

Curriculum vitae of Sabrina Gazzarrini



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EDUCATION

Degree in Biological Sciences, University of Milan, Italy.

WORK EXPERIENCES

From 1999: Laboratory Technician, University of Milan, Department of Biosciences, Milan, Italy.

From 2016: Lab Manager in Anna Moroni's Group, University of Milan, Department of Biosciences, Milan, Italy.

RESEARCH FIELDS

Study of properties and regulation of membrane ion channels (structural-function relationship and gating mechanism) using electrophysiological, biochemical, and molecular biology tools in *Xenopus* oocytes model system.

The research projects are based on the study of viral ion channels (Influenza M2 proton channels, viral Kcv potassium Channel), mammalian HCN channels, plant potassium channels (KAT1, KAT2, GORK) and functional studies of light-driven channels.

LIST OF PUBLICATIONS

1. Tonelli, M., Naesens, L., **Gazzarrini**, S., Santucci, M., Cichero, E., Tasso, B., Moroni, A., Costi, M.P., Loddo, R. Host dihydrofolate reductase (DHFR)-directed cycloguanil analogues endowed with activity against influenza virus and respiratory syncytial virus (2017) *Eur J Med Chem*, 135, pp. 467-478.
2. Barniol-Xicota, M., **Gazzarrini**, S., Torres, E., Hu, Y., Wang, J., Naesens, L., Moroni, A., Vázquez, S. Slow but Steady Wins the Race: Dissimilarities among New Dual Inhibitors of the Wild-Type and the V27A Mutant M2 Channels of Influenza A Virus (2017) *J Med Chem*, 60 (9), pp. 3727-3738.
3. Baumeister, D., Hertel, B., Schroeder, I., **Gazzarrini**, S., Kast, S.M., Van Etten, J.L., Moroni, A., Thiel, G. Conversion of an instantaneous activating K⁺ channel into a slow activating inward rectifier (2017) *FEBS Letters*, 591 (2), pp. 295-303.
4. Llabrés, S., Juárez-Jiménez, J., Masetti, M., Leiva, R., Vázquez, S., **Gazzarrini**, S., Moroni, A., Cavalli, A., Luque, F.J. Mechanism of the Pseudoirreversible Binding of Amantadine to the M2 Proton Channel (2016) *Journal of the American Chemical Society*, 138 (47), pp. 15345-15358.
5. Wu, S., Huang, J., **Gazzarrini**, S., He, S., Chen, L., Li, J., Xing, L., Li, C., Chen, L., Neochoritis, C.G., Liao, G.P., Zhou, H., Dömling, A., Moroni, A., Wang, W. Isocyanides as influenza A virus subtype H5N1 wild-type M2 channel inhibitors (2015) *ChemMedChem*, 10 (11), pp. 1837-1845.
6. Rey-Carrizo, M., **Gazzarrini**, S., Llabrés, S., Frigolé-Vivas, M., Juárez-Jiménez, J., Font-Bardia, M., Naesens, L., Moroni, A., Luque, F.J., Vázquez, S. New polycyclic dual inhibitors of the wild type and the V27A mutant M2 channel of the influenza A virus with unexpected binding mode (2015) *European Journal of Medicinal Chemistry*, 96, pp. 318-329.
7. Cosentino, C., Alberio, L., **Gazzarrini**, S., Aquila, M., Romano, E., Cermenati, S., Zuccolini, P., Petersen, J., Beltrame, M., Van Etten, J.L., Christie, J.M., Thiel, G., Moroni, A. Engineering of a light-gated potassium channel (2015) *Science*, 348 (6235), pp. 707-710.
8. Leiva, R., **Gazzarrini**, S., Esplugas, R., Moroni, A., Naesens, L., Sureda, F.X., Vázquez, S. Ritter reaction-mediated syntheses of 2-oxadamantan-5-amine, a novel amantadine analog (2015) *Tetrahedron Letters*, 56 (10), pp. 1272-1275.
9. DiFrancesco, M.L., **Gazzarrini**, S., Arrigoni, C., Romani, G., Thiel, G., Moroni, A. Engineering a Ca²⁺ sensitive (Bio)sensor from the pore-module of a potassium channel (2015) *Sensors*, 15, pp. 4913-4924.
10. Torres, E., Leiva, R., **Gazzarrini**, S., Rey-Carrizo, M., Frigolé-Vivas, M., Moroni, A., Naesens, L., Vázquez, S. Azapropellanes with anti-influenza a virus activity (2014) *ACS Medicinal Chemistry Letters*, 5 (7), pp. 831-836.

