

Place and date of born: Meta di Sorrento (Na), 08/02/1963

Residence: Via Padre Semenza 28, Prata di Principato ultra (AV)

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She got her degree cum laude in Biology in 1988 at " Federico II " Naples University. Relators: prof. C. Polito and prof. J.Guardiola. Title: "Role of 5' region in transcriptional regulation of HLA-DQa gene"

Post-lauream trainingship and scientific activity

● IGB, CNR
'89-'91,
prof.
J.Guardiola

She got a fellowship at the Institute of Genetics and Biophysics as the agreement CNR-MISM. She studied the structure and the transcriptional regulation of human HLA-class II genes

● IGB, CNR
'92-'93,
prof.
J.Guardiola

She worked as research fellow for the Istituto Superiore di Sanità. She was interested in HIV1 antigenic peptides presentation to human lymphocytes by HLA-class II proteins

● IGB, CNR
'95,
dr G. Martini

She got a CNR fellowship. She studied the regulation of G6PDH gene

● IGB, CNR,
prof.J.Guardiola

She got 3 short-term contracts as research assistant at IGB-CNR in '94,'96,'97. She performed the isolation of specific T cell lines and clones from human donors

● CNRS, Paris
prof. D. Piatier-
Tonneau

In July '95 she worked at the "Unite de Genetique Moleculaire et de Biologie du Developpement,Centre National de la Recherche Scientifique, CNRS- Villejuif Cedex, France, in the lab of dr D. Piatier-Tonneau for a short term Mobility. She applied FACS technology to characterize human T cell clones

● IGP CNR '98-
'04

Researcher (permanent position) at the Institute of Population Genetics CNR of Alghero (SS) since 1998. Collaboration with Shardna spa (Cagliari) in the years 2002-2003. Shardna Life

Sciences was a leading Italian genomics research company. She was interested on genetics of multifactorial diseases in particular on the identification of polymorphic variants of genes as predictors of multifactorial diseases such as nephrolithiasis and obesity. She participated at the Ogliastra Project to study the interactions between genetic and environmental factors in the pathogenesis of these complex diseases, in isolated populations.

- ISA CNR

At present she is researcher at Institute of Food Science, CNR, Avellino.

She was involved in the *FIRB RBNE0157EH* project: "Identification and functional analysis of molecular and genetic alterations of hormone-responsive breast cancer".

She collaborated with prof S. Musumeci (Sassari University) to study: Cytokines and opioids peptides dosages in human colostrums (2004 Project-Regione Sardegna LR 19/96).

She participated to a study on NEMO binding peptide domain in melanoma cell lines.

She studies epigenetics mechanisms involved in gene regulation by oestrogen, in breast cancer cell lines.

She analyses vegetable extracts performing bioassays led to isolation of anti-proliferative compounds.

She attended to national and international meetings and to training-courses, as instructor too.

She is co-author of 31 original papers referring about experimental results of researches related to immunology, genetics of complex diseases, molecular biology and nutrition.

She is co-inventor of 1 patent.

