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COMPARISON OF PROPOSED HHBAFs FOR THE GLI

by

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which the following were obtained:

Predicted BCF (at 7.6% lipids) = 39.0

Normalized BCF (at 1.0% lipids) = 5.13

Food Chain Multiplier = 1.0

For 5.0% lipids at trophic level 4 the predicted HHBAF that is calculated from the "typical Log P" is $(5.13)(5.0)(1.0) = 26$.

> Predicted BAF based on Log P and measured BCF:

BCF	% L	Norm BCF (1.0% L)	Reference
8	4.8	1.67	Barrows et al. 1980

Geometric mean normalized BCF = 1.67

For 5.0% lipids at trophic level 4 the predicted HHBAF that is calculated from the geometric mean normalized BCF is $(1.67)(5.0)(1.0) = 8.4$.

Note: This BCF was based on uptake of radioactivity with no verification of the parent chemical. Thus this BCF and the resulting predicted HHBAF might be too high.

> No measured BAF was found.

TETRACHLOROETHYLENE [CAS#: 127-18-4]

> Predicted BAF based on Log P:

The following values were found for Log P:

3.40	MedChem Star
3.02	MedChem Calc
2.88	Isnard and Lambert 1989

A value of 3.15 was selected as a "typical Log P", from which the following were obtained:

Predicted BCF (at 7.6% lipids) = 122.6

Normalized BCF (at 1.0% lipids) = 16.1

Food Chain Multiplier = 1.0

For 5.0% lipids at trophic level 4 the predicted HHBAF that is calculated from the "typical Log P" is $(16.1)(5.0)(1.0) = 80$.

> Predicted BAF based on Log P and measured BCF:

BCF	% L	Norm BCF (1.0% L)	Reference
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Geometric mean normalized BCF = 10.2

For 5.0% lipids at trophic level 4 the predicted HHBAF that is calculated from the geometric mean normalized BCF is $(10.2)(5.0)(1.0) = 51$.

Note: This BCF was based on uptake of radioactivity with no verification of the parent chemical. Thus this BCF and the resulting predicted HHBAF might be too high.

> No measured BAF was found.

THALLIUM [CAS#: 7440-28-0]

Barrows et al. (1980) reported a BCF of 34 based on whole-body measurements with the bluegill, whereas Zitko et al. (1975) obtain a BCF of 131 for muscle of Atlantic salmon. The geometric mean of 34 and 131 is 67, which will be used as the predicted HHBAF for thallium.

TOLUENE [CAS#: 108-88-3]

> Predicted BAF based on Log P:

The following values were found for Log P:

2.70	MedChem Star
2.79	MedChem Calc
2.78	Hammers et al. 1982
2.78	Burkhard et al. 1985
2.65	Miller et al. 1985
2.786	de Bruijn et al. 1989
2.63	Isnard and Lambert 1989

Values ranging from 2.11 to 3.06 were cited by Eadsforth and Moser (1983), de Bruijn et al. (1989), and Brooke et al. (1990). A value of 2.76 was selected as a "typical Log P", from which the following were obtained:

Predicted BCF (at 7.6% lipids) = 60.3
Normalized BCF (at 1.0% lipids) = 7.93
Food Chain Multiplier = 1.0

For 5.0% lipids at trophic level 4 the predicted HHBAF that is calculated from the "typical Log P" is $(7.93)(5.0)(1.0) = 40$.

> Predicted BAF based on Log P and measured BCF: