Gustavo Barja

List of Publications by Year
in descending order

125 papers	11,281 citations	22099 59 h-index	29081 104 g-index
131 all docs	131 docs citations	131 times ranked	7941 citing authors

#	Article	IF	Citations
1	Free radicals and aging. Trends in Neurosciences, 2004, 27, 595-600.	4.2	534
2	Oxidative damage to mitochondrial DNA is inversely related to maximum life span in the heart and brain of mammals. FASEB Journal, 2000, 14, 312-318.	0.2	473
3	Mitochondrial oxygen radical generation and leak: sites of production in states 4 and 3, organ specificity, and relation to aging and longevity. Journal of Bioenergetics and Biomembranes, 1999, 31, 347-366.	1.0	425
4	Caloric restriction decreases mitochondrial free radical generation at complex I and lowers oxidative damage to mitochondrial DNA in the rat heart. FASEB Journal, 2001, 15, 1589-1591.	0.2	340
5	The rate of free radical production as a determinant of the rate of aging: evidence from the comparative approach. Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology, 1998, 168, 149-158.	0.7	316
6	Influence of aging and long-term caloric restriction on oxygen radical generation and oxidative DNA damage in rat liver mitochondria. Free Radical Biology and Medicine, 2002, 32, 882-889.	1.3	252
7	Updating the Mitochondrial Free Radical Theory of Aging: An Integrated View, Key Aspects, and Confounding Concepts. Antioxidants and Redox Signaling, 2013, 19, 1420-1445.	2.5	246
8	Minireview: The Role of Oxidative Stress in Relation to Caloric Restriction and Longevity. Endocrinology, 2005, 146, 3713-3717.	1.4	244
9	Low Mitochondrial Free Radical Production Per Unit O₂Consumption Can Explain the Simultaneous Presence of High Longevity and High Aerobic Metabolic Rate in Birds. Free Radical Research, 1994, 21, 317-327.	1.5	243
10	Membrane Fatty Acid Unsaturation, Protection against Oxidative Stress, and Maximum Life Span. Annals of the New York Academy of Sciences, 2002, 959, 475-490.	1.8	233
11	Mitochondrial Free Radical Production and Aging in Mammals and Birdsa. Annals of the New York Academy of Sciences, 1998, 854, 224-238.	1.8	232
12	Mitochondrial oxidative stress, aging and caloric restriction: The protein and methionine connection. Biochimica Et Biophysica Acta - Bioenergetics, 2006, 1757, 496-508.	0.5	225
13	Is the Mitochondrial Free Radical Theory of Aging Intact?. Antioxidants and Redox Signaling, 2006, 8, 582-599.	2.5	221
14	Methionine restriction decreases mitochondrial oxygen radical generation and leak as well as oxidative damage to mitochondrial DNA and proteins. FASEB Journal, 2006, 20, 1064-1073.	0.2	217
15	Sites and mechanisms responsible for the low rate of free radical production of heart mitochondria in the long-lived pigeon. Mechanisms of Ageing and Development, 1997, 98, 95-111.	2.2	203
16	Rate of generation of oxidative stress-related damage and animal longevity. Free Radical Biology and Medicine, 2002, 33, 1167-1172.	1.3	202
17	Aging in vertebrates, and the effect of caloric restriction: a mitochondrial free radical production-DNA damage mechanism?. Biological Reviews, 2004, 79, 235-251.	4.7	199
18	Mitochondrial membrane peroxidizability index is inversely related to maximum life span in mammals. Journal of Lipid Research, 1998, 39, 1989-1994.	2.0	198

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19	Mitochondrial Oxygen Consumption and Reactive Oxygen Species Production are Independently Modulated: Implications for Aging Studies. Rejuvenation Research, 2007, 10, 215-224.	0.9	195
20	Endogenous oxidative stress: relationship to aging, longevity and caloric restriction. Ageing Research Reviews, 2002, 1, 397-411.	5.0	191
21	Localization at complex I and mechanism of the higher free radical production of brain nonsynaptic mitochondria in the short-lived rat than in the longevous pigeon. Journal of Bioenergetics and Biomembranes, 1998, 30, 235-243.	1.0	184
