



QUASIMEME

Quality assurance of information
for marine environmental monitoring

Certificate of Analysis



Biota

REFERENCE MATERIAL

Biota sample 342



Certificate of Analysis Biota 342

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, the 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 8 results and a maximum relative uncertainty of 6.25%. Indicative Values are based on a maximum relative uncertainty of 35% and a minimum of 4 and maximum of 7 results, or a relative uncertainty greater than 6.25% when there are at least 8 results.

For each determinand the following parameters are given: mean, standard deviation, coefficient of variation, number of results, median, MAD (Median of Absolute Deviation), the uncertainty of the mean (consensus or indicative) value and the relative uncertainty.

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 342 of Mussel tissue from Commercial mussels from Chili 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
2024.1	BT1	QTM143BT
2020.2	BT1	QTM128BT
2019.1	BT1	QTM123BT
2016.2	BT1	QTM112BT
2015.2	BT1	QTM108BT



Consensus Values BT1

Method: Metals - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Mercury	µg/kg	2.40	0.766	31.9	127	2.42	0.420	0.085	3.53
Copper	µg/kg	1042	88.8	8.5	160	1041	50.9	8.78	0.842
Cadmium	µg/kg	237	20.7	8.7	168	239	12.4	1.99	0.840
Aluminium	mg/kg	12.9	4.07	31.6	64	13.1	3.05	0.637	4.93
Lead	µg/kg	38.7	8.54	22.1	130	39.1	5.25	0.937	2.42
Cobalt	µg/kg	30.8	2.95	9.6	72	31.0	1.99	0.435	1.41
Iron	mg/kg	22.0	2.29	10.4	96	22.0	1.57	0.292	1.33
Manganese	µg/kg	1222	133	10.9	100	1215	80.5	16.6	1.36
Lithium	µg/kg	68.8	10.5	15.3	18	69.6	4.80	3.10	4.51
Selenium	µg/kg	467	55.7	11.9	110	466	34.1	6.63	1.42
Arsenic	mg/kg	1.97	0.186	9.5	156	1.97	0.119	0.019	0.946
Chromium	µg/kg	119	24.2	20.4	135	122	16.8	2.61	2.20
Nickel	µg/kg	99.5	18.0	18.1	128	102	10.3	1.99	2.00
Zinc	mg/kg	26.6	2.28	8.6	164	26.7	1.50	0.222	0.836
Vanadium	µg/kg	201	34.9	17.3	63	200	21.0	5.49	2.73
Sodium	mg/kg	3213	332	10.3	28	3165	252	78.5	2.44
Magnesium	mg/kg	565	41.6	7.4	33	565	22.0	9.06	1.60
Phosphorus	mg/kg	2248	278	12.3	19	2200	175	79.6	3.54
Potassium	mg/kg	1488	125	8.4	26	1505	89.0	30.6	2.06
Calcium	mg/kg	380	41.1	10.8	26	386	25.7	10.1	2.65
Titanium	µg/kg	1161	208	17.9	14	1149	121	69.5	5.98
Rubidium	µg/kg	582	35.8	6.2	12	577	25.0	12.9	2.22
Strontium	µg/kg	4418	352	8.0	14	4505	259	118	2.66
Molybdene	µg/kg	61.3	8.28	13.5	43	62.0	5.50	1.58	2.57
Uranium	µg/kg	20.5	1.97	9.6	30	20.6	1.22	0.450	2.19

Method: Weight - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Dry-weight	%	22.1	0.303	1.4	105	22.2	0.160	0.037	0.167
Ash-Weight	%	1.39	0.059	4.3	14	1.40	0.031	0.020	1.42

Method: Lipids - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Total-Lipid	%	2.33	0.174	7.5	26	2.29	0.125	0.043	1.83



Indicative Values BT1

Method: Metals - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Silver	µg/kg	1.40	0.656	46.7	30	1.57	0.487	0.150	10.7
Tin	µg/kg	74.1	47.1	63.6	33	88.8	29.5	10.3	13.8
Sulfur	mg/kg	2540	201	7.9	6	2550	79.0	102	4.03
Gallium	µg/kg	3.87	1.69	43.6	8	4.22	1.02	0.746	19.3
Yttrium	µg/kg	14.8	0.438	3.0	4	14.8	0.200	0.274	1.85
Antimony	µg/kg	1.27	0.353	27.9	25	1.36	0.201	0.088	6.97
Cesium	µg/kg	2.13	0.289	13.6	7	2.20	0.170	0.136	6.40
Barium	µg/kg	82.3	37.6	45.8	30	87.8	22.7	8.59	10.4
Lanthanum	µg/kg	7.90	0.954	12.1	4	7.90	0.430	0.596	7.54
Cerium	µg/kg	12.4	1.99	16.1	4	12.3	1.06	1.24	10.0
Neodymium	µg/kg	9.72	0.235	2.4	4	9.66	0.124	0.147	1.51
Thallium	µg/kg	0.856	0.201	23.5	16	0.906	0.092	0.063	7.35
Bismuth	µg/kg	0.421	0.173	41.1	7	0.405	0.088	0.082	19.4