

Dr Domenico De Rasmò

Curriculum vitae

Personal data

Name	Domenico
Surname	DE RASMO
Birth date	5 July 1978
Birth place	Bari, Italy
E-mail	d.derasmo@ibbe.cnr.it
Current position	Researcher at Institute of Biomembrane and Bioenergetics (IBBE) National Research Council (CNR).

Research Activity

The research activity is focused on:

Regulation of mitochondrial bioenergetics by cAMP signaling and its subcellular compartmentalization in mitochondria.

Characterization of molecular mechanism by which the cytosolic and mitochondrial cAMP signaling impacts mitochondrial bioenergetics in mammalian cell cultures and in fibroblast cell cultures from patients with proliferative and neurodegenerative disorders.

Molecular mechanisms of cell death.

Analysis of the role of intramitochondrial cAMP on the regulation of cellular apoptosis in rat myoblast H9C2 cells.

Effects of nutraceutical compounds on mitochondrial biogenesis.

Characterization of molecular mechanism of nutraceutical-dependent induction of mitochondrial biogenesis in mammalian cell cultures.

Education and training

2011- today: Researcher at the Institute of Biomembrane and Bioenergetics (IBBE), CNR, Bari.

2011: Specialization degree Summa cum Laude in Clinical Biochemistry - Medicine and Surgery Faculty - University of Bari, Italy.

2008-2011: University Research Fellowship, University of Bari.

2008: Ph.D. in Medical Biology and Biochemistry, University of Bari. Thesis title: "cAMP-dependent protein kinase regulates the mitochondrial import of the nuclear encoded NDUFS4 subunit of complex I".

2005: Master Degree in "Biotecnologie avanzate per diagnosi e terapia molecolare" at CEINGE (genetic engineering centre), Naples, Italy.

2004: Laurea degree in Biological Science (110/110 cum Laude) University of Bari, Italy.

Projects and Funds

Principal Investigator, Project MIUR, Fondo Investimenti per la Ricerca di Base (FIRB)-Futuro in Ricerca- 2008, "Functional genomics and pathological dysfunctions of redox and bioenergetics cellular systems" (RBFR0813Z5).

Participant: Oxidative stress and mitochondrial dysfunctions in Down syndrome "Fondation Jérôme Lejeune". Principal Investigator: Dr. Rosa Anna Vacca

Awards

2006: Gold Medal from Italian Society of Biochemistry, 51° National Congress, Riccione , 28-30 Sept.

Invited Speaker

2013. Federation of European Biochemical Societies FEBS CONGRESS 2013, July 6th - 11th St. Petersburg, Russia.

2008. 53 ° National Congress Italian Society of Biochemistry, Riccione, Italy.

Referee activity

He is referee for the following journals: Journal of the Neurological Sciences, Biotechnology Advances, Mitochondrion.

Publications

1. Cervellati C, Sticozzi C, Romani A, Belmonte G, **De Rasmio D**, Signorile A, Cervellati F, Milanese C, Mastroberardino PG, Pecorelli A, Savelli V, Forman HJ, Hayek J, Valacchi G. Impaired enzymatic defensive activity, mitochondrial dysfunction and proteasome activation are involved in RTT cell oxidative damage. *Biochim Biophys Acta*. 2015 Oct;1852 (10 Pt A): 2066-74.
2. De Filippis B, Valenti D, de Bari L, **De Rasmio D**, Musto M, Fabbri A, Ricceri L, Fiorentini C, Laviola G, Vacca RA. Mitochondrial free radical overproduction due to respiratory chain impairment in the brain of a mouse model of Rett syndrome: protective effect of CNF1. *Free Radic Biol Med*. 2015 Jun;83:167-77.
3. **De Rasmio D**, Signorile A, Santeramo A, Larizza M, Lattanzio P, Capitanio G, Papa S. Intramitochondrial adenyl cyclase controls the turnover of nuclear-encoded subunits and activity of mammalian complex I of the respiratory chain. *Biochim Biophys Acta*. 2015 Jan;1853(1):183-91.
4. Signorile A, Micelli L, **De Rasmio D**, Santeramo A, Papa F, Ficarella R, Gattoni G, Scacco S, Papa S. Regulation of the biogenesis of OXPHOS complexes in cell transition from replicating to quiescent state: involvement of PKA and effect of hydroxytyrosol. *Biochim Biophys Acta*. 2014 Apr;1843(4):675-84.
5. Papa S, **De Rasmio D**. Complex I deficiencies in neurological disorders. *Trends Mol Med*. 2013 Jan;19(1):61-9.
6. Valenti D, **De Rasmio D**, Signorile A, Rossi L, de Bari L, Scala I, Granese B, Papa S, Vacca RA. Epigallocatechin-3-gallate prevents oxidative phosphorylation deficit and promotes mitochondrial biogenesis in human cells from subjects with Down's syndrome. *Biochim Biophys Acta*. 2013 Apr;1832(4):542-52.

