Biodegradation of multiple nitrosamines by the *Bacillus* species LT1C in drinking water biofilters

**SUPPORTING INFORMATION**

### UPLC-ESI-MS/MS analysis of nitrosamines

The samples were vacuum filtered through a 0.7 μm glass fibre. After filtration, water samples (500 mL) were spiked with 20 ng/L surrogate standard (NDMA-d₆) and were basified to pH 8.0 using sodium bicarbonate. The samples were extracted using Resprep EPA 521 cartridges (2 g/6 mL, Milford, USA). The cartridges were preconditioned with 10 mL of hexane, followed in sequence by 20 mL of dichloromethane, 20 mL of methanol and 20 mL of ultrapure water. The samples were passed through the cartridges at a flow rate of 3–5 mL/min under vacuum conditions. The cartridges were then dried with nitrogen gas. Analytes were eluted with 15 mL of dichloromethane at a flow rate of 2–3 mL/min, 400 μL of a water/methanol solution (95:5, V/V) was added to the extracts, and the dichloromethane was completely removed using a rotary evaporator. Then the sample volume was gravimetrically adjusted to 0.5 mL using ultrapure water. To remove possible solid particles, all samples were filtered through syringe filters (GHP Acrodisc 13 mm, 0.2 μm, PALL) prior to injection into the UPLC-MS/MS system.

A Waters ACQUITY UPLCTM System (Waters, USA) consisting of an ACQUITY UPLCTM binary solvent manager and an ACQUITY UPLCTM sample manager were used. Chromatographic separation of the compounds was performed at 50 °C using an ACQUITY UPLC BEH C₁₈ column (150 mm × 2.1 mm, 1.7 μm particle size) (Waters, USA). Mobile phase A was methanol and mobile phase B was 10 mmol/L ammonium bicarbonate in ultrapure water. The following gradient was used: 0–3 min, 5% A to 45% A; 3–5 min, 45% A to 95% A; 5–7.5 min, 95% A; 7.5–8 min, 95% A to 5% A; and 8.0–15.0 min, reequilibrate with 5.0% A. The flow rate of the mobile phase was 0.2 mL/min and the injection volume was 30 μL.

The analyses were conducted using a Waters Micromass Quattro Premier XE detector equipped with an electrospray ionization source. Data acquisition was performed in the positive ion mode and the optimized parameters were as follows: source temperature, 110 °C; desolvation temperature, 400 °C; capillary voltage, 4.0 kV; cone voltage, 28 V; desolvation gas flow, 850 L/h; cone gas flow, 50 L/h; and multiplier voltage, 650 V. Argon (99.999%) was used as the collision gas, and the argon pressure in the collision cell was maintained at 3.5 × 10⁻³ mbar. Quantitative analysis was performed in the multiple reaction monitoring (MRM) mode. All of the data were acquired and processed using MassLynx 4.1 software.