347 (isolate, Black Sea)	19	37	ND	(4)

[a]*N. inopinata* is a complete ammonia oxidizer (comammox organism).

[b]ND=not determined.

References for Table S1

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