Scientific Curriculum of Nazzareno Capitanio

Personal Information:
Name: Nazzareno Capitanio
Nationality: Italian
Date of Birth: xxxxxxxxxxxxxxxxxxxxxxxxx

Actual Position: Full professor of Biochemistry – University of Foggia – School of Medicine
Department of Clinical and Experimental Medicine – Laboratory of Medical Chemistry and Biochemistry.
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Education:

1974 Scientific Liceum "E. Fermi" - Bari
1979 Degree cum laude in Biological Science at the University of Bari.

Scientific career and Employment

1985 Researcher of Biochemistry at the Institute of Medical Chemistry and Biochemistry (Un. of Bari – Faculty of Medicine).
1992 Associate professor of Biochemistry at the Institute of Medical Chemistry and Biochemistry (Un. of Bari – Faculty of Medicine).
2000 Full professor of Biochemical Sciences at the University of Foggia (dep. of Biomedical Science - Faculty of Medicine).

Research activities and interests

1980--1982: Aerobic metabolism in experimental tumours; Na+(K+)/H+ exchangers and mitochondrial membrane potential.
1983: Electrical surface potentials in proteoliposomes (Athens, Dip. Of Biology, Nuclear Research Center Democritus – visiting scientist in the research group headed by dr. G. Papageorgeou).
1986: Functional characterization of tissue-specific isoforms of mammalian cytochrome c oxidase (Marburg, Inst. of Biochemistry, Univ. "Philipps" - visiting scientist in the research group headed by dr. B. Kadenbach).
1987: Purification and structural characterization of cytochrome complexes from aerobic bacteria (Eugene, Inst. of Molecular Biology, Univ. of Oregon - visiting scientist in the research group headed by dr. R. Capaldi).
1989: Identification and characterization of genes involved in the biogenesis of the yeast cytochrome oxidase (New York, Dip. of Biological Science, Univ. Columbia - visiting scientist in the research group headed by dr. A. Tzagaloff).
1995: Studies of the redox-Bohr effect in purified cytochromes (St. Catharines, Canada, Dip. of Biological Science, Univ. "Brock" - visiting scientist in the research group headed by dr. P. Nicholls)

1982 --: Mechanism of conversion of redox energy in proton pumping heme-protein complexes of mitochondrial and bacterial respiratory chains; kinetic, thermodynamic and allosteric control of redox-linked proton pumps and its role under physio-pathological conditions; molecular modelling of redox proton pumps based on co-operative linkage between transitions at redox centers and pK shift of acid/base groups in the protein.

2001 --: Mitochondrial and extra-mitochondrial oxidative metabolism in adult stem cell homeostasis; structural and functional characterization of NADPH oxidases and their role in redox signaling; studies on the mechanism of control of HIF.

2003 --: Flux control modelling of the mitochondrial respiratory chain.

2004 --: Study of HCV-mediated alterations of mitochondrial oxidative metabolism in in vitro cell systems of viral infection.

2005 --: Biochemical and genetic analysis of cells derived from patients affected by acute myeloid leukaemia, neuromuscular diseases and Parkinson.
Study of mitochondrial dysfunction in murine model of NASH.
Pathogenetic role of low-density lipoprotein in the development of chronic kidney disease.

2006 --: Development of diagnostic protocols by confocal microscopy analysis of morpho-functional features of mitochondria at a single organelle resolution. Bio safety analysis of engineered mesenchymal stem cell in regenerative medicine.

2007-- Heavy metals and carcinogenesis: role of gap junctional intercellular communication

2008-- "Mitotoxicity" of local anaesthetics; bioenergizers and resuscitation fluids .

2011-- Bioenergetics characterization of cancer stem cells.
Interplay between circadian rhythms and energy metabolism.

