

Enantiomeric Occurrence and Distribution of Chiral Organochlorine Compounds in U.S. River Sediment and Biota

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River sediment and biota (fish, bivalves) from throughout the continental U.S. were analyzed for chiral organochlorine compounds (*o,p'*-DDT and DDD, some chlordane compounds, PCB atropisomers) to assess spatial trends in environmental chirality. Chiral PCB enantiomers were racemic in most sediment, but were nonracemic at sites heavily impacted by PCBs and subject to reductive dechlorination. Pesticide enantiomers were present in nonracemic quantities in both media, suggesting enantioselective processing; however, enantiomeric ratios of PCBs and pesticides were significantly different between sediment and biota taken at the same site and time, suggesting enantioselective processes in biota (uptake, metabolism, depuration) not present in sediment. Enantioselectivity was reversed between fish and bivalves for some compounds.