Supplemental Table S3. Study characteristics and serum PBDE concentrations in prior thyroid cancer studies and the United States National Health and Nutrition Examination Survey.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Lead Author, Year** | **Study Design** | **Study Location, Population,  Year of Sample Collection** | **Exposure Media** | **Type of Thyroid Cancer** | **Sample Size** | **PBDEs Reported in Serum** | **%>DL in Serum** | **Median (25th, 75th %) in Controls (ng/g lipid)\*** | **Key Results** |
| Hoffmann, 2017 | Case-control | NC (Duke area)  Males & females,  2014-2016 | Dust and serum | Papillary | 140 (70 cases, 70 controls) | BDE-47  BDE-99  BDE-100  BDE-153  BDE-154  BDE-209 | > 70%  < 70%  < 70%  > 70%  < 70%  < 70% | 9.9  -  -  5.0  -  - | Significant associations for BDE-209 in dust (< or > median concentration) |
| Aschebrook-Kilfoy, 2015 | Nested Case-control | Multi-state (Washington DC, MI, WI, HI, AL, CO, UT, MO, ID)  Males & females,  1992-2001 | Serum | Papillary, Follicular, Medullary, anaplastic, unknown | 311 (104 cases, 207 controls) | BDE-17 BDE-28 BDE-47 BDE-66 BDE-85 BDE-99 BDE-100 BDE-153 BDE-154 BDE-183 | 4.2  27.0  93.9  4.8  19.6  58.5  65.6  65.3  19.9  10.3 | <LOD (<LOD–<LOD)  <LOD (<LOD–1.2)  12.9 (5.1–34.3)  <LOD (<LOD–<LOD)  <LOD (<LOD–<LOD)  2.8 (<LOD–6.2)  1.7 (<LOD–4.7)  1.6 (<LOD–3.8)  <LOD (<LOD–<LOD)  <LOD (<LOD–<LOD) | No significant associations (BDE-209 not measured) |
| Current study | Case-control | CT  Caucasian females,  2010-2013 | Serum | Papillary | 500 (250 cases, 250 controls) | BDE-17 BDE-28 BDE-47 BDE-85 BDE-99 BDE-100 BDE-153 BDE-154 BDE-183  BDE-209  BB-153 | 4  82  99  33  95  98  100  37  28  84  97 | <LOD (<LOD–<LOD)  0.51 (0.26 - 1.0)  7.28 (4.04 - 15.33)  <LOD (<LOD–<LOD)  1.21 (0.66 - 2.74)  1.47 (0.78 - 2.86)  3.08 (2.02 - 5.86)  <LOD (<LOD–<LOD)  <LOD (<LOD–<LOD)  1.55 (1.00 - 2.41)  1.45 (0.94 - 2.44) | No statistically significant positive associations; some inverse associations observed |
| US National Health and Nutrition Examination Survey (NHANES) | NA | US representative population  White females 40-59 yrs in 2011-2012 | Serum | NA | NA | BDE-17 BDE-28 BDE-47 BDE-85 BDE-99 BDE-100 BDE-153 BDE-154 BDE-183  BDE-209  BB-153 | <60%  >60%  >60%  >60%  >60%  >60%  >60%  >60%  <60%  <60%  >60% | <LOD (<LOD)\*  1.50 (0.41)  16.5 (2.5)  0.544 (0.238)  5.76 (2.6)  4.63 (1.47)  9.07 (1.99)  0.446 (0.142)  <LOD (<LOD)  <LOD (<LOD)  2.97 (0.64) | NA |

\*For NHANES, these values indicate the weighted arithmetic mean and unadjusted standard error of pooled serum concentrations  
NA, Not applicable