Bibliometric data (from Thomson Reuters ISI Web of Knowledge/Scopus – updated to September 2018)

N° of publications	99
Average I.F.	≈ 4.8
H index	27
Total N° of citations	≈ 1600

Organizing appointments (last 10 years):
Organizer and co-organizer of national and international meetings and congresses among
Which (last ten years):

- 13th European Bioenergetics Conference (EBEC), Pisa 21-26 August 2004;
- International Congress, "Mitochondria, from Molecular Insight to Physiology and Pathology" Bari 17-22 December 2006;
- International Workshop on "HCV Infection and Disease: from molecular virology to clinical management", Foggia 10-11 April, 2008.
- International Symposium on "Mitochondrial Physiology and Pathology" IUBMB Symposium S1/2008, Bari, 22-26 June, 2008.
- 2010, 2011, 2012, 2013: Annual meetings of the Italian Group of Bioenergetics and Biomembranes.

Grant awards as principal investigator

1997-1999 Cofin-PRIN project : Genetic engineering and expression of respiratory enzymes – Coordinator of the local unit

2008-2010 Cofin-PRIN project: Bioenergetics: molecular mechanisms, control and physiopathological role (2008FJJHKM) – Coordinator of the national project

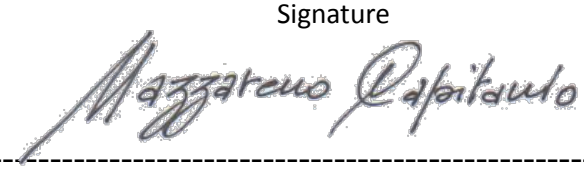
Professional societies:
Italian Society of Biochemistry
Italian Group of Bioenergetics and Biomembranes – member of the directive committee (2002-2006; 2009--2012: vice president)

Mitochondrial Physiology Society (MiP)
Component of the national committee of the full professors of Biochemistry (2015-2018).

Institutional appointments:

2002-2008	President of the degree-course of Biomedical Laboratory Technician;
2004-2008	Member of the Didactic Committee of the University of Foggia;
2002---	Member of the Scientific Committee of the University of Foggia;
2005-2010	Vice-dean of the Faculty of Medicine and Surgery of the University of Foggia.
2011-2013	Component of the Internal Committee of Evaluation of the University of Foggia.
2012---	Component of the Academic Senate of the University of Foggia.
2016---	Component of the "Quality Insurance Group" of the course of Medicine and Surgery.

