



PROF. VITTORIO CALABRESE
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CURRICULUM VITAE: Prof. Vittorio Calabrese, MD

POSITION: FULL PROFESSOR OF CLINICAL BIOCHEMISTRY SCHOOL OF MEDICINE, UNIVERSITY OF CATANIA, DEPARTMENT OF BIOMEDICAL AND BIOTECHNOLOGICAL SCIENCES, University of Catania. Viale Andrea Doria, 6. 95125 – Catania - *E-mail:* calabres@unict.it.

Studies: 9/4/1984 **Degree in Medicine**, with *magna cum laude*, University of Catania. Thesis: Modifications of brain lipid metabolism during aging.
8/7/1988 **Specialization in Neurology**, with *magna cum laude*, University of Catania. Thesis: Oxidative stress in central nervous system.

Academic Positions:

Chairman and Director, School of Clinical Pathology and Clinical Biochemistry, University of Catania, University of Messina.
Professor of Clinical Biochemistry, CL Magistrale in Medicine, University of Catania.



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Professor of Clinical Biochemistry, CL Professioni sanitarie, University of Catania.

Professor of Clinical Biochemistry, International Doctorate Basic and applied Biomedical Sciences .

Awards and Distinctions:

1987 **Post-Doctoral fellow in Neurobiology** at the New York University Medical School, (N.Y.);

1989 **Post-Doctoral fellow in Neuropharmacology** at the Thomas Jefferson University Medical School (Philadelphia, PA.);

2000-2005: **Visiting Professor** University College London, Department of Neurochemistry, funded by Wellcome Trust Grant on “The role of antioxidants in L-DOPA induced damage to the Substantia Nigra”.

i. **Visiting Professor** Northwick Park Institute for Medical Research, Department of Surgical Research, University of London;

ii. **Visiting Professor** University of Kentucky, Department of Chemistry.

iii. **Visiting Professor** Blanchette Rockefeller Neuroscience Institute, West Virginia University (MD).

iv. **Coordinator** Euro-Mediterranean- Academy of Antiaging Medicine

v. **Visiting Professor** Biomedical Research Centre, University of Dundee (UK).

vi. **Visiting Professor** Barshop Institute for Aging and Longevity Studies and Department of Physiology, University of Texas Health Science Center at San Antonio, TX.

vii. **Visiting Professor** Johns Hopkins Bloomberg School of Public Health Baltimore, MD.

viii. **Visiting Professor** Center for Pediatric and Adolescent Medicine, University of Heidelberg, Heidelberg, Germany.

ix. **Visiting Professor** Molecular Genetics, Faculty of Life Sciences, Institute of Biology, Humboldt-Universität zu Berlin, Berlin, Germany.

Editorial Board:

1. Journal of Neuroscience Research
2. Neurochem Research
3. Antioxidant Redox Signaling
4. Journal Neurochemistry
5. Free Radical Biology Medicine
6. Current Neurovascular Disorders.



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7. Antioxidant Redox Signaling
8. Journal Neuroscience Research
9. Faseb Journal
10. Journal of Biological Chemistry
11. Mechanisms of Ageing and Development

Field of Scientific Interest

1. Role of Oxidative Stress and Mitochondrial dysfunction in Aging, Neurodegenerative disorders and Longevity
2. Nutritional Antioxidants and Modulation of cellular redox state.
3. Proteomics and redox proteomics, metabolomics and Lipidomics
4. Heat shock signal pathway and brain cell stress response
5. Alcohol metabolism and alcohol-related pathology
6. Gasobiology of the CNS: Role of Nitric Oxide (NO), Carbon Monoxide (CO) and Hydrogen sulfite (H₂S) in the regulation of gene expression
7. Carbon monoxide and organ transplantation
8. Redox Modulation of Vitagenes as target for novel therapeutic interventions in neurodegeneration and cancer: Role of endogenous compounds (Carnosine, Carnitines, Hormones) and nutritional compounds.
9. Hormesis
10. Cellular Danger response and Mitochondrial medicine: Role in Autism Spectrum Disorders, Schizophrenia and Neurological Disorders.

SELECTED PUBLICATIONS:

1. Ragusa N., Sfogliano L., **Calabrese V.**, and Rizza V. (1981). Effects of multivitamin treatment on the activity of rat liver triptophan pyrrolase during ethanol administration. *Acta Vitaminologica et Enzimologica* 3,(4), 199-204.
2. **Calabrese V.**, Guerrera F., Avitabile M., Famà M., and Rizza V. (1984). Superoxide dismutase and reduced glutathione: possible defense operating in hyperoxic swimbladder of fish. In: *Toxin, drugs and pollutants in marine animals*. (eds. Bolis et al.) pp. 130-136. Springer-Verlag, Berlin.
3. **Calabrese V.**, Fariello R.G. (1988). Regional distribution of malonaldehyde in mouse brain. *Biochemical Pharmacology*, 37,11, 2287-2288.



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4. Rizza V., Loreface R., Rizza N., and **Calabrese V.** (1992). Pharmacokinetics of L-carnitine in human subjects. In: *L-carnitine and its role in medicine: from function to therapy*, (eds. Ferrari R., Dimauro S., Sherwood G.) pp. 63-77. Academic Press, New York.
5. **Calabrese V.**, Renis M., Calderone A., Russo A., Barcellona M.L., Rizza V. (1996) Stress proteins and SH-groups in oxidant-induced cell damage after acute ethanol administration in rat. *Free Radical Biology and Medicine* 20, 391-397.
6. Renis M., **Calabrese V.**, Russo A., Calderone A., Barcellona M.L., Rizza V. (1996) Nuclear DNA strand breaks during ethanol-induced oxidative stress in rat brain. *FEBS Letters* 390, 153-156.
7. **Calabrese V.**, Renis M., Calderone A., Russo A., Reale S., Barcellona M.L., Rizza V. (1998) Stress proteins and SH-groups in oxidant-induced cell injury after chronic ethanol administration in rat. *Free Radical Biology and Medicine* 24, 1159-1167.
8. **Calabrese V.**, Rizza V. (1999) Formation of propionate after short-term ethanol treatment and its interaction with the carnitine pool in rat. *Alcohol* 19, 169-176.
9. Pennisi G., Rapisarda G., Bella R., **Calabrese V.**, Maertens de Noordhout A., Delwaide P.J. (1999) Absence of response to early transcranial magnetic stimulation in ischemic stroke patients. *Stroke* 30, 2666-2670.
10. **Calabrese V.**, Rizza V. (1999) Effects of l-carnitine on the formation of fatty acid ethyl esters in brain and peripheral organs after short-term ethanol administration in rat. *Neurochem. Res.* 24, 79-84.
11. **Calabrese V.**, Testa D., Ravagna A., Bates T.E., A.M. Giuffrida Stella. (2000) HSP70 induction in the brain following ethanol administration in the rat: regulation by glutathione redox state. *Biochem. Biophys. Res. Comm.* 269, 397-400.
12. **Calabrese V.**, Copani A., Testa D., Ravagna A., Spadaro F., Tendi E., Nicoletti V., A.M. Giuffrida Stella. (2000) Nitric oxide synthase induction in astroglial cell cultures: Effect on heat shock protein 70 synthesis and oxidant / antioxidant balance. *J. Neurosci. Res.* 60, 613-622.
13. Motterlini R., Foresti R., Bassi R., **Calabrese V.**, Clark J.E., Green C.J. (2000) Endothelial Heme oxygenase-1 induction by hypoxia: modulation by inducible nitric oxide synthase (iNOS) and S-nitrosothiols. *J. Biol. Chem.* 275, 13613-13620.
14. **Calabrese V.**, Scapagnini G., Catalano C., Dinotta F., Geraci D., Morganti P. (2000) Biochemical studies of a natural antioxidant isolated from rosemary and its application in cosmetic dermatology. *Int. J. Tissue Reactions* 22, 5-13.



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15. **Calabrese V.**, Bates T.E., Giuffrida Stella A.M. (2000) NO synthase and NO-dependent signal pathways in brain aging and neurodegenerative disorders: the role of oxidant/antioxidant balance. *Neurochem Res.* 65, 1315-1341.
16. Calandra C., Musumeci G., Mangiameli A., **Calabrese V.** (2000) Perception of alcoholism problem among young people between 13 and 30 years old. *Eur. J. of Alcohol Studies* 12, 85-89.
17. Scapagnini G., Dinotta F, **Calabrese V.** (2000) Oxidative stress and Neurodegenerative Disorders: The role of Vitamin E in Nutritional Neuroscience. *Int. J. Immunopathol. Immunopharmacology* 1, 97-107.
18. **Calabrese V.**, Scapagnini G., Catalano D., Dinotta F., Bates T.E., Calvani M, Giuffrida Stella A.M. (2001) Effects of acetyl-L-carnitine on the formation of fatty acid ethyl esters in brain and peripheral organs after short-term ethanol administration in rat. *Neurochem. Res.* 26, 167-174.
19. **Calabrese, V.**, Scapagnini G., Catalano C., Bates T.E., Dinotta F., Micali G., A.M. Giuffrida Stella (2001) Induction of heat shock protein synthesis in human skin fibroblasts in response to oxidative stress: regulation by a natural antioxidant from rosemary extract. *Int. J. Tissue Reactions* 23, 51-58.
20. **Calabrese, V.**, Scapagnini G., Giuffrida Stella A.M., Bates T.E., Clark J.B., (2001) Mitochondrial involvement in brain function and dysfunction: relevance to aging, neurodegenerative disorders and longevity. *Neurochem. Res.* 26, 739-764.
21. **Calabrese, V.**, Scapagnini G., Catalano C., Bates T.E., Geraci D., Pennisi G., Giuffrida Stella A.M. (2001) Induction of heat shock protein synthesis in human skin fibroblasts in response to oxidative stress: regulation by Vitamin E. *Int. J. Tissue Reactions* 23, 127-135.
22. Anello M, Ucciardello V, Piro S, Patane G, Frittitta L, **Calabrese V**, Giuffrida Stella AM, Vigneri R, Purrello F, Rabuazzo AM. (2001) Chronic exposure to high leucine impairs glucose-induced insulin release by lowering the ATP-to-ADP ratio. *Am. J. Physiol. Endocrinol. Metab.* 281, E1082-1087.
23. **Calabrese V.**, Scapagnini G., Ravagna A., Giuffrida Stella A., Butterfield A. (2002) Molecular chaperones and their roles in neural cell differentiation. *Dev. Neurosci.* 24, 40-56.
24. **Calabrese V.**, Scapagnini G., Ravagna A., Fariello R.G., Giuffrida Stella AM. and Abraham N. (2002) Regional distribution of heme oxygenase, hsp70, and glutathione in brain: relevance for endogenous oxidant / antioxidant balance and stress tolerance. *J. Neurosci. Res.* 68, 65-75.



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25. Butterfield D.A., Castegna A., Drake J., Scapagnini G., **Calabrese V.** (2002) Vitamin E and neurodegenerative disorders associated with oxidative stress. *Nutr. Neurosci.* 4, 229-239.
26. Butterfield D., Castegna A., Pocernich C., Drake J., Scapagnini G., **Calabrese V.** (2002) Nutritional approaches to combat oxidative stress in Alzheimer's disease. *J. Nutr. Biochem.* 13, 444-461.
27. Scapagnini G., Foresti R., **Calabrese V.**, Giuffrida Stella A.M., Green C.J., Motterlini R. (2002) Caffeic acid phenethyl ester and curcumin: a novel class of heme oxygenase-1 inducers. *Mol Pharmacol* 61, 554-561.
28. Scapagnini G., Giuffrida Stella A.M., Abraham N.G., Alkon D., **Calabrese V.** (2002) Differential expression of Heme oxygenase-1 in rat brain by endotoxin (LPS). In: *Heme Oxygenase in Biology and Medicine* (Abraham et al., eds.) pp. 121-134, Kluwer Academic Plenum Publisher, N.Y.
29. **Calabrese V.**, Scapagnini G., Ravagna A., Bella R., Foresti R., Bates T.E., Giuffrida Stella A.M., Pennisi G. (2002) Nitric oxide synthase is present in the cerebrospinal fluid of patients with active multiple sclerosis and is associated with increases in CSF protein nitrotyrosine, S-nitrosothiols and with changes in glutathione levels. *J. Neurosci. Res.* 70, 580-587.
30. Scapagnini G., D'Agata V., **Calabrese V.**, Pascale A., Colombrita C., Alkon D., Cavallaro S. (2002) Gene expression profiles of heme oxygenase isoforms in the rat brain. *Brain Res.* 954, 51-59.
31. **Calabrese V.**, Scapagnini G., Latteri S., Colombrita C., Ravagna A., Catalano C., Pennisi G., Calvani M., Butterfield D.A. (2002) Long-term ethanol administration enhances age-dependent modulation of redox state in different brain regions in the rat: protection by acetyl carnitine. *Int. J. Tissue Reactions* 24, 97-104.
32. Scapagnini G., Ravagna A., Bella R., Colombrita C., Pennisi G., Calvani M., Alkon D., **Calabrese V.** (2002) Long-term ethanol administration enhances age-dependent modulation of redox state in brain and peripheral organs of rat: protection by acetyl carnitine. *Int. J. Tissue Reactions.* 24, 89-96.
33. **Calabrese V.**, Scapagnini G., Latteri S., Butterfield D.A., Scapagnini U. Heme oxygenase, carbon monoxide and Cellular Stress Response in the Nervous System: The good and the enigmatic. (2002) *Neurochemistry News* 2, 57-60.
34. Colombrita C., **Calabrese V.**, Stella A.M., Mattei F., Alkon D.L., Scapagnini G. (2003) Regional rat brain distribution of heme oxygenase-1 and manganese superoxide dismutase mRNA: relevance of redox homeostasis in the aging processes. *Exp. Biol. Med.* 228, 517-524.



