## INFORMAZIONI PERSONALI/ PERSONAL INFORMATION


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## ESPERIENZA PROFESSIONALE /WORK EXPERIENCE

**1 settembre 1987:** Assunzione come Ricercatore di III livello presso il Centro di Studio del C.N.R. sulla Biologia Cellulare e molecolare delle Piante di Milano ora Istituto di Biofisica del C.N.R, Sezione di Milano di cui fa tuttora parte rivestendo anche il ruolo di segretario amministrativo dal dicembre 2002 al dicembre 2010

**1 dic 1982 –31 ago 1987** : Assegno di Formazione Professionale del C.N.R., assegnato per concorso, presso il Centro di Studio del C.N.R. sulla Biologia Cellulare e Molecolare delle Piante di Milano.

## ISTRUZIONE E FORMAZIONE / EDUCATION AND TRAINING

Settembre 1987 : Conseguimento del titolo di **Dottore in ricerca** presentando la tesi:"La pompa protonica del plasmalemma di piante superiori: interazioni regolative tra attività della pompa e pH intracellulare".

Luglio1984: Conseguimento del **diploma della scuola di Perfezionamento** in Biologia dell'Univ. degli Studi di Milano con la votazione di 70/70 e lode presentando la tesi: "Effetti di variazioni del pH intracellulare sull'attività della pompa protonica di piante superiori".

Luglio 1981: Conseguimento della **laurea in Scienze Biologiche** presso l'Univ. degli Studi di Milano con la votazione di 110/110 e lode presentando la tesi: "Potenziale elettrico transmembrana, eterosi e ibridi di granturco".

1987 PhD in Cellular and Molecular biology

1984 Degree from the Specialization School in Biological Research,

1981 Graduation in Biological Sciences

## ATTIVITA' DI RICERCA / RESEARCH ACTIVITIES

- Dal 2005 collaborazione con Anna Moroni sulla cristallizzazione e caratterizzazione di canali virali del potassio :produzione e purificazione delle proteine canale, test dell'attività della proteina in planar lipid bilayer, espressione e purificazione di diverse proteine di membrana e nuove proteine canale, produzione di anticorpi monoclonali anti Kcv

-From year 2005 actively collaborating with Anna Moroni on the crystallization and caratterization of viral K+ channels: production, and purification of channel proteins, activity test with planar lipid bilayer, expression and purification of several membrane proteins and new protein channels, production of monoclonal antibodies against Kcv.

Precedentemente:

- calcio ATPasi del plasma lemma: effetto di ormoni (ABA), cambiamenti di potenziale osmotico e oligogalatturonidi sulla pompa calcio

- attività della H+ ATPasi del plasmalemma: studi di trasporto ionico in vivo (in particolare H+, K+) anche con traccianti radioattivi;utilizzo della distribuzione di acidi e basi deboli come mezzo per studiare variazioni di pH citosolico e vacuolare in presenza di possibili effettori dell'attività della pompa protonica

Previously:

- plasma membrane $Ca^{2+}$ ATPase: effect of hormones (ABA), and osmotic potential changes on the calcium pump

- plasma membrane $H^+$ ATPase activity: in *vivo* ion transport studies with radioactive tracers, weak acid and weak base distribution as a tool to study cytosolic and vacuolar pH changes

**Pubblicazioni/ Books and Articles**


V.Rondelli, E.DelFavero, P.Brocca, G.Fragneto, M.Trapp, L.Mauri, M.G.Ciampa, G.Romani , C.J.Braun, L.Winterstein , I.Schroeder, G.Thiel, A.Moroni, L.Cantu. Directional K + channel insertion in a single phospholipid bilayer: Neutron reflectometry and electrophysiology in the joint exploration of a model membrane functional platform BBA 1862 (8), 1742-1750 (2018).

