

ly, and 78.1 and 68.7% of those in the saury muscle and gut tissues. Additionally, 1,3,6,8- and 1,3,7,9-TCDDs were dominant isomers in all of the samples. These dioxins are known to be impurities in the agrochemical chloronitrofen (CNP)¹²⁾, which was one of the principal herbicides used in paddy fields in Japan in the past. These findings suggest that CNP might have been a major source of the PCDDs/PCDFs in the samples. OCDD is also known to be present as an impurity in the agrochemical pentachlorophenol (PCP)¹²⁾, which was one of the principal herbicides used in paddy fields in Japan. However, the isomer was not dominant in the total PCDD/PCDF contents in all of the samples. 2,3,7,8-TCDF and 2,3,4,7,8-PeCDF had relatively high contributions to TCDFs and PeCDFs in all of the samples.

The profiles of the dioxin-like PCBs isomers in the samples are shown in Fig. 3. Again, the patterns observed in the muscle and gut tissues were similar in both the squid and fish. PCB 118 was the dominant isomer, followed by PCB 105. In total, these isomers accounted for 81.3 and 81.0% of the total dioxin-like PCB contents of the squid muscle and gut tissues, respectively, and 85.0 and 85.2% of those in the saury muscle and gut tissues. These profiles were similar to those of the commercial PCB mixtures Kanechlor 400 and 500¹³⁾. This finding suggests that these PCBs could have been the main sources of the dioxin-like PCBs in our samples. The similarity of the above-mentioned profiles between the two tissues also implies that the internal organs comprising the gut tissues are unlikely to accumulate specific dioxin isomers in Japanese common squid and saury. The profiles of PCDD/PCDF congeners and dioxin-like PCBs isomers in the other samples (designated numbers 2 and 3 in Table 1) are similar to those in Fig. 2 and 3 (data not shown).

In conclusion, our data suggest that consumption of the gut tissues of the Japanese common squid could potentially significantly increase the dietary intake of dioxins, whereas saury gut tissues should have little effect. Our data should prove useful for further risk evaluations of these fishery products.

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