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35. Catania M.V., Giuffrida R., Seminara G., Barbagallo G., Aronica E., Gorter J.A., Dell'Albani P., Ravagna A., **Calabrese V.**, Giuffrida-Stella A.M. (2003) Upregulation of neuronal nitric oxide synthase in in vitro stellate astrocytes and in vivo reactive astrocytes after electrically induced status epilepticus. *Neurochem. Res* 28, 607-615.
36. **Calabrese, V.**, Scapagnini, G., Ravagna, A., Bella, R., Butterfield, D.A., Calvani, M., Pennisi, G., Giuffrida Stella, A.M. (2003). Disruption of thiol homeostasis and nitrosative stress in the cerebrospinal fluid of patients with active multiple sclerosis: evidence for a protective role of acetylcarnitine. *Neurochem. Res.* 28, 1321-1328.
37. Drake J., Sultana R., Aksenova M., **Calabrese V.**, Butterfield DA. (2003). Elevation of mitochondrial glutathione by gamma-glutamylcysteine ethyl ester protects mitochondria against peroxynitrite-induced oxidative stress. *J. Neurosci. Res.* 74, 917-927.
38. **Calabrese V.**, Scapagnini G., Colombrita C., Ravagna A., Pennisi G., Giuffrida Stella A.M., Galli F., Butterfield DA. (2003). Redox regulation of heat shock protein expression in aging and neurodegenerative disorders associated with oxidative stress: A nutritional approach. *Amino Acids* 25, 437-444.
39. **Calabrese V.**, Butterfield D.A., Giuffrida Stella A.M. (2003) Nutritional antioxidants and the heme oxygenase pathway of stress tolerance: novel targets for neuroprotection in Alzheimer's disease. *Italian Journal of Biochemistry* 52, 72-76.
40. **Calabrese V.**, Scapagnini G., Ravagna A., Colombrita C., Spadaro F., Butterfield D.A., Giuffrida Stella A.M. (2004). Increased expression of heat shock proteins in rat brain during aging: relationship with mitochondrial function and glutathione redox state. *Mech. Age Dev.* 125, 325-335.
41. Poon H.F., **Calabrese V.**, Scapagnini G., Butterfield D.A. (2004) Free radicals: key to brain aging and heme oxygenase as a cellular response to oxidative stress. *J. Gerontology A* 59, 478-493.
42. Poon H.F., **Calabrese V.**, Scapagnini G., Butterfield D.A. (2004). Free radicals and brain aging. *Clin. Geriatr. Med.* 20, 329-359.
43. Pocernich C.B., Sultana R., Hone E., Turchan J., Martins R.N., **Calabrese V.**, Nath A., Butterfield D.A. (2004). Effects of apolipoprotein E on the human immunodeficiency virus protein tat in neuronal cultures and synaptosomes. *J. Neurosci. Res.* 77, 532-539.
44. Poon H.F., Joshi G., Sultana R., Farr S.A., Banks W.A., Morley J.E., **Calabrese V.**, Butterfield D.A. (2004). Antisense directed at the Abeta region of APP decreases brain oxidative markers in aged senescence accelerated mice. *Brain Res.* 1018, 86-96.



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45. **Calabrese V.**, Giuffrida Stella AM, Butterfield DA, Scapagnini G. (2004) Redox Regulation in Neurodegeneration and Longevity: Role of the Heme Oxygenase and HSP70 Systems in Brain Stress Tolerance. *Antioxid Redox Signal.* 6, 895-913.
46. Scapagnini G, Butterfield DA, Colombrita C, Sultana R, Pascale A, **Calabrese V.** (2004) Ethyl Ferulate, a Lipophilic Polyphenol, Induces HO-1 and Protects Rat Neurons Against Oxidative Stress. *Antioxid Redox Signal.* 6, 811-818.
47. **Calabrese V.**, Boyd-Kimball D, Scapagnini G, Butterfield DA. (2004) Nitric oxide and cellular stress response in brain aging and neurodegenerative disorders: the role of vitagenes. *In Vivo.* 18, 245-268.
48. **Calabrese V.**, Calvani M, Butterfield DA. (2004). Increased formation of short-chain organic acids after chronic ethanol administration and its interaction with the carnitine pool in rat. *Arch. Biochem. Biophys.* 431, 271-278.
49. **Calabrese V.**, Ravagna A., Colombrita C., Guagliano E., Scapagnini G., Calvani M., Butterfield D.A., Giuffrida Stella A.M. (2005) Acetylcarnitine induces heme oxygenase in rat astrocytes and protects against oxidative stress: involvement of the transcription factor Nrf2. *J. Neuroscience Research* 79, 509-521.
50. Sultana R., Ravagna A., Mohmmad-Abdul H., **Calabrese V.**, Butterfield D.A. (2005) Ferulic acid ethyl ester protects neurons against amyloid beta- peptide(1-42)-induced oxidative stress and neurotoxicity: relationship to antioxidant activity. *J. Neurochem.* 92, 749-758.
51. Pocernich C., Boyd-Kimball D., Poon F., Thongboonkerd V., Lynn B.C., **Calabrese V.**, Nath A., Butterfield D.A. (2005) Proteomic analysis of human Astrocytes expressing the HIV protein TAT. *Brain Res. (Mol Brain Res).* 133, 307-316.
52. Poon H.F., Hensley K., Thongboonkerd V., Merchant M.L., Lynn B.C., Pierce W.M., Klein J.B., **Calabrese V.**, Butterfeild D.A. (2005) Redox proteomics analysis of oxidatively modified proteins in G93A-SOD1 transgenic mice--a model of familial amyotrophic lateral sclerosis. *Free Rad. Biol. Med.* 39, 453-462.
53. Perluigi M., Poon H.F., Hensley K., Pierce W.M., Klein J.B., **Calabrese V.**, De Marco C., Butterfield D.A. (2005) .Proteomic analysis of 4-hydroxy-2-nonenal-modified proteins in G93A-SOD1 transgenic mice-A model of familial amyotrophic lateral sclerosis. *Free Radic. Biol. Med.* 38, 960-968.
54. Poon H.F., Frasier M., Shreve N., **Calabrese V.**, Wolozin B., Butterfield D.A. (2005) Mitochondrial associated metabolic proteins are selectively oxidized in A30P alpha-synuclein transgenic mice--a model of familial Parkinson's disease. *Neurobiol. Dis.* 18, 492-498.