Signature



Nazzareno Capitanio – Pubblications

1. Mitochondria confirmed as drivers of HSC fate. Piccoli C, Capitanio N. Blood. 2018;132(9):878-880.
2. From fever to immunity: A new role forIGFBP-6? Liso A, Capitanio N, Gerli R, Conese M. J Cell Mol Med. 2018. doi: 10.1111/jcmm.13738.
3. The Circadian Clock Regulates Metabolic Phenotype Rewiring Via HKDC1 and Modulates Tumor Progression and Drug Response in Colorectal Cancer.Fuhr L, El-Athman R, Scrima R, Cela O, Carbone A, Knoop H, Li Y, Hoffmann K, Laukkanen MO, Corcione F, Steuer R, Meyer TF, Mazzoccoli G, Capitanio N, Relógio A. EBioMedicine. 2018;33:105-121.
4. Targeting Endoplasmic Reticulum and/or Mitochondrial Ca(2+) Fluxes as Therapeutic Strategy for HCV Infection. Scrima R, Piccoli C, Moradpour D, Capitanio N. Front Chem. 2018;6:73.
5. Febrile temperature reprograms by redox-mediated signaling the mitochondrial metabolic phenotype in monocyte-derived dendritic cells. Menga M, Trotta R, Scrima R, Pacelli C, Silvestri V, Piccoli C, Capitanio N, Liso A. Biochim Biophys Acta. 2018;1864(3):685-699.
6. Exposure to 1.8 GHz electromagnetic fields affects morphology, DNA-related Raman spectra and mitochondrial functions in human lympho-monocytes. Lasalvia M, Scrima R, Perna G, Piccoli C, Capitanio N, Biagi PF, Schiavulli L, Ligonzo T, Centra M, Casamassima G, Ermini A, Capozzi V. PLoS One. 2018;13(2):e0192894.
7. Para-hydroxyphenylpyruvate inhibits the pro-inflammatory stimulation of macrophage preventing LPS-mediated nitro-oxidative unbalance and immunometabolic shift. Scrima R, Menga M, Pacelli C, Agriesti F, Cela O, Piccoli C, Cotoia A, De Gregorio A, Gefter JV, Cinnella G, Capitanio N. PLoS One. 2017;12(11):e0188683.
8. Rewiring carbohydrate catabolism differentially affects survival of pancreatic cancer cell lines with diverse metabolic profiles. Tataranni T, Agriesti F, Ruggieri V, Mazzoccoli C, Simeon V, Laurenzana I, Scrima R, Pazienza V, Capitanio N, Piccoli C. Oncotarget. 2017;8(25):41265-41281.
9. Possible Mechanisms of Mercury Toxicity and Cancer Promotion: Involvement of Gap Junction Intercellular Communications and Inflammatory Cytokines.Zefferino R, Piccoli C, Ricciardi N, Scrima R, Capitanio N. Oxid Med Cell Longev. 2017;2017:7028583.
10. Clock-genes and mitochondrial respiratory activity: Evidence of a reciprocal interplay. Scrima R, Cela O, Merla G, Augello B, Rubino R, Quarato G, Fugetto S, Menga M, Fuhr L, Relógio A, Piccoli C, Mazzoccoli G, Capitanio N. Biochim Biophys Acta. 2016;1857(8):1344-1351.
11. N-acetylaspartate (NAA) induces neuronal differentiation of SH-SY5Y neuroblastoma cell line and sensitizes it to chemotherapeutic agents.Mazzoccoli C, Ruggieri V, Tataranni T, Agriesti F, Laurenzana I, Fratello A, Capitanio N, Piccoli C. Oncotarget. 2016;7(18):26235-46.
12. Clock genes-dependent acetylation of complex I sets rhythmic activity of mitochondrial OxPhos. Cela O, Scrima R, Pazienza V, Merla G, Benegiamo G, Augello B, Fugetto S, Menga M, Rubino R, Fuhr L, Relógio A, Piccoli C, Mazzoccoli G, Capitanio N. Biochim Biophys Acta. 2016;1863(4):596-606.
13. The iron chelator deferasirox affects redox signalling in haematopoietic stem/progenitor cells. Tataranni T, Agriesti F, Mazzoccoli C, Ruggieri V, Scrima R, Laurenzana I, D'Auria F, Falzetti F, Di Ianni M, Musto P, Capitanio N, Piccoli C. Br J Haematol. 2015;170(2):236-46.
14. Dichloroacetate, a selective mitochondria-targeting drug for oral squamous cell carcinoma: a metabolic perspective of treatment. Ruggieri V, Agriesti F, Scrima R, Laurenzana I, Perrone D, Tataranni T, Mazzoccoli C, Lo Muzio L, Capitanio N, Piccoli C. Oncotarget. 20;6(2):1217-30.
15. Stimulation of β2-adrenergic receptor increases CFTR function and decreases ATP levels in murine hematopoietic stem/progenitor cells. Trotta T, Guerra L, Piro D, d'Apolito M, Piccoli C, Porro C, Giardino I, Lepore S, Castellani S, Di Gioia S, Petrella A, Maffione AB, Casavola V, Capitanio N, Conese M. J Cyst Fibros. 2015;14(1):26-33.
16. Effect of resveratrol on mitochondrial function: implications in parkin-associated familiar Parkinson's disease. Ferretta A, Gaballo A, Tanzarella P, Piccoli C, Capitanio N, Nico B, Annese T, Di Paola M, Dell'aquila C, De Mari M, Ferranini E, Bonifati V, Pacelli C, Cocco T. Biochim Biophys Acta. 2014;1842(7):902-15.
17. Protective role of amantadine in mitochondrial dysfunction and oxidative stress mediated by