22	H2O2 production of heart mitochondria and aging rate are slower in canaries and parakeets than in mice: sites of free radical generation and mechanisms involved. Mechanisms of Ageing and Development, 1998, 103, 133-146.	2.2	153
23	Dietary Restriction at Old Age Lowers Mitochondrial Oxygen Radical Production and Leak at Complex I and Oxidative DNA Damage in Rat Brain. Journal of Bioenergetics and Biomembranes, 2005, 37, 83-90.	1.0	149
24	The quantitative measurement of H2O2 generation in isolated mitochondria. Journal of Bioenergetics and Biomembranes, 2002, 34, 227-233.	1.0	146
25	The Mitochondrial Free Radical Theory of Aging. Progress in Molecular Biology and Translational Science, 2014, 127, 1-27.	0.9	146
26	Localization of the site of oxygen radical generation inside the complex I of heart and nonsynaptic brain mammalian mitochondria. , 2000, 32, 609-615.		143
27	Effect of short-term caloric restriction on H2O2 production and oxidative DNA damage in rat liver mitochondria and location of the free radical source. Journal of Bioenergetics and Biomembranes, 2001, 33, 279-287.	1.0	140
28	ADP-regulation of mitochondrial free radical production is different with complex I- or complex II-linked substrates: implications for the exercise paradox and brain hypermetabolism. Journal of Bioenergetics and Biomembranes, 1997, 29, 241-249.	1.0	134
29	Low fatty acid unsaturation protects against lipid peroxidation in liver mitochondria from long-lived species: the pigeon and human case. Mechanisms of Ageing and Development, 1996, 86, 53-66.	2.2	131
30	Regulation of longevity and oxidative stress by nutritional interventions: Role of methionine restriction. Experimental Gerontology, 2013, 48, 1030-1042.	1.2	126
31	Protein Restriction Without Strong Caloric Restriction Decreases Mitochondrial Oxygen Radical Production and Oxidative DNA Damage in Rat Liver. Journal of Bioenergetics and Biomembranes, 2004, 36, 545-552.	1.0	122
32	A low degree of fatty acid unsaturation leads to lower lipid peroxidation and lipoxidation-derived protein modification in heart mitochondria of the longevous pigeon than in the short-lived rat. Mechanisms of Ageing and Development, 1999, 106, 283-296.	2.2	119
33	Resveratrol, melatonin, vitamin E, and PBN protect against renal oxidative DNA damage induced by the kidney carcinogen KBrO3. Free Radical Biology and Medicine, 1999, 26, 1531-1537.	1.3	119
34	Oxidative, glycoxidative and lipoxidative damage to rat heart mitochondrial proteins is lower after 4 months of caloric restriction than in age-matched controls. Mechanisms of Ageing and Development, 2002, 123, 1437-1446.	2.2	117
35	Highly resistant macromolecular components and low rate of generation of endogenous damage: Two key traits of longevity. Ageing Research Reviews, 2007, 6, 189-210.	5.0	117
36	Double bond content of phospholipids and lipid peroxidation negatively correlate with maximum longevity in the heart of mammals. Mechanisms of Ageing and Development, 2000, 112, 169-183.	2.2	107

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37	Forty percent and eighty percent methionine restriction decrease mitochondrial ROS generation and oxidative stress in rat liver. Biogerontology, 2008, 9, 183-196.	2.0	106
38	Maximum life span in vertebrates: Relationship with liver antioxidant enzymes, glutathione system, ascorbate, urate, sensitivity to peroxidation, true malondialdehyde, in vivo H2O2, and basal and maximum aerobic capacity. Mechanisms of Ageing and Development, 1993, 70, 177-199.	2.2	98
39	Dietary Protein Restriction Decreases Oxidative Protein Damage, Peroxidizability Index, and Mitochondrial Complex I Content in Rat Liver. Journals of Gerontology - Series A Biological Sciences and Medical Sciences, 2007, 62, 352-360.	1.7	96