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55. **Calabrese V.**, Ravagna A., Scapagnini G., Catalano C., Pennisi G., Butterfield D.A., Giuffrida Stella A.M. (2005) Oxidative stress, mitochondrial dysfunction and cellular stress response in Friedreich Ataxia. *J. Neurol Sci.* 233, 145-162.
56. **Calabrese V.**, Colombrita C., Guagliano E., Sapienza M., Ravagna A., Tomaselli G., Cardile V. Scapagnini G., Butterfield D.A., Giuffrida Stella A.M., and Rizzarelli E.. (2005) Protective effect of carnosine during nitrosative stress in astroglial cell cultures. *Neurochem. Res.* 30, 797-807.
57. Perluigi M., Poon H.F., Maragos W., Pierce WM., JB Klein JB, **Calabrese V.**, Cini C., De Marco C., Butterfield D.A., (2005). Proteomic Analysis of Protein Expression and Oxidative Modification in R6/2 Transgenic Mice--A Model of Huntington's Disease. *Molecular and Cellular Proteomics*, 4, 1849-1861.
58. Poon H.F., Shepherd H.M., Reed T., **Calabrese V.**, Giuffrida-Stella A.M., Pennisi G., Cai J., Pierce W.M., ; Klein J.B., Butterfield D.A: (2006) Proteomics Analysis Provides Insight into Caloric Restriction-Mediated Reduced Oxidation and Altered Expression of Brain Proteins Associated with Age-related Impaired Cellular Processes: Mitochondrial Dysfunction, Glutamate Dysregulation and Impaired Protein Synthesis. *Neurobiology of Aging* 27, 1020-1034.
59. **Calabrese V.**, Pennisi G., Calvani M., Giuffrida Stella A.M., Butterfield D.A., Mancuso C. (2006) Heme Oxygenase As Therapeutic Funnel in Nutritional Redox Homeostasis and Cellular Stress Response: Role of Acetylcarnitine. In: Heat Shock Protein in Neural Cells, Christiane Ritcher-Landsberg Eds., Eurekah.com
60. **Calabrese V.**, Colombrita C., Scapagnini G., Calvani M., Giuffrida Stella AM., Butterfield D.A. (2006) Acetylcarnitine and cellular stress response: role in nutritional redox homeostasis and regulation of longevity genes. *J. Nutr. Biochemistry* 17,73-88.
61. Perluigi M., Joshi G, Sultana R., **Calabrese V.**, De Marco C., Coccia R., Butterfield D.A. (2006) In vivo protection by the xanthate tricyclodecan-9-yl-xanthogenate against amyloid beta-peptide (1-42)-induced oxidative stress. *Neuroscience* 138, 1161-1170.
62. Joshi G., Perluigi M., Sultana R., Agrippino R., **Calabrese V.**, Butterfield D.A. (2006) In vivo protection of synaptosomes by ferulic acid ethyl ester (FAEE) from oxidative stress mediated by 2,2-azobis(2-amidino-propane)dihydrochloride (AAPH) or Fe(2+)/H(2)O(2): insight into mechanisms of neuroprotection and relevance to oxidative stress-related neurodegenerative disorders. *Neurochem. Int.* 48,:318-327.
63. **Calabrese V.**, Butterfield D.A., Scapagnini G., Stella A.M., Maines M.D. (2006) Redox regulation of heat shock protein expression by signaling involving nitric oxide and carbon