hepatitis C virus protein expression. Quarato G, Scrima R, Ripoli M, Agriesti F, Moradpour D, Capitanio N, Piccoli C. Biochem Pharmacol. 2014;89(4):545-56.
18. Hematopoietic stem/progenitor cells express myoglobin and neuroglobin: adaptation to hypoxia or prevention from oxidative stress? D'Aprile A, Scrima R, Quarato G, Tataranni T, Falzetti F, Di Ianni M, Gemei M, Del Vecchio L, Piccoli C, Capitanio N. Stem Cells. 2014;32(5):1267-77.
19. Hepatitis C virus, mitochondria and auto/mitophagy: exploiting a host defense mechanism. Ruggieri V, Mazzoccoli C, Pazienza V, Andriulli A, Capitanio N, Piccoli C. World J Gastroenterol. 2014;20(10):2624-33.
20. p-Hydroxyphenylpyruvate, an intermediate of the Phe/Tyr catabolism, improves mitochondrial oxidative metabolism under stressing conditions and prolongs survival in rats subjected to profound hemorrhagic shock. Cotoia A, Scrima R, Gefter JV, Piccoli C, Cinnella G, Dambrosio M, Fink MP, Capitanio N. PLoS One. 2014;9(3):e90917.
21. Hepatitis C virus, mitochondria and auto/mitophagy: Exploiting a host defense mechanism. Ruggieri V, Mazzoccoli C, Pazienza V, Andriulli A, Capitanio N, Piccoli C. World J Gastroenterol. 2014;20(10):2624-2633.
22. To Breathe or Not to Breathe: the Hematopoietic Stem/Progenitor Cells Dilemma. Piccoli C, Agriesti F, Scrima R, Falzetti F, Di Ianni M, **Capitanio** N. Br J Pharmacol. 2013 May 28. doi: 10.1111/bph.12253.
23. Chronic pro-oxidative state and mitochondrial dysfunctions are more pronounced in fibroblasts from Down syndrome foeti with congenital heart defects. Piccoli C, Izzo A, Scrima R, Bonfiglio F, Manco R, Negri R, Quarato G, Cela O, Ripoli M, Prisco M, Gentile F, Calì G, Pinton P, Conti A, Nitsch L, Capitanio N. Hum Mol Genet. 2013 ;22(6):1218-32.
24. Targeting mitochondria in the infection strategy of the hepatitis C virus. Quarato G, Scrima R, Agriesti F, Moradpour D, Capitanio N, Piccoli C. Int J Biochem Cell Biol. 2013;45(1):156-66.
25. PPARs and HCV-Related Hepatocarcinoma: A Mitochondrial Point of View. Agriesti F, Tataranni T, Ruggieri V, Capitanio N, Piccoli C. PPAR Res. 2012;2012:605302.
26. Subcytotoxic mercury chloride inhibits gap junction intercellular communication by a redox- and phosphorylation-mediated mechanism. Piccoli C, D'Aprile A, Scrima R, Ambrosi L, Zefferino R, Capitanio N. Free Radic Biol Med. 2012;52(5):916-27.
27. Allosteric interactions and proton conducting pathways in proton pumping aa(3) oxidases: Heme a as a key coupling element. Capitanio N, Palese LL, Capitanio G, Martino PL, Richter OM, Ludwig B, Papa S. Biochim Biophys Acta. 2012;1817(4):558-66.
28. The cyclophilin inhibitor alisporivir prevents hepatitis C virus- mediated mitochondrial dysfunction. Quarato G, D'Aprile A, Gavillet B, Vuagniaux G, Moradpour D, Capitanio N, Piccoli C. Hepatology. 2012;55(5):1333-43.
29. Hematopoietic Stem/Progenitor Cells Express Functional Mitochondrial Energy-Dependent Cystic Fibrosis Transmembrane Conductance Regulator. Piro D, Piccoli C, Guerra L, Sassone F, D'Aprile A, Favia M, Castellani S, Gioia SD, Lepore S, Garavaglia ML, Trotta T, Maffione AB, Casavola V, Meyer G, Capitanio N, Conese M. Stem Cells Dev. 2012;21(4):634-46.
30. Mitochondrial oxidative stress and respiratory chain dysfunction account for liver toxicity during amiodarone but not dronedarone administration. Serviddio G, Bellanti F, Giudetti AM, Gnoni GV, Capitanio N, Tamborra R, Romano AD, Quinto M, Vendemiale G, Altomare E. Free Radic Biol Med. 2011;51(12):2234-42.
31. Functional imaging of membrane potential at the single mitochondrion level: possible application for diagnosis of human diseases. Quarato G, Piccoli C, Scrima R, Capitanio N. Mitochondrion. 2011;11(5):764-73.
32. Inhibition of proton pumping in membrane reconstituted bovine heart cytochrome c oxidase by zinc binding at the inner matrix side. Martino PL, Capitanio G, Capitanio N, Papa S. Biochim Biophys Acta. 2011;1807(9):1075-82.
33. Variation of flux control coefficient of cytochrome c oxidase and of the other respiratory chain complexes at different values of protonmotive force occurs by a threshold mechanism. Quarato G, Piccoli C, Scrima R, Capitanio N. Biochim Biophys Acta. 2011;1807(9):1114-24.