40	Forty Percent Methionine Restriction Decreases Mitochondrial Oxygen Radical Production and Leak at Complex I During Forward Electron Flow and Lowers Oxidative Damage to Proteins and Mitochondrial DNA in Rat Kidney and Brain Mitochondria. Rejuvenation Research, 2009, 12, 421-434.	0.9	96
41	Rapamycin reverses age-related increases in mitochondrial ROS production at complex I, oxidative stress, accumulation of mtDNA fragments inside nuclear DNA, and lipofuscin level, and increases autophagy, in the liver of middle-aged mice. Experimental Gerontology, 2016, 83, 130-138.	1.2	92
42	Dietary vitamin C decreases endogenous protein oxidative damage, malondialdehyde, and lipid peroxidation and maintains fatty acid unsaturation in the guinea pig liver. Free Radical Biology and Medicine, 1994, 17, 105-115.	1.3	90
43	Effect of thyroid status on lipid composition and peroxidation in the mouse liver. Free Radical Biology and Medicine, 1999, 26, 73-80.	1.3	90
44	Effects of fasting on oxidative stress in rat liver mitochondria. Free Radical Research, 2006, 40, 339-347.	1.5	88
45	Low Fatty Acid Unsaturation: A Mechanism for Lowered Lipoperoxidative Modification of Tissue Proteins in Mammalian Species With Long Life Spans. Journals of Gerontology - Series A Biological Sciences and Medical Sciences, 2000, 55, B286-B291.	1.7	82
46	Simultaneous induction of SOD, glutathione reductase, GSH, and ascorbate in liver and kidney correlates with survival during aging. Free Radical Biology and Medicine, 1993, 15, 133-142.	1.3	80
47	A decrease of free radical production near critical targets as a cause of maximum longevity in animals. Comparative Biochemistry and Physiology Part B: Comparative Biochemistry, 1994, 108, 501-512.	0.2	80
48	Forty percent methionine restriction lowers DNA methylation, complex I ROS generation, and oxidative damage to mtDNA and mitochondrial proteins in rat heart. Journal of Bioenergetics and Biomembranes, 2011, 43, 699-708.	1.0	80
49	Membrane lipid unsaturation as physiological adaptation to animal longevity. Frontiers in Physiology, 2013, 4, 372.	1.3	79
50	Methionine Restriction Decreases Endogenous Oxidative Molecular Damage and Increases Mitochondrial Biogenesis and Uncoupling Protein 4 in Rat Brain. Rejuvenation Research, 2007, 10, 473-484.	0.9	76
51	Effect of thyroid hormones on mitochondrial oxygen free radical production and DNA oxidative damage in the rat heart. Molecular and Cellular Endocrinology, 2000, 168, 127-134.	1.6	68
52	Lowered methionine ingestion as responsible for the decrease in rodent mitochondrial oxidative stress in protein and dietary restriction. Biochimica Et Biophysica Acta - General Subjects, 2008, 1780, 1337-1347.	1.1	68
53	Towards a unified mechanistic theory of aging. Experimental Gerontology, 2019, 124, 110627.	1.2	66
54	Modification of the longevity-related degree of fatty acid unsaturation modulates oxidative damage to proteins and mitochondrial DNA in liver and brain. Experimental Gerontology, 2004, 39, 725-733.	1.2	64

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55	Effect of insulin and growth hormone on rat heart and liver oxidative stress in control and caloric restricted animals. Biogerontology, 2005, 6, 15-26.	2.0	64
56	Evaluation of sex differences on mitochondrial bioenergetics and apoptosis in mice. Experimental Gerontology, 2007, 42, 173-182.	1.2	64
57	Protein and lipid oxidative damage and complex I content are lower in the brain of budgerigar and canaries than in mice. Relation to aging rate. Age, 2005, 27, 267-280.	3.0	63
58	Effects of aging and methionine restriction applied at old age on ROS generation and oxidative damage in rat liver mitochondria. Biogerontology, 2012, 13, 399-411.	2.0	62
59	Effect of methionine dietary supplementation on mitochondrial oxygen radical generation and oxidative DNA damage in rat liver and heart. Journal of Bioenergetics and Biomembranes, 2009, 41, 309-321.	1.0	61
