



**POSIZIONE ATTUALE:**

Professore Associato di Biochimica Clinica

(settore scientifico disciplinare BIO-12)

Facoltà di Medicina e Chirurgia

Università degli Studi del Molise

**STUDI:**

1992: Laurea in Medicina e Chirurgia - Università di Catania (110 /110 lode). Tesi sperimentale dal titolo: "Modelli eziopatogenetici e terapia sperimentale della demenza di Alzheimer".  
Proposta per il premio Barbagallo

1992: Abilitazione alla pratica Medica (200/200)

2001: Dottorato in Neurobiologia - Università di Catania/Roma/Pavia. Tesi sperimentale dal titolo: "Interazione tra Neuroni, Astrociti e Microglia nei processi di Neurodegenerazione: Ruolo della Ossido Nitrico Sintasi inducibile (iNOS)"

## **ESPERIENZE LAVORATIVE ACCADEMICHE:**

1991 – 1998: Medico Interno presso l'Istituto di Biochimica, Facoltà di Medicina, Università di Catania

1993: Supera l'esame di ammissione alla scuola di specializzazione in Farmacologia, presso l'Istituto di Farmacologia, Facoltà di Medicina, Università di Messina.

1998 - 1999: Research fellow, Istituto Neurologico Mediterraneo (NEUROMED) I.R.C.C.S., Department of Molecular Biology, Isernia, Italy

1999 – 2000: Research fellow, Department of Surgical Research Northwick Park Institute for Medical Research Harrow, Middlesex, United Kingdom

2000: Visiting Scientist, Laboratory of Adaptive Systems, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda MD

2000 - 2002: Ricercatore a contratto, Istituto di Farmacologia, Dipartimento di Farmacologia Sperimentale e Clinica, Università di Catania.

2000 - 2002: Assegno di ricerca biennale settore scientifico-disciplinare: E07X Farmacologia sul tema : “Effetti del resveratrolo in modelli sperimentali di Patologie oculari correlate a fenomeni ossidativi”

2001-2003: Research Assistant Professor, Blanchette Rockefeller Neurosciences Institute, West Virginia University at Johns Hopkins University, Rockville, MD

2003-2006: Ricercatore di ruolo, III livello professionale, Istituto di Scienze Neurologiche, Consiglio Nazionale delle Ricerche, Catania

2006 a oggi: Professore Associato di Biochimica Clinica, (settore didattico disciplinare BIO-12) Facoltà di Medicina e Chirurgia, Università degli Studi del Molise

2003 a oggi: Visiting Professor, New York Medical College, Walalla NY (USA), Department of Pharmacology. Research Project: "The role of heat shock signal and heme oxygenase on neuroprotection"

2004 a oggi: Visiting Professor, Blanchette Rockefeller Neurosciences Institute, West Virginia University at Johns Hopkins University, Rockville, MD (USA) Research Project: "Neuroprotective effects of natural polyphenolic compounds"

2004 a oggi: Visiting Professor, Institute of Human Virology, University of Maryland, Baltimore, MD (USA) Research Project: "HIV Dementia: novel pharmacological targets"

2008 a oggi: Delegato del Rettore per la Ricerca dell'Università degli Studi del Molise

**PARTECIPAZIONE AD ALBI PROFESSIONALI, SOCIETA' E COMITATI SCIENTIFICI:**

1997 a oggi: Iscritto all'Ordine dei Medici Chirurghi di Catania. N° 11497

2000 a oggi: Iscritto alla “American Society for Neuroscience”

2003 a oggi: Segretario Scientifico della fondazione ONLUS “Ricerca e Progresso ” presieduta dal Prof. Robert Gallo (Premio Nobel)

2003 a oggi: Membro del Board Scientifico dell’ “American Academy of Anti-Aging Medicine”

2006 a oggi: Segretario Scientifico e Socio Fondatore della Società Scientifica CLIMAA – Conferenza sulla Longevità e sulla Medicina Anti-Aging, presieduta dal Prof. Gianni Micali

2009 a oggi: Membro del Direttivo e Socio Fondatore della Società Scientifica SINUT – Società Italiana di Nutraceutica presieduta dal Prof. Cesare Sirtori

## PRINCIPALI LINEE DI RICERCA:

I temi di ricerca e di studio affrontati dal prof. Scapagnini nel periodo 1992/2008 si possono brevemente riassumere come segue:

- Polifenoli antiossidanti e meccanismi molecolari della resistenza cellulare allo stress
- Profili di espressione genica e identificazione di marker diagnostici nella malattia di Alzheimer
- Il sistema dell'eme ossigenasi e la sua funzione nella risposta cellulare allo stress
- Meccanismi di regolazione delle heat shock proteins nell'invecchiamento tissutale e nei disordini degenerativi
- Meccanismi di controllo posttrascrizionale di geni inducibili coinvolti nei meccanismi di sopravvivenza cellulare



**PUBBLICAZIONI SU RIVISTE SCIENTIFICHE INTERNAZIONALI:**

1. Calabrese V, Scapagnini G, Randazzo SD, Randazzo G, Catalano C, Geraci, Morganti P (1999) *Oxidative stress and antioxidants at skin biosurface: a novel antioxidant from lemon oil capable of inhibiting oxidative damage to the skin* . Drugs Exptl. Clin. Res.; XXV (6) 281-287.