34. Redox Bohr effects and the role of heme a in the proton pump of bovine heart cytochrome c oxidase. Capitanio G, Martino PL, Capitanio N, Papa S. Biochim Biophys Acta. 2011; 1807(10):1287-94.
35. Native LDL-induced oxidative stress in human proximal 1 tubular cells: multiple players involved. Piccoli C, Quarato G, D'Aprile A, Montemurno E, Scrima R, Ripoli M, Gomaraschi M, Cirillo P, Boffoli D, Calabresi L, Gesualdo L, Capitanio N. J Cell Mol Med. 2011;15(2):375-95.
36. Hepatitis C virus-linked mitochondrial dysfunction promotes hypoxia-inducible factor 1 alpha-mediated glycolytic adaptation. Ripoli M, D'Aprile A, Quarato G, Sarasin-Filipowicz M, Gouttenoire J, Scrima R, Cela O, Boffoli D, Heim MH, Moradpour D, Capitanio N, Piccoli C. J Virol. 2010;84(1):647-60.
37. Bupivacaine uncouples the mitochondrial oxidative phosphorylation, inhibits respiratory chain complexes I and III and enhances ROS production: results of a study on cell cultures. Cela O, Piccoli C, Scrima R, Quarato G, Marolla A, Cinnella G, Dambrosio M, Capitanio N. Mitochondrion. 2010;10(5):487-96.
38. Mitochondrial respiratory dysfunction and mutations in mitochondrial DNA in PINK1 familial parkinsonism. Papa S, Sardanelli AM, Capitanio N, Piccoli C. J Bioenerg Biomembr. 2009;41(6):509-16.
39. Pathogenetic mechanisms in hereditary dysfunctions of complex I of the respiratory chain in neurological diseases. Papa S, Petruzzella V, Scacco S, Sardanelli AM, Iuso A, Panelli D, Vitale R, Trentadue R, De Rasmo D, Capitanio N, Piccoli C, Papa F, Scivetti M, Bertini E, Rizza T, De Michele G. Biochim Biophys Acta. 2009;1787(5):502-17.
40. HCV infection induces mitochondrial bioenergetic unbalance: causes and effects. Piccoli C, Quarato G, Ripoli M, D'Aprile A, Scrima R, Cela O, Boffoli D, Moradpour D, Capitanio N. Biochim Biophys Acta. 2009;1787(5):539-46.
41. Transformation by retroviral vectors of bone marrow-derived mesenchymal cells induces mitochondria-dependent cAMP-sensitive reactive oxygen species production. Piccoli C, Scrima R, Ripoli M, Di Ianni M, Del Papa B, D'Aprile A, Quarato G, Martelli MP, Servillo G, Ligas C, Boffoli D, Tabilio A, Capitanio N. Stem Cells. 2008;26(11):2843-54.
42. Coexistence of mutations in PINK1 and mitochondrial DNA in early onset parkinsonism. Piccoli C, Ripoli M, Quarato G, Scrima R, D'Aprile A, Boffoli D, Margaglione M, Criscuolo C, De Michele G, Sardanelli A, Papa S, Capitanio N. J Med Genet. 2008;45(9):596-602.
43. Mitochondrial respiratory dysfunction in familiar parkinsonism associated with PINK1 mutation. Piccoli C, Sardanelli A, Scrima R, Ripoli M, Quarato G, D'Aprile A, Bellomo F, Scacco S, De Michele G, Filla A, Iuso A, Boffoli D, Capitanio N, Papa S. Neurochem Res. 2008;33(12):2565-74.
44. MtDNA mutation associated with mitochondrial dysfunction in megakaryoblastic leukaemic cells. Piccoli C, Ripoli M, Scrima R, Stanziale P, Di Ianni M, Moretti L, Biscottini B, Carella M, Boffoli D, Tabilio A, Capitanio N. Leukemia. 2008;22(10):1938-41.
45. Alterations of hepatic ATP homeostasis and respiratory chain during development of non-alcoholic steatohepatitis in a rodent model. Serviddio G, Bellanti F, Tamborra R, Rollo T, Romano AD, Giudetti AM, Capitanio N, Petrella A, Vendemiale G, Altomare E. Eur J Clin Invest. 2008 ;38(4):245-52.
46. Topological organization of NADPH-oxidase in haematopoietic stem cell membrane: preliminary study by fluorescence near-field optical microscopy. Frassanito MC, Piccoli C, Capozzi V, Boffoli D, Tabilio A, Capitanio N. J Microsc. 2008;229(Pt 3):517-24.
47. Uncoupling protein-2 (UCP2) induces mitochondrial proton leak and increases susceptibility of non-alcoholic steatohepatitis (NASH) liver to ischaemia-reperfusion injury. Serviddio G, Bellanti F, Tamborra R, Rollo T, Capitanio N, Romano AD, Sastre J, Vendemiale G, Altomare E. Gut. 2008;57(7):957-65.
48. [Promoter effect induced by HgCl2 by studying the intercellular communication]. Lasalvia M, Zefferino R, Piccoli C, Boffoli D, Capitanio N, Ambrosi L, L'Abbate N. G Ital Med Lav Ergon. 2007;29(3 Suppl):542-4. Italian.
49. Role of reactive oxygen species as signal molecules in the pre-commitment phase of adult stem cells. Piccoli C, D'Aprile A, Scrima R, Ripoli M, Boffoli D, Tabilio A, Capitanio N. Ital J Biochem. 2007;56(4):295-301.