11. Schroeder, I., **Gazzarrini, S.**, Ferrara, G., Thiel, G., Hansen, U.-P., Moroni, A. Creation of a reactive oxygen species-insensitive Kcv channel (2013) *Biochemistry*, 52 (18), pp. 3130-3137.
12. Lolicato, M., Nardini, M., **Gazzarrini, S.**, Moller, S., Bertinetti, D., Herberg, F.W., Bolognesi, M., Martin, H., Fasolini, M., Bertrand, J.A., Arrigoni, C., Thiel, G., Moroni, A. Tetramerization dynamics of C-terminal domain underlies isoform-specific cAMP gating in hyperpolarization-activated cyclic nucleotide-gated channels (2011) *Journal of Biological Chemistry*, 286 (52), pp. 44811-44820.
13. Chatelain, F.C., **Gazzarrini, S.**, Fujiwara, Y., Arrigoni, C., Domigan, C., Ferrara, G., Pantoja, C., Thiel, G., Moroni, A., Minor Jr., D.L. Selection of inhibitor-resistant viral potassium channels identifies a selectivity filter site that affects barium and amantadine block (2009) *PLoS ONE*, 4 (10), art. no. e7496.
14. Abenavoli, A., DiFrancesco, M.L., Schroeder, I., Epimashko, S., **Gazzarrini, S.**, Hansen, U.P., Thiel, G., Moroni, A. Fast and slow gating are inherent properties of the pore module of the K⁺ channel Kcv (2009) *Journal of General Physiology*, 134 (3), pp. 219-229.
15. **Gazzarrini, S.**, Kang, M., Abenavoli, A., Romani, G., Olivari, C., Gaslini, D., Ferrara, G., Van Etten, J.L., Kreim, M., Kast, S.M., Thiel, G., Moroni, A. Chlorella virus ATCV-1 encodes a functional potassium channel of 82 amino acids (2009) *Biochemical Journal*, 420 (2), pp. 295-303.
16. Sottocornola, B., **Gazzarrini, S.**, Olivari, C., Romani, G., Valbuzzi, P., Thiel, G., Moroni, A. 14-3-3 Proteins regulate the potassium channel KAT1 by dual modes (2008) *Plant Biology*, 10, pp. 231-236.
17. Tsunoda, S.P., Ewers, D., **Gazzarrini, S.**, Moroni, A., Gradmann, D., Hegemann, P. Erratum: H⁺-pumping rhodopsin from the marine alga *Acetabularia* (*Biophysical Journal* (2006) 91, (1471-1479)) (2007) *Biophysical Journal*, 92 (2), p. 697.
18. Sottocornola, B., Visconti, S., Orsi, S., **Gazzarrini, S.**, Giacometti, S., Olivari, C., Camoni, L., Aducci, P., Marra, M., Abenavoli, A., Thiel, G., Moroni, A. The potassium channel KAT1 is activated by plant and animal 14-3-3 proteins (2006) *Journal of Biological Chemistry*, 281 (47), pp. 35735-35741.
19. **Gazzarrini, S.**, Abenavoli, A., Gradmann, D., Thiel, G., Moroni, A. Electrokinetics of miniature K⁺ channel: Open-state V sensitivity and inhibition by K⁺ driving force (2006) *J Membr Biol*, 214, pp 9-17.
20. Tsunoda, S.P., Ewers, D., **Gazzarrini, S.**, Moroni, A., Gradmann, D., Hegemann, P. H⁺-pumping rhodopsin from the marine alga *Acetabularia* (2006) *Biophysical Journal*, 91 (4), pp. 1471-1479.
