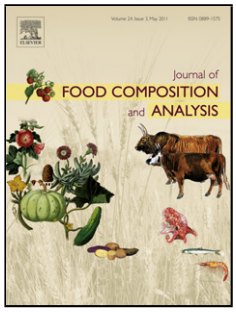

Title: A global database of polybrominated diphenyl ether flame retardant congeners in foods and supplements

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<DOCHEAD>Original research article

<AT>A global database of polybrominated diphenyl ether flame retardant congeners in foods and supplements

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Chemical compounds studied in this article
PBDE-17 (PubChem CID: 14274807); PBDE-28 (PubChem CID: 12110098); PBDE-47 (PubChem CID: 95170); PBDE-66 (PubChem CID: 15509893); PBDE-85 (PubChem CID: 177368); PBDE-99 (PubChem CID: 36159); PBDE-100 (PubChem CID: 154083); PBDE-153 (PubChem CID: 155166); PBDE-154 (PubChem CID: 15509898); PBDE-183 (PubChem CID: 15509899); PBDE-209 (PubChem CID: 14410)

 <ABS-HEAD>Highlights► Novel global database of congener-specific PBDE levels in foods and supplements► High levels in supplements, poultry liver, poultry fat challenge usual fish focus► Moderate and low PBDE foods may be key sources in non-fish consumers, vegetarians► Differentiating PBDE items in dietary tools will improve diet and risk assessments► Data gaps for high and moderate PBDE sources will help prioritize analytic effort

<ABS-HEAD>Abstract

<ABS-P>Polybrominated diphenyl ether (PBDE) flame retardants contaminate the food supply yet health effects are uncertain. A global PBDE database was developed to improve diet and disease risk assessments. Congener-specific data from 2002-2015 were extracted from 86 articles into a source database representing 32 countries. Geometric mean PBDE concentrations for foods and supplements were derived for 11 congeners individually and combined, and used to calculate means for 27 dietary groups (pg/g ww). Dark or oily fish had the highest data availability, followed by shellfish, eggs, dairy products and dairy fats. Data were less available for white or lean fish, red meat, poultry meat, processed meats, fish oil supplements; 17 groups had very limited data. At the group level, mean $\sum_{11}$PBDE was extremely high for fish oil supplements (13,862 pg/g) and high for most aquatic groups (462-837 pg/g),