M.L.DiFrancesco, S. Gazzarrini, C.Arrigoni, G.Romani , G. Thiel A.Moroni. Engineering a $Ca^{++}$-Sensitive (Bio)Sensor from the Pore-Module of a Potassium Channel. Sensors,15, 4913-4924(2015)

G. Romani, *A*. Piotrowski, S. Hillmer, S. Gazzarrini, J. Gurnon, J. L. VanEtten, A.Moroni, G. Thiel . Viral Encoded Potassium Ion Channel Is a Structural Protein in the Chlorovirus Paramecium bursaria chlorella virus-1 (PBCV-1) Virion. Journal of General Virology (2013)

C.Arrigoni, I. Schroeder, G. Romani G, J.L. Van Etten, G.Thiel and A.Moroni. The voltage sensing domain of a phosphatase gates the pore of a potassium channel. Journal of General Physiology, 141, 3, 389-395 (2013).

S.Gazzarrini, M.Kang, A.Abenavoli, G.Romani, C.Olivari, D.Gaslini, G.Ferrara, J. L Van Etten, M. Kreim, S.M.Kast, G. Thiel, A. Moroni, A. Chlorella virus ATCV1 encodes a functional potassium channel of eighty-two amino acids. Biochemical Journal 420: 295–303 (2009)

B.Sottocornola, S.Gazzarrini, C. Olivari, G. Romani, P. Valbuzzi, G. Thiel and A. Moroni. 14-3-3 proteins regulate the $K^+$ channel KAT1 by a dual mode. Plant Biology, 1435-8603 (2007)

G. Romani, M.C. Bonza, I. Filippini, M. Cerana, N. Beffagna and M.I. De Michelis. Involvement of the Plasma Membrane $Ca^{2+}$-ATPase in the short term response of *Arabidopsis thaliana* cultured cells to Oligogalacturonide. Plant Biology **6:** 192-200 (2004).

N. Beffagna, G. Romani and M.C. Sforza. $H^+$ fluxes at plasmalemma level: in vivo evidence for a significant contribution of the $Ca^{2+}$-ATPase and for the involvement of its activity in the abscisic acid-induced changes in the Egeria leaves. Plant Biology **2**: 168-175 (2000).

G. Romani, S. Pallini and N. Beffagna. Down regulation of the plasmalemma $H^+$ pump activity by nicotine-induced intracellular alkalinization. A balance between base accumulation, biochemical pH-stat response and intracellular pH increase. Plant Cell Physiology **39**: 169-176 (1998).

N. Beffagna, G. Romani, G. Meraviglia and S. Pallini. Effect of the abscisic acid and cytoplasmic pH on potassium and chloride efflux in *Arabidopsis thaliana* seedlings. Plant Cell Physiology **38**: 503-510 (1997).

G. Meraviglia, G. Romani, and N. Beffagna. The *Chl1 Arabidopsis* mutant impaired in the nitrate-inducible $NO_3$ transporter has acidic pH in the absence of nitrate. Journal of Plant Physiology **149**: 307-310 (1996).

G. Romani, N. Beffagna, and G. Meraviglia. Role for the vacuolar $H^+$-ATPase in regulating the cytoplasmic pH: an in vivo study carried out in *chl1*, an *Arabidopsis thaliana* mutant impaired in NO3- transport. Plant and Cell Physiology **37**: 285-291 (1996).

N.Beffagna, G. Romani and L. Gatti. Changes in chloride fluxes and cytosolic pH induced by abscisic acid in *Elodea densa* leaves. Botanica Acta **108**: 74-79 (1995).

N.Beffagna, and G. Romani. Suitability of Arabidopsis for studies on intracellular pH regulation: correlation between $H^+$ pump activity, cytosolic pH and malate level in wild-type and in a mutant partially insensitive to fusicoccin. Plant Cell and Environment 17: 681-690 (1994).