2. 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 React  
;  
22 (1): 5-13

3. Scapagnini G, Di Notta F, Calabrese V (2000) *Oxidative stress and neurodegenerative disorders: the role of vitamin E in nutritional neuroscience*  
. Dermatologia, ed. Italiana di international journal of immunopathology and pharmacology vol 1 (3)

4. 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. *Neurochemical Res.*;26(2):167-74

5. Calabrese V, Scapagnini G, Catalano C, Bates TE, Geraci D, Pennisi G, Giuffrida Stella AM.(2001) Regulation of heat shock protein synthesis in human skin fibroblasts in response to oxidative stress: role of vitamin E. *Int J Tissue React*;23(4):127-35

6. Calabrese V, Scapagnini G, Giuffrida Stella AM, Bates TE, Clark JB. (2001) Mitochondrial involvement in brain function and dysfunction: relevance to aging, neurodegenerative disorders and longevity. *Neurochem Res Jun*;26(6):739-64

7. Calabrese V, Scapagnini G, Catalano C, Bates TE, Dinotta F, Micali G, Giuffrida Stella AM. (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 React*;23(2):51-8

8. Scapagnini G, D'Agata V, Calabrese V, Pascale A, Colombrita C, Alkon DL, Cavallaro S. (2002) Gene expression profiles of heme oxygenase isoforms in the rat brain *Brain Res.* 954(1):

31-39

9. Butterfield DA, Castegna A, Drake J, Scapagnini G, Calabrese V. (2002) Vitamin E and neurodegenerative disorders associated with oxidative stress *Nutr Neurosci Sep;5(4):229-39*

10. 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 Aug;13(8):444*

11. Calabrese V, Scapagnini G, Ravagna A, Giuffrida Stella AM, Butterfield DA (2002) Molecular chaperones and their roles in neural cell differentiation. *Dev Neurosci;24(1):1-13*

12. D'Agata V, Zhao W, Pascale A, Zohar O, Scapagnini G, Cavallaro S. (2002) Distribution of parkin in the adult rat brain *Prog Neuropsychopharmacol Biol Psychiatry Apr;26(3):519-27*

13. Calabrese V, Scapagnini G, Ravagna A, Fariello RG, Giuffrida Stella AM, Abraham NG.

(2002) Regional distribution of heme oxygenase, HSP70, and glutathione in brain: relevance for endogenous oxidant/antioxidant balance and stress tolerance J Neurosci Res Apr 1;68(1):65-7

14. Scapagnini G, Foresti R, Calabrese V, Giuffrida Stella AM, Green CJ, Motterlini R. (2002) Caffeic acid phenethyl ester and curcumin: a novel class of heme oxygenase-1 inducers. Mol Pharmacol Mar;61(3):554-61

15. Calabrese V, Scapagnini G, Ravagna A, Bella R, Foresti R, Bates TE, Giuffrida Stella AM, Pennisi G. (2002) Nitric oxide synthase is present in the cerebrospinal fluid of patients with active multiple sclerosis and is associated with increases in cerebrospinal fluid protein nitrotyrosine and S-nitrosothiols and with changes in glutathione levels. J Neurosci Res;70(4):580-7

16. 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 React.;24(3):89-96

17. Calabrese V, Scapagnini G, Latteri S, Colombrita C, Ravagna A, Catalano C, Pennisi G, Calvani M, Butterfield DA. (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 React.;24(3):97-104

18. Colombrita C, Calabrese V, Giuffrida Stella AM, Mattei F, Alkon DL, 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* (Maywood);228(5):517-24
19. Colombrita C, Lombardo G, Scapagnini G, Abraham NG. (2003) Heme oxygenase-1 expression levels are cell cycle dependent. *Biochem Biophys Res Commun*;308(4):1001-8.
20. Abraham NG, Scapagnini G, Kappas A. (2003) Human heme oxygenase: Cell cycle-dependent expression and DNA microarray identification of multiple gene responses after transduction of endothelial cells. *J Cell Biochem*; 90:1098-1111.
21. Calabrese V, Scapagnini G, Ravagna A, Bella R, Butterfield DA, Calvani M, Pennisi G, Giuffrida Stella AM. (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.

