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| Stressor | Relevance | Mechanism | Literature | Findings | Study Conc. | Solvent | Concentration, UKSHS 2007 |
| Antibiotics | | | | | | | |
| Chloramphenicol | Common and long-used antibiotic (bacteriostatic) | Inhibits protein chain elongation via peptidyl transferase | (Backhaus and Grimme, 1999; Kümmerer, 2009) | Toxic to *V. fischeri* over chronic (24h) exposures | EC90 – 0.129 mg.l-1  EC50 – 0.064 mg.l-1  EC90 – 0.019 mg.l-1 | Resistance = specific inactivating chloramphenicol acetyltransferase | 53.8 ng.L-1 (Choi *et al.*, 2008) (a high measure in the Han River, Korea) |
| Amoxycillin | Common antibiotic | Beta-lactam inhibition? | (Costanzo, Murby and Bates, 2005) | No evidence of resistance in sewerage or stream bacteria | Significant drop in mean denitrification rates (33%) by bacteria @ 1mg.l-1 | Resistance generally = Beta-Lactamase production, sometimes efflux | ~120 ng.l-1 (Andreozzi *et al.*, 2004) (a high measure, in Italy, in 2004…) |
| Pesticides | | | | | | | |
| Atrazine | Second most commonly used herbicide | Photosystem inhibition, endocrine disruptor? | (Palma *et al.*, 2008) | Inhibition of luminescence in *V. fischeri* in 30 minutes | EC50 – 69.4 mg.l-1  Another source: 39.9 mg.l-1 | Synthetic freshwater | 253 ng/L (Loos *et al.*, 2010)  EU peak groundwater concentration |
| Metaldehyde | Most common molluscicide, main cause of PCVs in UK | Inhibits metabolism/ damages CNS in molluscs, humans | (Thomas *et al.*, 2017)  The only paper on bacteria and metaldehyde out there! | Metaldehyde is not normally broken down by water processing or aquatic bacteria  But Acinetobacter E1 (soil) can use it as a food source! | 0-1000 μM  (not that it’s directly comparable) | Mineral medium  Water sol:  0.188 g/L @ 20 °C | 0.5 ug/L typically during Oct-Dec app. Period (UK rivers) (Kay and Grayson, 2014) |
| Heavy Metals | | | | | | | |
| Copper | Major anthropogenic pollutant, and essential nutrient | Oxidative stress | (Mighanetara *et al.*, 2009; Wang *et al.*, 2009) | Inhibition of luminescence in *V. fischeri* in 60 minutes | EC50 - 146.88 ug.l-1@ 30 minutes | 2% saline | 20.64 mg/kg mean  96.70 mg/kg max |
| Nickel | Major anthropogenic pollutant | Oxidative stress (weak), enzyme disruption | (Macomber and Hausinger, 2011) | *V. fischeri* luminescence 30 minutes | EC50 – 85 mg/l | Water + 20% soil NI slurry | 21.1 mg/kg mean  216 mg/kg max |
| (Poly)aromatic Hydrocarbons | | | | | | | |
| Benzo[a]pyrene (PAH) | Highly toxic PAH produced by incomplete combustion | Membrane damage, DNA damage | (Juhasz and Naidu, 2000) | Many bacteria can degrade Benzo[a]pyrene | various | various | 215 µg/kg (urban mean)  24800 µg/kg (urban max) |
| Benzene (Solvent, AH) | AH petrol additive, used as stock in many synthesis pipelines | Mutagenesis | (Earl *et al.*, 2003; Hartnik *et al.*, 2007; Haritash and Kaushik, 2009) | Inhibition of luminescence in *V. fischeri* in 15 minutes  Many aquatic bacteria are known to degrade benzene | EC50 102.78 mg.l-1 | DMSO  Water sol:  1.79 g/L @ 25°C | 0.02 mg/kg (approximate mean for Europe, so not that useful) |