N.Beffagna, G. Romani, and S. Lovadina. Inhibition of malate synthesis by vanadate: implication for the cytosolic alkalinization induced by vanadate concentration partially inhibiting the plasmalemma $H^+$ pump. Journal of Experimental Botany **44,** 267: 1535-1542 (1993).

E. Marrè, M. Bellando, N. Beffagna, M.T. Marrè, G. Romani and P. Vergani. Synergisms, additive and non additive factors regulating proton extrusion and intracellular pH. In "Current Topics in Plant Biochemistry and Physiology", D.G. Blevins, R.Sharp, A.J. Novacky and D.D. Randal eds., University of Missouri, Columbia Press, Vol.11: 213-230 (\1992).

N.Beffagna, and, G. Romani. Modulation of the plasmalemma proton pump activity by intracellular pH in *Elodea densa* leaves: correlation between acid load and $H^+$ pump activity. Plant Physiol and Biochem. 29: 4712-480 (1991).

G.Romani, and N. Beffagna. Effect of some triazole fungicides on intracellular pH and on cell membrane permeabilità in leaves of *Elodea densa* (Planch) Casp*. New Phytologist 117: 431-437 (1991).

E. Marrè, G. Romani, N. Beffagna and V. Trockner. Intracellular pH alkalinization associated with fusiciccin-$K^+$-induced activation of $H^+$ pump in Elodea densa leaves. In "Membrane transport in Plant and Fungi", M.I. Beilby, N.A. Walker and J.R. Smith eds., Proceedings of the 7th International Workshop of Plant Membrane Transport, Sydney: 171-177 (1990).

N.Beffagna, G. Romani, and E.Marrè. ATP level and proton pump activity in Elodea Leaves. In "Plant Membrane Transport: The Current Position". J. Dainty, M.I. DeMichelis, E. Marrè and F. Rasi-Caldogno eds., Elsevier Science Publishers B.V. (Biomedical Division), Amsterdam 319-320 (1989).

N.Beffagna, and, G. Romani. Intracellular pH measurements in plant tissues. Suitability of the weak acid and weak base distribution method in *Elodea densa* leaves. Plant Physiol and Biochem. **27**: 423-430 (1989).

E. Marrè, M.T. Marrè and G. Romani. Action of fusicoccin in vivo: Physiological and Biochemical consequences. In "Phytotoxin and Plant Phatogenesis". Graniti et al., eds., NATO ASI Series Spring-Verlag Series Heidelberg. **27**: 131-142 (1989).

N.Beffagna, and, G. Romani. Effects of two plasmalemmaATPase inhibitors on $H^+$ extrusion and intracellular pH in *Elodea densa* leaves. Journal of Experimental Botany **39**: 1033-1043 (1988).

E. Marrè, N.Beffagna, and, G. Romani. Potassium transport and regulation of intracellular pH in *Elodea densa* leaves. Botanica Acta **101:** 17-23 (1987).

F. Albergoni, M.T. Marrè, V. Trockner, N.Beffagna, G. Romani, and E.Marrè. Changes of vacuolar and cytoplasmic pH Associated with the activation of the $H^+$ pump in Elodea leaves. In " Plant Vacuole: Their importance in solute Compartmentation in Cell and Their Application in plant Biotechnology" B. Marin ed., Plenum Press 205-213 (1987).

M.T. Marrè, G. Romani, M. Bellando, and E. Marrè. Stimulation of weak acid uptake and increase of cell sap pH as an evidence for FC- $K^+$-induced cytosolic alkalinization. Plant Physiology **82**: 316-323 (1986).

G. Romani, M.T. Marrè, M. Bellando, G. Alloatti, and E. Marrè . $H^+$ extrusion and potassium uptake associated with potential hyperpolarization in maize and wheat root segments treated with permeant weak acid. Plant Physiology **79**: 734-739 (1985).

M. Bellando, G. Alloatti, G. Romani, and M.T. Marrè. The effect of xanthoxylin (2-oxy 4,6- dimethoxyacetophenone) on potassium dependent acid extrusion in wheat and maize root segments. Plant Cell and Environment **8**. 231-234 (1985).

