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-47BDE-99BDE-100BDE-153BDE-154BDE-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-17BDE-28BDE-47BDE-66BDE-85BDE-99BDE-100BDE-153BDE-154BDE-183 | 4.227.093.94.819.658.565.665.319.910.3 | <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 | CTCaucasian females, 2010-2013 | Serum | Papillary  | 500 (250 cases, 250 controls) | BDE-17BDE-28BDE-47BDE-85BDE-99BDE-100BDE-153BDE-154BDE-183BDE-209BB-153 |  4829933959810037288497 | <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 populationWhite females 40-59 yrs in 2011-2012 | Serum | NA | NA | BDE-17BDE-28BDE-47BDE-85BDE-99BDE-100BDE-153BDE-154BDE-183BDE-209BB-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