Scientific Publication

1. C. Perfetto, **MN Ombra**, G. Del Pozzo, A. Maffei, J. Guardiola. Effect of sodium butyrate and azacytidine on MHC class II gene expression in B-lymphoma cells. *J Immunol Res* 1:21 (1989). (if:3,383)
2. Maffei A, Perfetto C, **Ombra MN**, Del Pozzo G, Guardiola J. Transcriptional and post-transcriptional regulation of human MHC class II genes require the synthesis of short-lived proteins. *J Immunol* 1989 May 15;142(10):3657-61. (if: 5,745)
3. **Ombra MN**, Del Pozzo G, Perfetto C, Maffei A, Guardiola J. Effect of the AIR-1 locus on the activation of an enhancerless HLA-DQA1 promoter. *Immunogenetics* 1990;31(5-6):368-76. (if:2,942)
4. G. Del Pozzo, A. Maffei, C. Perfetto, **MN Ombra** J. Guardiola. Construction of retroviral vectors for the study of tissue specific regulation of human MHC class II genes. In: Transgenic animals and mutant for the study of MHC (C.David and I.Egorov eds.) *Springer & Verlag, Heidelberg*, pp.155-157 (1990).
5. J. Guardiola, C. Perfetto, **M.N. Ombra**, A. Maffei. G. Del Pozzo. Manipolazione genetica delle cellule somatiche in vivo: prospettive di terapia genica. *Minerva Biotechnol* 2:65 (1990).
6. G. Del Pozzo, **M.N. Ombra**, C. Perfetto, A. de Lerma Barbaro, M. Autiero, A. Maffei and J. Guardiola. Alu repeats and evolution of the HLA-DQA1 locus. *NATO ASI Series, Springer-Verlag Berlin Heidelberg*, vol H59:231-242 (1991).
7. J. Guardiola, C. Perfetto, **M.N. Ombra**, M. Autiero, R. Pasquinelli, A. M. Anzisi, A. Maffei e G. Del Pozzo. Uso di vettori retrovirali per la terapia genica ed il controllo della crescita neoplastica. *Bollettino dell'Istituto dei tumori di Napoli* 38:18 (1991).
8. Del Pozzo G, Perfetto C, **Ombra MN**, Ding GZ, Guardiola J, Maffei A. DNA polymorphisms in the 5'-flanking region of the HLA-DQA1 gene. *Immunogenetics* 1992;35(3):176-82. (if:2,942)
9. **Ombra MN**, Perfetto C, Autiero M, Anzisi AM, Pasquinelli R, Maffei A, Del Pozzo G, Guardiola J. Reversion of a transcriptionally defective MHC class II-negative human B-cell mutant. *Nucleic Acids Res* 1993 Feb 11;21(3):381-6. (if:7.836)
10. **M.N. Ombra**, M. Autiero, A. De Lerma Barbaro, R. Barretta, G. Del Pozzo and J. Guardiola. Recognition of distinct HLA-DQA1 promoter elements by a single nuclear factor containing Jun and Fos or antigenically related proteins. *Nucleic Acid Research* 1993 21:1811-8. (if:7.836)
11. De Berardinis P, **Ombra MN**, Buono C, Toraldo R, Vetrano F, Guardiola J. Long-term culture and T cell receptor analysis of T cell clones isolated from a patient with adenosine deaminase deficiency and type I diabetes. *Clin Immunol Immunopathol* 1994 Dec;73(3):362-6. (if:2,343)
12. Manca F, De Berardinis P, Fenoglio D, **Ombra MN**, Li Pira G, Saverino D, Autiero M, Lozzi L, Bracci L, Guardiola J. Antigenicity of HIV-derived T helper determinants in

- the context of carrier recombinant proteins: effect on T helper cell repertoire selection. *Eur J Immunol* 1996 Oct;26(10):2461-9. (if:4.942)
13. De Berardinis P, D'Apice L, Prisco A, **Ombra MN**, Barba P, Del Pozzo G, Petukhov S, Malik P, Perham RN, Guardiola J. Recognition of HIV-derived B and T cell epitopes displayed on filamentous phages. *Vaccine* 1999 Mar 17;17(11-12):1434-41. (if:3,572)
14. Fenoglio D, Li Pira G, De Berardinis P, Saverino D, Terranova MP, **Ombra MN**, Bracci L, Lozzi L, Viotti C, Guardiola J, Manca F. Antagonistic activity of HIV-1 T helper peptides flanked by an unrelated carrier protein. *Eur J Immunol* 1999 May;29(5):1448-55. (if:4.942)
15. Prisco A, Bonomi G, Moschella F, **Ombra MN**, De Berardinis P, Guardiola J. In vitro immunization with a recombinant antigen carrying the HIV-1 RT248-262 determinant inserted at different locations results in altered TCRVB region usage. *Hum Immunol* 1999 Sep;60(9):755-63. (if:2,872)
16. Bonomi G, Moschella F, **Ombra MN**, Del Pozzo G, Granier C, De Berardinis P, Guardiola J. Modulation of TCR recognition of MHC class II/peptide by processed remote N- and C-terminal epitope extensions. *Hum Immunol* 2000 Aug;61(8):753-63. (if:2,872)
17. **Ombra MN**, Forabosco P, Casula S, Angius A, Maestrale G, Petretto E, Casu G, Colussi G, Usai E, Melis P, Pirastu M. Identification of a new candidate locus for uric acid nephrolithiasis. *Am J Hum Genet* 2001 May;68(5):1119-29. (if:11,68)
18. Moschella F, **Ombra MN**, Del Pozzo G, Guardiola J. Administration of different antigenic forms of altered peptide ligands derived from HIV-1 RTase influences their effects on T helper cell activation. *Hum Immunol* 2003 Jan;64(1):1-8. (if: 2,872)
19. Gianfrancesco F, Esposito T, **Ombra MN**, Forabosco P, Maninchedda G, Fattorini M, Casula S, Vaccargiu S, Casu G, Cardia F, Deiana I, Melis P, Falchi M, Pirastu M. Identification of a novel gene and a common variant associated with uric acid nephrolithiasis in a Sardinian genetic isolate. *Am J Hum Genet* 2003 Jun;72(6):1479-91 (if:11,68)
20. **Ombra MN**, Casula S, Biino G, Maestrale G, Cardia F, Melis P, Pirastu M. Urinary glycosaminoglycans as risk factors for uric acid nephrolithiasis: case control study in a Sardinian genetic isolate. *Urology* 2003 Sep;62(3):416-20. (if:2,247)
21. **Ombra MN**, Musumeci M, Simpure J, Palano GM, Musumeci S, Beta Endorphin concentration in Colostrums of Burkinabe and Sicilian women. *Nutrition* 2008 Jan;24(1):31-6.(if:2,874)
22. **Ombra MN**, Perillo B, Bertoni A, Cuozzo C, Sacchetti S, Sasso A, Chiariotti L, Malorni A, Abbondanza C, Avvedimento EV. DNA oxidation as triggered by H3K9me2 demethylation drives estrogen-induced gene expression *Science*. 2008 Jan 11;319(5860):202-6. (if:31,36)
23. Ianaro A, Tersigni M, Belardo G, Di Martino S, Napolitano M, Palmieri G, Sini M, De Maio A, **Ombra M**, Gentilcore G, Capone M, Ascianto M, Satriano RA, Farina B, Faraone-Mennella M, Ascianto PA, Ialenti A. NEMO-binding domain peptide inhibits proliferation of human melanoma cells. *Cancer Lett*. 2009 Feb 18;274(2):331-6. (if: 4,864)

