Retentate from Reverse Osmosis Stimulates Degradation Potential of Bioaugmentation Candidate *Aminobacter sp. MSH1*

Ole Hylling\(^a\), Mahdi Nikbakht Fini\(^b\), Jens Muff\(^b\), Henrik Tækker Madsen\(^c\), Jens Aamand\(^d\), Lars H. Hansen\(^b\), Lea Ellegaard-Jensen\(^e\)

---

**BACKGROUND & SUMMARY**

- **Groundwater is an important resource** in drinking water production, but is threatened by recalcitrant pollutants, such as the pesticide residue 2,6-dichlorobenzamide (BAM)\(^1\).
- **We aim to combine** retentate from membrane separation and bioaugmentation as a novel biotechnology for removal of micropollutants (BOX 1).
- **Here we show results** (BOX 3) from batch experiment(s), using a BAM-degrading bacteria, *Aminobacter sp. MSH1*, in untreated and retentate water (BOX 2).

**SCIENTIFIC QUESTIONS**

- How is BAM degradation potential of *Aminobacter sp. MSH1* affected in different membrane retentates versus untreated water?
- Is there an optimal retentate with respect to BAM degradation?
- Is MSH1 population negatively affected in the retentates?

---

**CONCLUSIONS**

- MSH1 degradation potential is stimulated in the membrane retentates
- Stimulation of degradation potential in retentates is irrespective of BAM concentration
- MSH1 population remains stable

**PERSPECTIVES**

- Retentate from membrane separation could act as stimulating feed for bioaugmented sand filters in drinking water production – prolonging the stability of introduced degrader strain
- Giving way for a novel environmentally friendly biotechnology for eliminating micropollutants during water purification

---