E. Marrè, MT. Marrè, G. Romani. Effect of plant hormones on transport and metabolism: involvement of changes in cytoplasmic pH. Proceedings of the 16th Meeting of FEBS, Moscow, VNU Science Press, Utrecht, 405-412 (1985).

M. Bellando, M.T. Marrè, and, G. Romani. On the action of Xanthoxylin on $K^+$ uptake in wheat and maize roots. Phytopath. Mediterr.**24**: 289-290 (1985).

M.T. Marrè, G. Romani, and E. Marrè. Transmembrane hyperpolarization and increase of $K^+$ uptake in maize roots treated with permeant weak acids. Plant, Cell and Environment **6**: 617-623 (1983).

G. Romani, M.T. Marrè and E. Marrè Effects of permeant weak acids on dark CO2 fixation and malate level in maize root segments. Physiol.vég**. 21**: 867-873. 1983

G. Romani, M.T. Marrè, A. Bonetti, R. Cerana, P. Lado and E. Marrè. Effect of a brassinosteroid on growth and electrogenic proton extrusion in maize root segments. Physiol. Plant, **59**: 528-532 (1983).

R. Cerana, A. Bonetti, M.T. Marrè, G. Romani, P. Lado and E. Marrè. Effect of a brassinosteroid on growth and electrogenic proton extrusion in Azuki beans epicotyls. Physiol. Plant, **59**: 23-27 (1983).

G. Romani, M.T. Marrè, M. Cocucci and E. Marrè. On the mechanism of action of FC on $H^+$ extrusion. Phytopath. Mediterr.**22**: 92-94 (1983).

M.M. Moloney, P.E. Pilet, M.T. Marrè, and G. Romani. Transmembrane electrical potentials in growing maize roots: anti-auxin effects. Planta **156**: 407-412 (1982).

A. Bonetti, R. Cerana, P. Lado , E. Marrè, M.T. Marrè, and G. Romani. Mechanism of action of the pollen hormone Brassinolide. In "Pollen: Biology and Applications in Plant Breeding", D.L. Mulany and E. Ottaviano eds.: Elsevier Biochemical Press: 9-14 (1982**).**

M.T. Marrè, G. Romani, M. Cocucci and E. Marrè. Internal pH and transmembrane potential as regulators of the activity of proton pumps of higher plants. In " Proceedings of the International Workshop on Membrane and Transport in Biosystems", Lito-Stampa Laterza, Bari: 111-114 (1982).

M.T. Marrè, G. Romani, M. Cocucci, M.M. Moloney and E. Marrè. Divalent cation influx, depolarisation of the transmembrane electric potential and proton in maize root segments. In "Plasmalemma and Tonoplast. Their Function in the Plant Cell", D. Marmè and R. Hertel eds., **5**:3-13 (1982).

M.T. Marrè and G. Romani. Heterotic behaviour of the transmembrane electric potential difference in some maize hybrid-parents combination. Plant Sci. Lett. **27**: 265-273 (1982).

## ULTERIORI INFORMAZIONI / ADDITIONAL INFORMATION

**Settembre 2001-settembre 2005** : segretario della Società Italiana di Fisiologia Vegetale (FISV) con funzioni amministrative e organizzative. Nell'ambito di questa attività ha partecipato all'organizzazione di 4 Congressi Annuali della Società (Riva del Garda 2002, Rimini 2003, Lecce 2004, Riva del Garda 2005) e di 3 Scuole:

Maratea, 17 - 20 giugno "Interazioni fra Patogeni e Piante"

Bertinoro, 25-26 Febbraio 2005 ""43anni e mezzo di Fisiologia vegetale:il punto della situazione"

Maratea, 8-11 giugno 2005 " Summer School in Plant Development".

Sept.2001- sept 2005 Secretary of Italian Society of Plant Physiology