24. Abbondanza C, De Rosa C, **Ombra MN**, Aceto F, Medici N, Altucci L, Moncharmont B, Puca GA, Porcellini A, Avvedimento EV, Perillo B. Highlighting chromosome loops in DNA-picked chromatin. *Epigenetics*. 2011 Aug;6(8):979-86. (if: 4,62)

25. **Ombra MN**, Di Santi A, Abbondanza C, Migliaccio A, Avvedimento EV, Perillo B. Retinoic acid impairs estrogen signaling in breast cancer cells by interfering with activation of LSD1 via PKA. *Biochim Biophys Acta*. 2013 May;1829(5):480-6. (if: 5,456)

26. Nazzaro F, Fratianni F, Granese T, Cozzolino A, Pepe S, Maione M, **Ombra MN**, Coppola R. Antimicrobial property of hydro-alcoholic extract from purple basil (*Ocimum basilicum* var. *purpurascens*) in Worldwide Research Effort in the Fighting against Microbial Pathogens (2013) Brown Walker Press USA ISBN-13:978-1-61233-636-7 p 68-71

27. Granese T, Cardinale F, Cozzolino A, Pepe S, **Ombra MN**, Nazzaro F, Coppola R, Fratianni F. Variation of Polyphenols, Anthocyanins and Antioxidant Power in the Strawberry Grape (*Vitis labrusca*) after Simulated Gastro-Intestinal Transit and Evaluation of in Vitro Antimicrobial Activity. *Food and Nutrition Sciences*, 2014, 5, 60-65 (if: 0,43)

28. Perillo B, Di Santi A, Cerneria G, **Ombra MN**, Castoria G, Migliaccio A. Phosphorylation of H3 serine 10 by IKK α governs cyclical production of ROS in estrogen-induced transcription and ensures DNA wholeness. *Cell Death Differ*. 2014 Sep;21(9):1503. (if 8,38)

29. Perillo B, Di Santi A, Cerneria G, **Ombra MN**, Castoria G, Migliaccio A. Nuclear receptor-induced transcription is driven by spatially and timely restricted waves of ROS. The role of Akt, IKK α , and DNA damage repair enzymes. *Nucleus*. 2014 Aug 29;5(5) 482-491. (if:3,14)

30. Palomba G, Atzori F, Budroni M, **Ombra MN**, Cossu A, Sini MC, Pusceddu V, Massidda B, Frau B, Notary F, Ionta MT, Palmieri G. ERCC1 polymorphisms as prognostic markers in T4 breast cancer patients treated with platinum-based chemotherapy. *Journal of Translational Medicine*. 2014; 12(1), 272:1-8 (if:3,99)

31. **Ombra MN**, Fratianni F, Granese T, Cardinale F, Cozzolino A, Nazzaro F. In vitro antioxidant, antimicrobial and anti-proliferative activities of purple potato extracts (*Solanum tuberosum* cv Vitelotte noire) following simulated gastro-intestinal digestion. *Natural Product Research* in press. DOI: 10.1080/14786419.2014.981183

Patent N. RM2002A000525 "Mezzi diagnostici e terapeutici per patologie correlate alla calcolosi renale". Inventors: dr. Mario Pirastu, dr. Fernando Gianfrancesco, dr. Teresa Esposito, dr. Maria Neve Ombra.