21. **Gazzarrini, S.**, Kang, M., Epimashko, S., Van Etten, J.L., Dainty, J., Thiel, G., Moroni, A. Chlorella virus MT325 encodes water and potassium channels that interact synergistically (2006) *Proceedings of the National Academy of Sciences of the United States of America*, 103 (14), pp. 5355-5360.
22. Frohns, F., Käsmann, A., Kramer, D., Schäfer, B., Mehmel, M., Kang, M., Van Etten, J.L., **Gazzarrini, S.**, Moroni, A., Thiel, G. Potassium ion channels of chlorella viruses cause rapid depolarization of host cells during infection (2006) *Journal of Virology*, 80 (5), pp. 2437-2444.
23. Kang, M., Graves, M., Mehmel, M., Moroni, A., **Gazzarrini, S.**, Thiel, G., Gurnon, J.R., Van Etten, J.L. Genetic diversity in chlorella viruses flanking *kcv*, a gene that encodes a potassium ion channel protein (2004) *Virology*, 326 (1), pp. 150-159.
24. **Gazzarrini, S.**, Kang, M., Van Etten, J.L., Tayefeh, S., Kast, S.M., DiFrancesco, D., Thiel, G., Moroni, A. Long distance interactions within the potassium channel pore are revealed by molecular diversity of viral proteins (2004) *Journal of Biological Chemistry*, 279 (27), pp. 28443-28449.
25. Kang, M., Moroni, A., **Gazzarrini, S.**, DiFrancesco, D., Thiel, G., Severino, M., Van Etten, J.L. Small potassium ion channel proteins encoded by chlorella viruses (2004) *Proceedings of the National Academy of Sciences of the United States of America*, 101 (15), pp. 5318-5324.
26. Kang, M., Moroni, A., **Gazzarrini, S.**, Van Etten, J.L. Are chlorella viruses a rich source of ion channel genes? (2003) *FEBS Letters*, 552 (1), pp. 2-6.
27. **Gazzarrini, S.**, Severino, M., Lombardi, M., Morandi, M., DiFrancesco, D., Van Etten, J.L., Thiel, G., Moroni, A. The viral potassium channel Kcv: Structural and functional features (2003) *FEBS Lett*, 552 (1), pp. 12-16.
28. Moroni, A., Viscomi, C., Sangiorgio, V., Pagliuca, C., Meckel, T., Horvath, F., **Gazzarrini, S.**, Valbuzzi, P., Van Etten, J.L., DiFrancesco, D., Thiel, G. The short N-terminus is required for functional expression of the virus-encoded miniature K⁺ channel Kcv (2002) *FEBS Letters*, 530 (1-3), pp. 65-69.
29. **Gazzarrini, S.**, Etten, J.L., DiFrancesco, D., Thiel, G., Moroni, A. Voltage-dependence of virus-encoded miniature K⁺ channel Kcv (2002) *Journal of Membrane Biology*, 187 (1), pp. 15-25.
30. Moroni, A., **Gazzarrini, S.**, Cerana, R., Colombo, R., Sutter, J.-U., DiFrancesco, D., Gradmann, D., Thiel, G. Mutation in pore domain uncovers cation- and voltage-sensitive recovery from inactivation in KAT1 channel (2000) *Biophysical Journal*, 78 (4), pp. 1862-1871.
31. Plugge, B., **Gazzarrini, S.**, Nelson, M., Cerana, R., Van Etten, J.L., Derst, C., DiFrancesco, D., Moroni, A., Thiel, G. A potassium channel protein encoded by chlorella virus PBCV-1 (2000) *Science*, 287 (5458), pp. 1641-1644.