

Measurement of the Potential Rates of Dissimilatory Nitrate Reduction to Ammonium Based on $^{14}\text{NH}_4^+$ / $^{15}\text{NH}_4^+$ Analyses via Sequential Conversion to N_2O

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Materials

Name	Company	Catalog Number	Comments
$^{15}\text{N-KNO}_3$	SHOKO SCIENCE	N15-0197	
$^{15}\text{N-NH}_4\text{Cl}$	SHOKO SCIENCE	N15-0034	
20 mL PP bottle	SANPLATEC	61-3210-18	Wide-mouth
Aluminum cap	Maruemu	1307-13	No. 20, with hole
Boric acid	Wako	021-02195	
Centrifuge	HITACHI	Himac CR21G II	
Deoxygenized Gas Pressure & Replace Injector	SANSIN INDUSTRIAL	IP-12	
Disposable cellulose acetate membrane filter	ADVANTEC	25CS020AS	Pore size 0.22 μm , 25 mm in diameter
Disposable syringe	Teruo	SS-10SZ	10 mL
Disposable syringe	Teruo	SS-01T	1 mL
Dulbecco's Phosphate Buffered Saline (-)	NISSUI PHARMACEUTICAL	5913	
Gastight syringe	VICI Valco Instruments	4075-15010	Series A-2, 100 μL
GC/MS	shimadzu	GCMS-QP2010ultra	
GF/D	Whatman	1823-010	10 mm in diameter
Glass vial	Maruemu	0501-06	20 mL
Gray butyl rubber stopper	Maruemu	1306-03	No.20-S
H_2SO_4	Wako	192-04696	Guaranteed Reagent

K ₂ S ₂ O ₈	Wako	169-11891	Nitrogen and Phosphorus analysis grade
KCl	Wako	163-03545	Guaranteed Reagent
KNO ₃	Wako	160-04035	Guaranteed Reagent
NaOH	Wako	191-08625	Nitrogen compounds analysis grade
NH ₄ Cl	Wako	017-02995	Guaranteed Reagent
Plastic centrifuge tube	ASONE	1-3500-22	50 mL, VIO-50BN
<i>Pseudomonas chlororaphis</i> subsp. <i>aureofaciens</i>	American Type Culture Collection (ATCC)	ATCC 13985	Freeze-dried, the type strain of <i>Pseudomonas aureofaciens</i>
PTFE sealing tape	Sigma-Aldrich	Z221880	25 mm in width
Reciprocating shaker	TAITEC	0000207-000	NR-10
Screw-cap test tube	IWAKI	84-0252	11 mL
PTFE-lined cap for test tube	IWAKI	84-0262	
Tryptic Soy Broth	Difco Laboratories	211825	