

Investigation of strontium transport and strontium quantification in cortical rat bone by time-of-flight secondary ion mass spectrometry

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Experimental procedure

Preparation of bone samples

The experimental group OVX rats received a diet deficient in several elements when compared to the group SHAM, which received a standard diet (Altromin-C1034 and C100, respectively; Altromin-Spezialfutter GmbH, Germany, Table S1).

Table S 1: Ingredients of both standard and multi – deficiencies diet

Ingredients	Units	Content/normal	content / diet
Alanine	mg/kg	2528	8703.23
aluminum	mg/kg	3.706	3.566
Arachidic C-20: 0	mg/kg	250	250
Arachidonic acid C 20: 4	mg/kg	2.5	2.5
Arginine	mg/kg	9828.79	11513.058

Aspartic acid	mg/kg	3583.14	15052.732
Behenic C-22: 0	mg/kg	250	250
Benzoic acid	mg/kg	100	100
Biotin	mg/kg	0.201	0.5
Calcium	mg/kg	9310.506	1367.728
Capric acid C-10: 0	mg/kg	2.5	2.5
Chlorine	mg/kg	3630000	3943.798
Choline chloride	mg/kg	1011.5	1002.875
Cobalt	mg/kg	0.147	0.148
Copper	mg/kg	5.751	5.366
Crude Ash	mg/kg	54943.225	20165.35
Crude Fat	mg/kg	50830	50651
Crude Fiber	mg/kg	40450	40544.725
Crude Protein	mg/kg	176115	180682.875
Cystine	mg/kg	3196.18	4033.917
Digest.Phosphorus	mg/kg	7199.565	475.212
Disaccharide	mg/kg	110960.5	98216.06
Docosahexaenoic acid C22: 6	mg/kg	2.5	2.5
Eicosadienoic C-20: 2	mg/kg	250	250
Eicosaenoic acid C-20: 1	mg/kg	250	250
Eicosapentaenoic acid C20: 5	mg/kg	2.5	2.5
Energie/Metab.	kcal/kg	3518.055	3662.779
Erucic acid C-22: 1	mg/kg	2.5	2.5
Fluorine	mg/kg	4.17	3.584
Folic acid	mg/kg	10.0024	10.0006
Glutamic acid	mg/kg	23674.97	25377.87
Glycine	mg/kg	3136	5905.315
Histidine	mg/kg	5275.79	6190.55
Inositol	mg/kg	111	102.75
Iodine	mg/kg	0.514	0.396
Iron	mg/kg	178.579	179.188
Isoleucine	mg/kg	7222.82	8811.956
Lauric acid C 12: 0	mg/kg	2.5	2.5
Leucine	mg/kg	14762.77	16897.134
Linoleic C18: 2	mg/kg	35050	35050
Linolenic C18: 3	mg/kg	150	150
Lysine	mg/kg	17400.97	15933.41
Magnesium	mg/kg	683.506	666.622
Manganese	mg/kg	100.888	99.984
margaric	mg/kg	2.5	2.5
Methionine	mg/kg	10688	7689.508
Moisture	mg/kg	81735.625	81323.725
Molybdenum	mg/kg	0.198	19.825
Myristinsäure C-14: 0	mg/kg	2.5	2.5
Nervonic C-24: 1	mg/kg	2.5	2.5
Nicotinic acid	mg/kg	50.17	50.043
Oleic acid C-18: 1	mg/kg	10950	10950
Palmitic acid C16: 0	mg/kg	2700	2700
Palmitoleic acid C-16: 1	mg/kg	2.5	2.5
Pantothenic acid	mg/kg	50.106	50.027

Pentadecanoic C-15: 0	mg/kg	2.5	2.5
Phenylalanine	mg/kg	7171.97	11759.017
Phosphorus	mg/kg	7522.765	533.069
Polysaccharide	mg/kg	471700	513151.75
Potassium	mg/kg	7088.682	5200.773
Proline	mg/kg	12762.98	9855.784
Selenium	mg/kg	0.334	0.283
Serine	mg/kg	5267.8	10880.31
Sodium	mg/kg	2488.262	2076.593
Stearic acid C-18: 0	mg/kg	1250	1250
Sulfur	mg/kg	2791.54	3180.027
Threonine	mg/kg	7154.17	8376.773
tricosanoic	mg/kg	2.5	2.5
Tryptophan	mg/kg	1976.96	2127.1
Tyrosine	mg/kg	9285.01	8266.867
Valine	mg/kg	3296.14	10181.275
Vitamin A	I.E./kg	15000	15000
Vitamin B1	mg/kg	20.04	20.01
Vitamin B12	mg/kg	0.03	0.03
Vitamin B2	mg/kg	20.322	20.081
Vitamin B6	mg/kg	15.034	15.009
Vitamin C	mg/kg	20	19.5
Vitamin D3	I.E./kg	500	0
Vitamin E	mg/kg	163.9	163.6
Vitamin K3 (as Menadione)	mg/kg	10	5
Zinc	mg/kg	29.299	31.433