60	Protein methionine content and MDA-lysine adducts are inversely related to maximum life span in the heart of mammals. Mechanisms of Ageing and Development, 2005, 126, 1106-1114.	2.2	60
61	An evolutionary comparative scan for longevity-related oxidative stress resistance mechanisms in homeotherms. Biogerontology, 2011, 12, 409-435.	2.0	59
62	Correlation of fatty acid unsaturation of the major liver mitochondrial phospholipid classes in mammals to their maximum life span potential. Lipids, 2001, 36, 491-498.	0.7	58
63	Carbohydrate restriction does not change mitochondrial free radical generation and oxidative DNA damage. Journal of Bioenergetics and Biomembranes, 2006, 38, 327-333.	1.0	57
64	Influence of hyper- and hypothyroidism on lipid peroxidation, unsaturation of phospholipids, glutathione system and oxidative damage to nuclear and mitochondrial DNA in mice skeletal muscle. Molecular and Cellular Biochemistry, 2001, 221, 41-48.	1.4	55
65	A comparative study of free radicals in vertebratesâ€"II. Non-enzymatic antioxidants and oxidative stress. Comparative Biochemistry and Physiology Part B: Comparative Biochemistry, 1993, 105, 757-763.	0.2	54
66	Thyroid hormone-induced oxidative damage on lipids, glutathione and DNA in the mouse heart. Free Radical Research, 2001, 35, 417-425.	1.5	53
67	Effect of the degree of fatty acid unsaturation of rat heart mitochondria on their rates of H2O2 production and lipid and protein oxidative damage. Mechanisms of Ageing and Development, 2001, 122, 427-443.	2.2	53
68	Aging Increases N epsilon -(Carboxymethyl)lysine and Caloric Restriction Decreases N epsilon -(Carboxyethyl)lysine and N epsilon -(Malondialdehyde)lysine in Rat Heart Mitochondrial Proteins. Free Radical Research, 2002, 36, 47-54.	1.5	53
69	Mitochondrial DNA sequences are present inside nuclear DNA in rat tissues and increase with age. Mitochondrion, 2010, 10, 479-486.	1.6	53
70	Effect of 8.5% and 25% caloric restriction on mitochondrial free radical production and oxidative stress in rat liver. Biogerontology, 2007, 8, 555-566.	2.0	52
71	Effect of 40% restriction of dietary amino acids (except methionine) on mitochondrial oxidative stress and biogenesis, AIF and SIRT1 in rat liver. Biogerontology, 2009, 10, 579-592.	2.0	51
72	Plasma long-chain free fatty acids predict mammalian longevity. Scientific Reports, 2013, 3, 3346.	1.6	51

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73	Longevity and antioxidant enzymes, non-enzymatic antioxidants and oxidative stress in the vertebrate lung: a comparative study. Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology, 1994, 163, 682-689.	0.7	50
74	Oxidative DNA damage estimated by oxo8dG in the liver of guinea-pigs supplemented with graded dietary doses of ascorbic acid and alpha- tocopherol. Carcinogenesis, 1997, 18, 2373-2377.	1.3	49
75	Effect of Lipid Restriction on Mitochondrial Free Radical Production and Oxidative DNA Damage. Annals of the New York Academy of Sciences, 2006, 1067, 200-209.	1.8	47
76	A comparative study of free radicals in vertebratesâ€"I. Antioxidant enzymes. Comparative Biochemistry and Physiology Part B: Comparative Biochemistry, 1993, 105, 749-755.	0.2	46
77	Testing the vicious cycle theory of mitochondrial ROS production: effects of H2O2 and cumene hydroperoxide treatment on heart mitochondria. Journal of Bioenergetics and Biomembranes, 2006, 38, 121-127.	1.0	46
78	Thyroid status modulates glycoxidative and lipoxidative modification of tissue proteins. Free Radical Biology and Medicine, 1999, 27, 901-910.	1.3	45
79	Increase in heart glutathione redox ratio and total antioxidant capacity and decrease in lipid peroxidation after vitamin e dietary supplementation in guinea pigs. Free Radical Biology and Medicine, 1996, 21, 907-915.	1.3	44
