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Photochemical, thermal, biological and long-term degradation of celecoxib in river water. Degradation products and adsorption to sediment.

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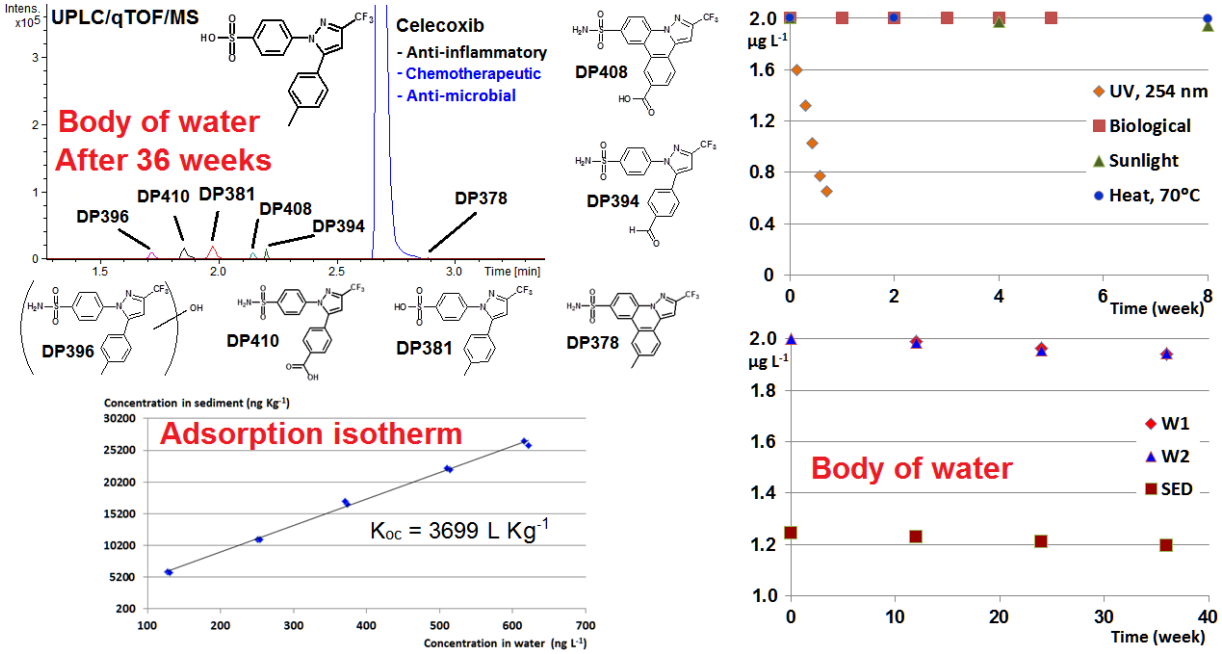
Graphical abstract



HIGHLIGHTS

- Celecoxib is a persistent drug in surface water.
- The solar radiation promotes its slow degradation.
- 11 degradation products tentatively identified from high-resolution MS/MS spectra.
- Sulfonic, carboxylic and hydroxylated derivatives are the main degradation products.
- Celecoxib can be partially adsorbed onto aquatic sediment.

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