QUASIMEME

Quality assurance of information for marine environmental monitoring

Certificate of Analysis

Biota

REFERENCE MATERIAL

Biota sample 368

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis Biota 368

General Information

In this report an overview is given of analytical data for this sample collected in our proficiency testing program. The consensus values are calculated using a robust statistical model. With this NDA model mean and standard deviation are calculated using all reported data when at least 4 results are left after removal of reported 'lower than' (<) and 0 (= zero) values. No outliers are removed.

This report is divided into two sections: Consensus Values and Indicative Values. The division is made on the reliability of the data. Consensus Values are based on at least 10 results while the relative uncertainty is smaller than 6.25%. Indicative Values are based on a relative uncertainty of maximum 35% with at least 4 and less than 10 results or a relative uncertainty higher than 6.25%.

For each determinand the following parameters are given: mean, standard deviation, coefficient of variation, number of results, median, MAD (Median of Absolute Deviation) and the uncertainty in the assigned value. The confidence limits (at 95 % probabilty) are calculated for these determinands.

The results of each determinand is expressed on a wet weight basis.

Sample information

QUASIMEME reference materials cover a range of natural Biota species from contaminated waters from the North Sea and/or Mediterranean. The supplied wet test materials are homogenised and sterilised by autoclaving.

This Biota sample 368 of Herring from North Sea (northern part) is prepared for the QUASIMEME proficiency programs. The results on which the values in this report are based were taken from the periods given in the following table.

Year.Round	Program	Sample Round Id
2021.1	BT1	QTM130BT

Consensus Values BT1

Method: Metals - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Arsenic	mg/kg	2.19	0.177	8.1	24	2.17	0.115	0.045	2.12 - 2.27
Copper	µg/kg	892	51.0	5.7	22	883	31.0	13.6	870 - 915
Iron	mg/kg	8.52	0.777	9.1	15	8.74	0.540	0.251	8.10 - 8.95
Manganese	µg/kg	255	37.8	14.8	14	260	24.5	12.6	234 - 277
Mercury	µg/kg	27.4	4.66	17.0	28	28.6	3.30	1.10	25.6 - 29.2
Selenium	µg/kg	401	67.1	16.7	18	394	46.1	19.8	368 - 434
Zinc	mg/kg	9.22	1.206	13.1	20	9.36	0.845	0.337	8.65 - 9.78

Method: Weight - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Dry-weight	%	37.8	0.41	1.1	16	37.8	0.27	0.13	37.57 - 38.01

Indicative Values BT1

Method: Metals - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Aluminium	mg/kg	1.04	0.536	51.5	6	0.998	0.387	0.274	0.506 - 1.58
Cadmium	µg/kg	3.46	0.889	25.7	19	3.62	0.620	0.255	3.03 - 3.89
Calcium	mg/kg	595	42.9	7.2	4	593	27.9	26.8	535 - 654
Chromium	µg/kg	46.7	13.48	28.9	18	47.3	9.15	3.97	40.0 - 53.4
Cobalt	µg/kg	5.32	0.699	13.1	9	5.53	0.530	0.291	4.79 - 5.85
Lead	µg/kg	9.70	3.070	31.6	15	11.20	2.169	0.991	8.01 - 11.4
Magnesium	mg/kg	328	128.9	39.3	4	327	85.5	80.5	149 - 507
Molybdene	µg/kg	6.31	2.232	35.3	4	6.50	1.510	1.395	3.22 - 9.41
Nickel	µg/kg	16.6	9.77	58.7	13	18.0	7.10	3.39	10.8 - 22.5
Silver	µg/kg	0.671	0.2921	43.5	4	0.805	0.2000	0.1826	0.266 - 1.08
Sodium	mg/kg	902	16.9	1.9	4	897	12.0	10.5	878 - 925
Vanadium	µg/kg	5.29	1.381	26.1	7	5.00	0.970	0.652	4.05 - 6.52

Method: Lipids - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Total-Lipid	%	19.4	0.84	4.3	7	19.3	0.57	0.40	18.6 - 20.1