80	Commentary: Oxygen Radicals, A Failure Or A Success of Evolution?. Free Radical Research Communications, 1993, 18, 63-70.	1.8	42
81	Short-Term Caloric Restriction and Sites of Oxygen Radical Generation in Kidney and Skeletal Muscle Mitochondria. Annals of the New York Academy of Sciences, 2004, 1019, 333-342.	1.8	42
82	Endotoxin Increases Oxidative Injury to Proteins in Guinea Pig Liver: Protection by Dietary Vitamin C. Basic and Clinical Pharmacology and Toxicology, 1998, 82, 11-18.	0.0	40
83	Vitamin E protects guinea pig liver from lipid peroxidation without depressing levels of antioxidants. International Journal of Biochemistry and Cell Biology, 1995, 27, 1175-1181.	1.2	39
84	Effect of time of restriction on the decrease in mitochondrial H2O2production and oxidative DNA damage in the heart of food-restricted rats. Microscopy Research and Technique, 2002, 59, 273-277.	1.2	37
85	Effect of Every Other Day Feeding on Mitochondrial Free Radical Production and Oxidative Stress in Mouse Liver. Rejuvenation Research, 2008, 11, 621-629.	0.9	37
86	Cysteine dietary supplementation reverses the decrease in mitochondrial ROS production at complex I induced by methionine restriction. Journal of Bioenergetics and Biomembranes, 2015, 47, 199-208.	1.0	37
87	Methionine and homocysteine modulate the rate of ROS generation of isolated mitochondria in vitro. Journal of Bioenergetics and Biomembranes, 2011, 43, 377-386.	1.0	33
88	Long-lived Ames dwarf mice: Oxidative damage to mitochondrial DNA in heart and brain. Age, 2002, 25, 119-122.	3.0	32
89	Effect of graded corticosterone treatment on aging-related markers of oxidative stress in rat liver mitochondria. Biogerontology, 2007, 8, 1-11.	2.0	31
90	Effect of dietary vitamin E levels on fatty acid profiles and nonenzymatic lipid peroxidation in the guinea pig liver. Lipids, 1996, 31, 963-970.	0.7	29

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91	Relationship Between Lipid Peroxidation, Fatty Acid Composition, and Ascorbic Acid in the Liver During Carbohydrate and Caloric Restriction in Mice. Archives of Biochemistry and Biophysics, 1993, 306, 59-64.	1.4	28
92	Caloric and carbohydrate restriction in the kidney: Effects on free radical metabolism. Experimental Gerontology, 1994, 29, 77-88.	1.2	27
93	Endotoxin depletes ascorbate in the guinea pig heart. Protecttve effects of vitamins C and E against oxidative stress. Life Sciences, 1996, 59, 649-657.	2.0	27
94	Low abundance of NDUFV2 and NDUFS4 subunits of the hydrophilic complex I domain and VDAC1 predicts mammalian longevity. Redox Biology, 2020, 34, 101539.	3.9	24
95	Short-term caloric restriction and regulatory proteins of apoptosis in heart, skeletal muscle and kidney of Fischer 344 rats. Biogerontology, 2003, 4, 141-147.	2.0	22
96	The gene cluster hypothesis of aging and longevity. Biogerontology, 2008, 9, 57-66.	2.0	22
97	Lifelong treatment with atenolol decreases membrane fatty acid unsaturation and oxidative stress in heart and skeletal muscle mitochondria and improves immunity and behavior, without changing mice longevity. Aging Cell, 2014, 13, 551-560.	3.0	22
98	Deprenyl protects from MPTP-induced Parkinson-like syndrome and glutathione oxidation in rat striatum. Toxicology, 2002, 170, 165-171.	2.0	21
99	Formation of S-(carboxymethyl)-cysteine in rat liver mitochondrial proteins: effects of caloric and methionine restriction. Amino Acids, 2013, 44, 361-371.	1.2	21
100	Effect of aging on mitochondrial and nuclear DNA oxidative damage in the heart and brain throughout the life-span of the rat. Age, 2001, 24, 45-50.	3.0	19
101	Long lifespans have evolved with long and monounsaturated fatty acids in birds. Evolution; International Journal of Organic Evolution, 2015, 69, 2776-2784.	1.1	18