22. Calabrese V, Scapagnini G, Colombrita C, Ravagna A, Pennisi G, Giuffrida Stella AM, 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

23. Quattrone S, Chiappini L, Scapagnini G, Bigazzi B, Bani D. (2004) Relaxin potentiates the expression of inducible nitric oxide synthase by endothelial cells from human umbilical vein in in vitro culture. *Mol Hum Reprod*.10(5):325-30.

24. Calabrese V, Scapagnini G, Ravagna A, Colombrita C, Spadaro F, Butterfield DA, Giuffrida Stella AM. (2004) Increased expression of heat shock proteins in rat brain during aging: relationship with mitochondrial function and glutathione redox state. *Mech Ageing Dev*. 125(4):325-35.

25. Poon HF, Calabrese V, Scapagnini G, Butterfield DA. (2004) Free radicals: key to brain aging and heme oxygenase as a cellular response to oxidative stress. *J Gerontol A Biol Sci Med Sci*. 59(5):478-93.

26. Poon HF, Calabrese V, Scapagnini G, Butterfield DA. (2004) Free radicals and brain aging. *Clin Geriatr Med*. 20(2):329-59

27. 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(3):245-67.

28. 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(5):811-8.

29. Calabrese V, 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(5):895-913.

30. Cini G, Neri B, Pacini A, Cesati V, Sassoli C, Quattrone S, D'Apolito M, Fazio A, Scapagnini G, Provenzali A, Quattrone A (2005) Antiproliferative activity of melatonin by transcriptional inhibition of cyclin D1 expression: a molecular basis for melatonin-induced oncostatic effects. *J Pineal Res*. 39(1):12-20.

31. Calabrese V, Ravagna A, Colombrita C, Scapagnini G, Guagliano E, Calvani M, Butterfield DA, Giuffrida Stella AM. (2005) Acetylcarnitine induces heme oxygenase in rat astrocytes and protects against oxidative stress: Involvement of the transcription factor Nrf2. *J Neurosci Res*.

79(4):509-21.

32. Sacerdoti D, Olszanecki R, Li Volti G, Colombrita C, Scapagnini G, Abraham NG (2005) Heme Oxygenase Overexpression Attenuates Glucose-Mediated Oxidative Stress in Quiescent Cell Phase: Linking Heme to Hyperglycemia Complication. *Curr. Neurovasc Res.* 2(2):103-111

33. Li Volti GL, Sacerdoti D, Sangras B, Vanella A, Mezentsev A, Scapagnini G, Falck JR, Abraham NG. (2005) Carbon monoxide signaling in promoting angiogenesis in human microvessel endothelial cells. *Antioxid Redox Signal.* 7(5-6):704-10.

34. Calabrese V, Lodi R, Tonon C, D'Agata V, Sapienza M, Scapagnini G, Mangiameli A, Pennisi G, Stella AM, Butterfield DA (2005) Oxidative stress, mitochondrial dysfunction and cellular stress response in Friedreich's ataxia. *J Neurol Sci.* 233(1-2):145-62.

35. Sacerdoti D, Colombrita C, Ghattas MH, Ismaeil EF, Scapagnini G, Bolognesi M, Li Volti G, Abraham NG. (2005) Heme oxygenase-1 transduction in endothelial cells causes downregulation of monocyte chemoattractant protein-1 and of genes involved in inflammation and growth. *Cell Mol Biol (Noisy-le-grand).* 51(4):363-70.



36. Calabrese V, Colombrita C, Guagliano E, Sapienza M, Ravagna A, Cardile V, Scapagnini G, Santoro AM, Mangiameli A, Butterfield DA, Giuffrida Stella AM, Rizzarelli E. (2005) Protective effect of carnosine during nitrosative stress in astroglial cell cultures. *Neurochem Res.* 30(6-7):797-807.

37. Pascale A, Amadio M, Scapagnini G, Lanni C, Racchi M, Provenzani A, Govoni S, Alkon DL, Quattrone A. (2005) Neuronal ELAV proteins enhance mRNA stability by a PKC $\alpha$ -dependent pathway. *Proc Natl Acad Sci U S A.* 102(34):12065-70.

38. 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(3-4):395-403.

39. Calabrese V, Colombrita C, Sultana R, Scapagnini G, Calvani M, Butterfield DA, Stella AM. (2006) Redox modulation of heat shock protein expression by acetylcarnitine in aging brain: relationship to antioxidant status and mitochondrial function. *Antioxid Redox Signal.* 8(3-4):404-16.