50. The hypoxia-inducible factor is stabilized in circulating hematopoietic stem cells under normoxic conditions. Piccoli C, D'Aprile A, Ripoli M, Scrima R, Boffoli D, Tabilio A, Capitanio N. FEBS Lett. 2007 ;581(16):3111-9.
51. Hepatitis C virus protein expression causes calcium-mediated mitochondrial bioenergetic dysfunction and nitro-oxidative stress. Piccoli C, Scrima R, Quarato G, D'Aprile A, Ripoli M, Lecce L, Boffoli D, Moradpour D, Capitanio N. Hepatology. 2007;46(1):58-65.
52. Bone-marrow derived hematopoietic stem/progenitor cells express multiple isoforms of NADPH oxidase and produce constitutively reactive oxygen species. Piccoli C, D'Aprile A, Ripoli M, Scrima R, Lecce L, Boffoli D, Tabilio A, Capitanio N. Biochem Biophys Res Commun. 2007 ;353(4):965-72.
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54. Mitochondrial dysfunction in hepatitis C virus infection. Piccoli C, Scrima R, D'Aprile A, Ripoli M, Lecce L, Boffoli D, Capitanio N. Biochim Biophys Acta. 2006;1757(9-10):1429-37.
55. Regulation by the cAMP cascade of oxygen free radical balance in mammalian cells. Bellomo F, Piccoli C, Cocco T, Scacco S, Papa F, Gaballo A, Boffoli D, Signorile A, D'Aprile A, Scrima R, Sardanelli AM, Capitanio N, Papa S. Antioxid Redox Signal. 2006 ;8(3-4):495-502.
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57. Dysfunctions of cellular oxidative metabolism in patients with mutations in the NDUFS1 and NDUFS4 genes of complex I. Iuso A, Scacco S, Piccoli C, Bellomo F, Petruzzella V, Trentadue R, Minuto M, Ripoli M, Capitanio N, Zeviani M, Papa S. J Biol Chem. 2006 ;281(15):10374-80.
58. pH dependence of proton translocation in the oxidative and reductive phases of the catalytic cycle of cytochrome c oxidase. The role of H2O produced at the oxygen-reduction site. Capitanio G, Martino PL, Capitanio N, De Nitto E, Papa S. Biochemistry. 2006 ;45(6):1930-7.
59. The study of gap junctional intercellular communication in keratinocytes as screening of promoter effect induced by industrial and environmental toxic substances. Zefferino R, Elia G, Lasalvia M, Piccoli C, Boffoli D, Capitanio N, Ambrosi L. Med Lav. 2005 ;96(3):222-30.
60. Characterization of mitochondrial and extra-mitochondrial oxygen consuming reactions in human hematopoietic stem cells. Novel evidence of the occurrence of NAD(P)H oxidase activity. Piccoli C, Ria R, Scrima R, Cela O, D'Aprile A, Boffoli D, Falzetti F, Tabilio A, Capitanio N. J Biol Chem. 2005 ;280(28):26467-76.
61. Protonmotive cooperativity in cytochrome c oxidase. Papa S, Capitanio N, Capitanio G, Palese LL. Biochim Biophys Acta. 2004 ;1658(1-2):95-105.
62. A cooperative model for proton pumping in cytochrome c oxidase. Papa S, Capitanio N, Capitanio G. Biochim Biophys Acta. 2004 ;1655(1-3):353-64.
63. Proton transfer reactions associated with the reaction of the fully reduced, purified cytochrome C oxidase with molecular oxygen and ferricyanide. Capitanio N, Capitanio G, De Nitto E, Boffoli D, Papa S. Biochemistry. 2003 ;42(16):4607-12.
64. The proton/electron coupling ratio at heme a and Cu(A) in bovine heart cytochrome c oxidase. Capitanio N, Capitanio G, Boffoli D, Papa S. Biochemistry. 2000 ;39(50):15454-61.
65. Coupling of electron transfer with proton transfer at heme a and Cu(A) (redox Bohr effects) in cytochrome c oxidase. Studies with the carbon monoxide inhibited enzyme. Capitanio N, Capitanio G, Minuto M, De Nitto E, Palese LL, Nicholls P, Papa S. Biochemistry. 2000 ;39(21):6373-9.
66. Effects of site-directed mutagenesis of protolytic residues in subunit I of Bacillus subtilis aa3-600 quinol oxidase. Role of lysine 304 in proton translocation. Villani G, Capitanio N, Bizzoca A, Palese LL, Carlino V, Tattoli M, Glaser P, Danchin A, Papa S. Biochemistry. 1999 ;38(8):2287-94.
67. Cooperative coupling and role of heme a in the proton pump of heme-copper oxidases. Papa S, Capitanio N, Villani G, Capitanio G, Bizzoca A, Palese LL, Carlino V, De Nitto E. Biochimie. 1998;80(10):821-36.
68. A cooperative model for protonmotive heme-copper oxidases. The role of heme a in the proton pump of cytochrome c oxidase. Papa S, Capitanio N, Villani G. FEBS Lett. 1998;439(1-2):1-8.