102	Effect of Dietary Vitamin C and Catalase Inhibition on Antioxidants and Molecular Markers of Oxidative Damage in Guinea Pigs. Free Radical Research, 1994, 21, 109-118.	1.5	17
103	Vitamin E Decreases Urine Lipid Peroxidation Products in Young Healthy Human Volunteers under Normal Conditions. Basic and Clinical Pharmacology and Toxicology, 1996, 79, 247-253.	0.0	17
104	Phospholipid Hydroperoxides and Lipid Peroxidation in Liver and Plasma of ODS Rats Supplemented with Î±-Tocopherol and Ascorbic Acid. Free Radical Research, 1996, 24, 485-493.	1.5	15
105	Role of Olive Oil and Monounsaturated Fatty Acids in Mitochondrial Oxidative Stress and Aging. Nutrition Reviews, 2006, 64, S31-S39.	2.6	15
106	Mitochondrial base excision repair positively correlates with longevity in the liver and heart of mammals. GeroScience, 2020, 42, 653-665.	2.1	15
107	Is the NDUFV2 subunit of the hydrophilic complex I domain a key determinant of animal longevity?. FEBS Journal, 2021, 288, 6652-6673.	2.2	12
108	Aging Rate, Mitochondrial Free Radical Production, and Constitutive Sensitivity to Lipid Peroxidation: Insights From Comparative Studies. , 2003, , 47-64.		12

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109	Estimation of the Rate of Production of Oxygen Radicals by Mitochondria. , 2006, , 183-189.		11
110	The Î²-Blocker Atenolol Lowers the Longevity-Related Degree of Fatty Acid Unsaturation, Decreases Protein Oxidative Damage, and Increases Extracellular Signal-Regulated Kinase Signaling in the Heart of C57BL/6 Mice. Rejuvenation Research, 2010, 13, 683-693.	0.9	11
111	Gene expression and regulatory factors of the mechanistic target of rapamycin (mTOR) complex 1 predict mammalian longevity. GeroScience, 2020, 42, 1157-1173.	2.1	11
112	Ascorbic Acid and Aging. Sub-Cellular Biochemistry, 1996, 25, 157-188.	1.0	11
113	Independent and additive effects of atenolol and methionine restriction on lowering rat heart mitochondria oxidative stress. Journal of Bioenergetics and Biomembranes, 2014, 46, 159-172.	1.0	10
114	Regulation of Membrane Unsaturation as Antioxidant Adaptive Mechanism in Long-lived Animal Species. Free Radicals and Antioxidants, 2011, 1, 3-12.	0.2	9
115	Correlations With Longevity and Body Size: To Correct or Not Correct?. Journals of Gerontology - Series A Biological Sciences and Medical Sciences, 2014, 69, 1096-1098.	1.7	9
116	Reduced apurinic/apyrimidinic endonuclease 1 activity and increased DNA damage in mitochondria are related to enhanced apoptosis and inflammation in the brain of senescence- accelerated P8 mice (SAMP8). Biogerontology, 2016, 17, 325-335.	2.0	9
117	Mitochondrial oxidative stress and caloric restriction. Advances in Cell Aging and Gerontology, 2003, 14, 105-122.	0.1	8
118	Role of Olive Oil and Monounsaturated Fatty Acids in Mitochondrial Oxidative Stress and Aging. Nutrition Reviews, 2006, 64, 31-39.	2.6	7
119	Elovl2-Ablation Leads to Mitochondrial Membrane Fatty Acid Remodeling and Reduced Efficiency in Mouse Liver Mitochondria. Nutrients, 2022, 14, 559.	1.7	6
120	Membrane peroxidation index and maximum lifespan are negatively correlated in fish of genus <i>Nothobranchius</i>. Journal of Experimental Biology, 2020, 223, .	0.8	4
121	Mitochondrial Free Radical Production and Caloric Restriction: Implications in Vertebrate Longevity and Aging. , 2008, , 149-162.		3
122	mTORC1 is also involved in longevity between species. Aging, 2021, 13, 14544-14545.	1.4	3
123	Higher DNA repair in mitochondria of long-lived species. Aging, 2021, 13, 21808-21809.	1.4	2
124	Relationship between Fatty Acid Unsaturation, Sensitivity to Lipid Peroxidation, and Maximum Life Span in the Liver of Mammals. Annals of the New York Academy of Sciences, 1998, 854, 516-516.	1.8	1
125	La restricciÃ³n de metionina en la dieta disminuye el estrÃ©s oxidativo en mitocondrias de corazÃ³n. Revista Espanola De Geriatria Y Gerontologia, 2006, 41, 334-339.	0.2	0