40. Calabrese V, Butterfield DA, Scapagnini G, Stella AM, Maines MD. (2006) Redox regulation of heat shock protein expression by signaling involving nitric oxide and carbon monoxide:

relevance to brain aging, neurodegenerative disorders, and longevity. *Antioxid Redox Signal*. 8(3-4):444-77.

41. Mancuso C, Scapagnini G, Curro D, Giuffrida Stella AM, De Marco C, Butterfield DA, Calabrese V. (2007) Mitochondrial dysfunction, free radical generation and cellular stress response in neurodegenerative disorders. *Front Biosci*. 12:1107-23.

42. Amadio M, Scapagnini G, Lupo G, Drago F, Govoni S, Pascale A. (2008) PKC $\beta$ II/HuR/VEGF: A new molecular cascade in retinal pericytes for the regulation of VEGF gene expression. *Pharmacol Res*. 57(1):60-6.

43. Micale V, Scapagnini G, Colombrita C, Mazzola C, Alkon DL, Drago F. (2008). Behavioral effects of dietary cholesterol in rats tested in experimental models of mild stress and cognition tasks. *Eur Neuropsychopharmacol*. 18(6):462-71.

44. Calabrese V, Signorile A, Cornelius C, Mancuso C, Scapagnini G, Ventimiglia B, Ragusa N, Dinkova-Kostova A. (2008) Practical approaches to investigate redox regulation of heat shock protein expression and intracellular glutathione redox state. *Methods Enzymol*. 441:83-110.

45. Racchi M, Uberti D, Govoni S, Memo M, Lanni C, Vasto S, Candore G, Caruso C, Romeo L, Scapagnini G. (2008) Alzheimer's disease; new diagnostic and therapeutic tools. *Immun Ageing*. 5(1):7.

46. Scapagnini G, Amadio M, Laforenza U, Intrieri M, Romeo L, Govoni S, Pascale A (2008). Post-transcriptional regulation of HSP70 expression following oxidative stress in SH-SY5Y cells: the potential involvement of the RNA-binding protein HuR. *Curr Pharm Des*. 14(26):2651-8.

**CAPITOLI E COMMENTI AD ARTICOLI:**

- Scapagnini G, Giuffrida Stella AM, Abraham NG, Alkon DL, Calabrese V. (2002) Differential expression of heme oxygenase-1 in rat brain by endotoxin (LPS) in "Heme oxygenase in biology and medicine" Kluwer Academic/Plenum Pub. NY, 10:121-34;

1. Sima AAF, Amato A, Calvani M, Fiskum G, Scapagnini G (2003) Diabetic neuropathy and oxidative stress. J Clin Invest; letter to the editor commentaries: Feldman E, 111: 431-433;

1. Scapagnini G, Nelson T, Alkon DL (2003) Regulation of Ca<sup>2+</sup> stores in glial cells. In "Non-Neuronal Cells of the Nervous System: Function and Dysfunction" Adv in Mol Cell Biol;31:635-61. Elsevier Pub Amsterdam.;

1. Tedeschi A, Pappalardo S, Longo V, Scapagnini G, Micali G (2006) Fattori nutrizionali. In "Il ringiovanimento del volto" UTET S.p.A. Torino, 231-236

## **BREVETTI:**

1. Scapagnini G, Cavazza C. *Use of acyl L-carnitine gamma-hydroxybutyrate for the*

*treatment of alcoholism*

EP0616805 Publication date: 1994-09-28

. European Patent Number:

Scapagnini G, Cavazza C. *Use of acyl L-carnitine gamma-hydroxybutyrate for the manufacture of a medicament for the treatment of drug addiction*

Patent Number: EP0630648 Publication date: 1994-12-28

. European

Bizzini B, Scapagnini G, Volpato I, Donadelli M. *Chemically derivatized non-digestible and/or non-absorbable biopolymers as competitive antagonists of intestinal absorption of nutrients.*

Patent Number: EP1064858 Publication date: 2001-01-03

Bizzini B, Scapagnini G, Volpato I, Magara M, Veneroni F, Volpato L. *Oligosaccharide metabolites of glycosaminoglycans and their use in the diagnosis and treatment of complications of diabetes*

Number: WO0104632 Publication date: 2001-01-18

. World Patent

Scapagnini G, Calabrese V, Motterlini M, Colombrita C, Alkon DL. *Use of curcumin derivatives or CAPE in the manufacture of a medicament for the treatment of neuroprotective disorders.*

WO 2004/075883 A1 Publication date: 2004-09-10

Scapagnini G, Calabrese V, Motterlini M, Colombrita C, Alkon DL. *Use of curcumin derivatives or CAPE in the manufacture of a medicament for the treatment of neuroprotective disorders.*  
WO 2004/075883 A1 Publication date: 2004-09-10