7. Palorini R, **De Rasmio D**, Gaviraghi M, Sala Danna L, Signorile A, Cirulli C, Chiaradonna F, Alberghina L, Papa S. Oncogenic K-ras expression is associated with derangement of the cAMP/PKA pathway and forskolin-reversible alterations of mitochondrial dynamics and respiration. *Oncogene*. 2013 Jan 17;32(3):352-62.
8. **De Rasmio D**, Signorile A, Larizza M, Pacelli C, Cocco T, Papa S. Activation of the cAMP cascade in human fibroblast cultures rescues the activity of oxidatively damaged complex I. *Free. Rad. Biol. Med.* 2012 Feb 15;52(4):757-64.
9. Papa S, Martino PL, Capitanio G, Gaballo A, **De Rasmio D**, Signorile A, Petruzzella V. The oxidative phosphorylation system in mammalian mitochondria. In: *Advances in mitochondrial Medicine*, Roberto Scatena, Bruno Giardina, Patrizia Bottoni Editors, Springer Verlag Publication. NEW YORK: Springer. Adv Exp Med Biol. 2012;942:3-37
10. **De Rasmio D**, Gattoni G, Papa F, Santeramo A, Pacelli C, Cocco T, Micelli L, Sardaro N, Larizza M, Scivetti M, Milano S, Signorile A. The β -adrenoceptor agonist isoproterenol promotes the activity of respiratory chain complex I and lowers cellular reactive oxygen species in fibroblasts and heart myoblasts. *Eur J Pharmacol*. 2011 Feb 10;652(1-3):15-22.
11. Papa S, **De Rasmio D**, Technikova-Dobrova Z, Panelli D, Signorile A, Scacco S, Petruzzella V, Papa F, Palmisano G, Gnoni A, Micelli L, Sardanelli AM. Respiratory chain complex I, a main regulatory target of the cAMP/PKA pathway is defective in different human diseases. *FEBS Lett*. 2011 Sep 19
12. Signorile A, Sardaro N, **De Rasmio D**, Scacco S, Papa F, Borracci P, Carratù MR, Papa S. Rat embryo exposure to all-trans retinoic acid results in postnatal oxidative damage of respiratory complex I in the cerebellum. *Mol Pharmacol*. 2011 Oct;80(4):704-13.
13. Pacelli C, **De Rasmio D**, Signorile A, Grattagliano I, di Tullio G, D'Orazio A, Nico B, Comi GP, Ronchi D, Ferranini E, Pirolo D, Seibel P, Schubert S, Gaballo A, Villani G, Cocco T. Mitochondrial defect and PGC-1 α dysfunction in parkin-associated familial Parkinson's disease. *Biochim Biophys Acta*. 2011 Aug;1812(8):1041-53.
14. Palmieri VO, **De Rasmio D**, Signorile A, Sardanelli AM, Grattagliano I, Minerva F, Cardinale G, Portincasa P, Papa S, Palasciano G. T16189C mitochondrial DNA variant is associated with metabolic syndrome in Caucasian subjects. *Nutrition*. 2011 Jul-Aug;27(7-8):773-7.
15. **De Rasmio D**, Signorile A, Papa F, Roca E, Papa S. cAMP/Ca²⁺ response element-binding protein plays a central role in the biogenesis of respiratory chain proteins in mammalian cells. *IUBMB Life*. 2010 Jun;62(6):447-52. Review.
16. **De Rasmio D**, Palmisano G, Scacco S, Technikova-Dobrova Z, Panelli D, Cocco T, Sardanelli AM, Gnoni A, Micelli L, Trani A, Di Luccia A, Papa S. Phosphorylation pattern of the NDUFS4 subunit of complex I of the mammalian respiratory chain. *Mitochondrion*. 2010 Aug;10(5):464-71.

17. Papa S, Scacco S, **De Rasmio D**, Signorile A, Papa F, Panelli D, Nicastro A, Scaringi R, Santeramo A, Roca E, Trentadue R, Larizza M. cAMP-dependent protein kinase regulates post-translational processing and expression of complex I subunits in mammalian cells. *Biochim Biophys Acta*. 2010 Jun-Jul;1797(6-7):649-58.
18. **De Rasmio D**, Signorile A, Roca E, Papa S. cAMP response element-binding protein (CREB) is imported into mitochondria and promotes protein synthesis. *FEBS J*. 2009 Aug;276(16):4325-33.
19. Papa S, Petruzzella V, Scacco S, Sardanelli AM, Iuso A, Panelli D, Vitale R, Trentadue R, **De Rasmio D**, Capitanio N, Piccoli C, Papa F, Scivetti M, Bertini E, Rizza T, De Michele G. Pathogenetic mechanisms in hereditary dysfunctions of complex I of the respiratory chain in neurological diseases. *Biochim Biophys Acta*. 2009 May;1787(5):502-17.
20. Panelli D, Petruzzella V, Vitale R, **De Rasmio D**, Munnich A, Rötig A, Papa S. The regulation of PTC containing transcripts of the human NDUFS4 gene of complex I of respiratory chain and the impact of pathological mutations. *Biochimie*. 2008 Oct;90(10):1452-60.
21. Papa S, **De Rasmio D**, Scacco S, Signorile A, Technikova-Dobrova Z, Palmisano G, Sardanelli AM, Papa F, Panelli D, Scaringi R, Santeramo A. Mammalian complex I: a regulable and vulnerable pacemaker in mitochondrial respiratory function. *Biochim Biophys Acta*. 2008 Jul-Aug;1777(7-8):719-28.
22. **De Rasmio D**, Panelli D, Sardanelli AM, Papa S. cAMP-dependent protein kinase regulates the mitochondrial import of the nuclear encoded NDUFS4 subunit of complex I. *Cell Signal*. 2008 May;20(5):989-97.
23. Carsana A, Frisso G, Tremolaterra MR, Ricci E, **De Rasmio D**, Salvatore F. A larger spectrum of intragenic short tandem repeats improves linkage analysis and localization of intragenic recombination detection in the dystrophin gene: an analysis of 93 families from southern Italy. *J Mol Diagn*. 2007 Feb;9(1):64-9.
24. Sardanelli AM, Signorile A, Nuzzi R, **De Rasmio D**, Technikova-Dobrova Z, Drahota Z, Occhiello A, Pica A, Papa S. Occurrence of A-kinase anchor protein and associated cAMP-dependent protein kinase in the inner compartment of mammalian mitochondria. *FEBS Lett*. 2006 Oct 16;580(24):5690-6. Epub 2006 Sep 18.