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71. Vectorial nature of redox Bohr effects in bovine heart cytochrome c oxidase. Capitanio N, Capitanio G, De Nitto E, Papa S. FEBS Lett. 1997;414(2):414-8.
72. Proton pumping by cytochrome c oxidase is coupled to peroxidase half of its catalytic cycle. Vygodina TV, Capitanio N, Papa S, Konstantinov AA. FEBS Lett. 1997 ;412(3):405-9.
73. A possible role of slips in cytochrome C oxidase in the antioxygen defense system of the cell. Papa S, Guerrieri F, Capitanio N. Biosci Rep. 1997;17(1):23-31.
74. Redox-linked protolytic reactions in soluble cytochrome-c oxidase from beef-heart mitochondria: redox Bohr effects. Capitanio N, Vygodina TV, Capitanio G, Konstantinov AA, Nicholls P, Papa S. Biochim Biophys Acta. 1997 ;1318(1-2):255-65.
75. Factors affecting the H+/e- stoichiometry in mitochondrial cytochrome c oxidase: influence of the rate of electron flow and transmembrane delta pH. Capitanio N, Capitanio G, Demarinis DA, De Nitto E, Massari S, Papa S. Biochemistry. 1996 ;35(33):10800-6.
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78. Proton/electron stoichiometry of mitochondrial bc1 complex. Influence of pH and transmembrane delta pH. Lorusso M, Cocco T, Minuto M, Capitanio N, Papa S. J Bioenerg Biomembr. 1995;27(1):101-8.
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