

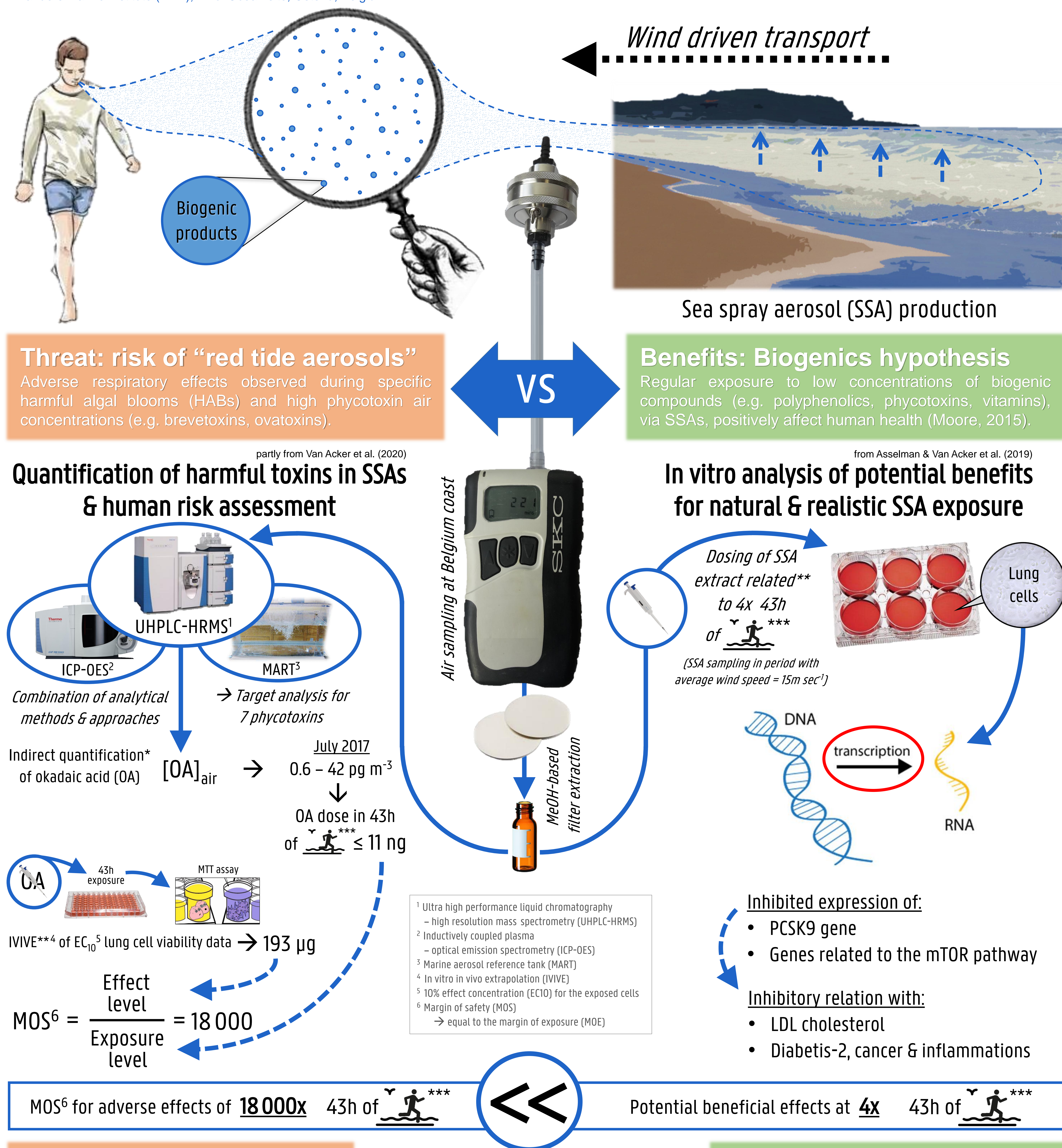
Sea spray exposure to man: initial risk-benefit assessment

Emmanuel Van Acker¹, Jana Asselman², Maarten De Rijcke³, Karel A.C. De Schamphelaere¹ and Colin R. Janssen^{1,2}

¹ Laboratory of Environmental Toxicology and Aquatic Ecology, Environmental Toxicology Unit - GhEnToxLab, Campus Coupure, Ghent University, Belgium.

² Ghent University Campus Oostende – Ostend Science Park, Bluebridge, Wetenschapspark 1, 8400 Ostend, Belgium.

³ Flanders Marine Institute (VLIZ), InnovOcean site, Ostend, Belgium.



Risk assessment

Based on the MOS (>10⁴) for the quantified phycotoxin (OA), together with the current knowledge on toxic HABs, we do not expect a human health risk due to phycotoxins in SSAs at the Belgium coast.

* Indirect quantification of [OA]_{air} for exposure derivation based on:
In field [Na⁺]_{air} measurements & In MART³ [OA]_{air} / [Na⁺]_{air} measurements

** Extrapolation of EC₁₀⁷ data & dosing of SSA extract based on:
In vitro vs in vivo dose per cell surface area & ***

*** = Reference exposure scenario: inhaled air volume and SSA dose during 43h of exercise (≤ 100L min⁻¹) at the waterline

Benefit assessment

Asselman & Van Acker et al. (2019) was the first in vitro study to indicate a positive relation between SSA exposure & human health. Together with previous epidemiological studies this study supports the biogenics hypothesis.

Conclusion

Based on this research, the current knowledge regarding HABs and the aerosolisation of marine biogenic products, we conclude that the chance of beneficial human health effects of marine biogenics in sea spray at the Belgium coast is larger than the potential risk for adverse effects.