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- monoxide: relevance to brain aging, neurodegenerative disorders, and longevity. *Antioxid Redox Signal.* 8, 444-477.
64. Lodi R., Tonon C., **Calabrese V.**, Schapira A.H. (2006) Friedreich's Ataxia: From Disease Mechanisms to Therapeutic Interventions. *Antioxid Redox Signal.* 8, 438-443.
 65. **Calabrese V.**, Colombrita C., Sultana R., Scapagnini G., Calvani M., Butterfield D.A., Stella A.M. (2006) Redox modulation of heat shock protein expression by acetylcarnitine in aging brain: relationship to antioxidant status and mitochondrial function. *Antioxid Redox Signal.* 8, 404-416.
 66. Scapagnini G., Colombrita C., Amadio M., D'Agata V., Arcelli E., Sapienza M., Quattrone A., **Calabrese V.** (2006) Curcumin activates defensive genes and protects neurons against oxidative stress. *Antioxid Redox Signal.* 8, 395-403.
 67. Calabrese V., Maines M.D. (2006) Antiaging medicine: antioxidants and aging. *Antioxid Redox Signal.* 8, 362-364.
 68. Poon H.F., **Calabrese V.**, Calvani M., Butterfield D.A. (2006) Proteomics analyses of specific protein oxidation and protein expression in aged rat brain and its modulation by L-acetylcarnitine: insights into the mechanisms of action of this proposed therapeutic agent for CNS disorders associated with oxidative stress. *Antioxid Redox Signal.* 8, 381-394.
 69. Abdul H.M., **Calabrese V.**, Calvani M., Butterfield D.A. (2006) Acetyl-L-carnitine-induced up-regulation of heat shock proteins protects cortical neurons against amyloid-beta peptide 1-42-mediated oxidative stress and neurotoxicity: Implications for Alzheimer's disease. *J. Neurosci. Res.* 84, 398-408.
 70. Perluigi M., Joshi G., Sultana R., **Calabrese V.**, De Marco C., Coccia R., Cini C., Butterfield D.A. (2006) In vivo protective effects of ferulic acid ethyl ester against amyloid-beta peptide 1-42-induced oxidative stress. *J. Neurosci. Res.* 84, 418-426.
 71. Mancuso C., Perluigi M., Cini C., De Marco C., Giuffrida Stella A.M., **Calabrese V.**, (2006) Heme oxygenase and cyclooxygenase in the central nervous system: A functional interplay. *J. Neurosci. Res.* 84, 1385-1391.
 72. **Calabrese V.**, Sultana R., Scapagnini G., Guagliano E., Sapienza M., Bella R., Kanski J., Pennisi G., Mancuso C., Stella A.M., Butterfield D.A. (2006) Nitrosative stress, cellular stress response, and thiol homeostasis in patients with Alzheimer's disease. *Antioxid. Redox. Signal.* 8, 1975-1986.
 73. Mancuso C., Pani G., **Calabrese V.** (2006) Bilirubin: an endogenous scavenger of nitric oxide and reactive nitrogen species. *Redox Rep.* 11, 207-213.



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