

LANDMARK RESEARCH ARTICLES REPORTING THE DISCOVERY OF THE FIRST WATER CHANNEL PROTEIN (LATER CALLED AQUAPORIN 1)

1. Gh. Benga, O. Popescu, V.I. Pop, R.P. Holmes, p-(Chloromercuri)benzenesulfonate binding by membrane proteins and the inhibition of water transport in human erythrocytes, *Biochemistry*, 25, 1535-1538, 1986.
2. Gh. Benga, O. Popescu, Victoria Borza, Ana Mureşan, V.I. Pop, I. Mocsy, A. Brain, J. Wrigglesworth, Water permeability of human erythrocytes: identification of membrane proteins involved in water transport, *Eur. J. Cell Biol.*, 41, 252-262, 1986.

REVIEWS PRESENTING THE DISCOVERY OF THE FIRST WATER CHANNEL PROTEIN (LATER CALLED AQUAPORIN 1)

3. Gh. Benga, Water transport in red blood cell membranes, *Prog. Biophys. molec. Biol.*, 51, 193-245, 1988.
4. Gh. Benga, Membrane proteins involved in the water permeability of human erythrocytes, in "Water transport in Biological Membranes", Gh. Benga, (Ed.), CRC Press, Boca Raton, Fl. (USA), 1989, vol. II, pp.41-62.
5. Gh. Benga, Water exchange through the erythrocytes membrane, *International Review of Cytology*, 114, 273-316, 1989.
6. Gh. Benga, Permeability through pores and holes, *Curr. Opinion Cell Biol.*, 1, 771-774, 1989.
7. Gh. Benga, The first discovery of the first water channel protein (later called aquaporin 1) in the red blood cell membrane was performed in 1985 in Cluj-Napoca, Romania, by the use of a radioactively labeled mercurial SH reagent, in "Metal Elements in Environment, Medicine and Biology", Proc. 5th Int. Symp., Timişoara, Nov. 4-6, 2002, Z. Gârban, P. Drăgan, Gabriela Gârban (Eds), "Eurobit" Publishing House, Timişoara, 2002, vol. V, pp. 43-52.
8. Gh. Benga, Canalele proteice pentru apă (aquaporine) din membranele celulare: de la descoperirea lor la Cluj-Napoca în 1985 la premiul Nobel pentru chimie 2003, *Craiova Medicală*, 6, Suppl. 2: 201-203, 2004.
9. Gh. Benga, The discovery of the first water channel protein (later called aquaporin 1) in the human red blood cell membrane in 1985 in Cluj-Napoca, Romania, a few years before Peter Agre (2003 Nobel prize in chemistry) in "Metal Elements in Environment, Medicine and Biology", Proc. 6th Int. Symp., Timişoara, Nov. 8-10, 2004, Gârban Z., Drăgan P., Gârban Gabriela (Eds), "Eurobit" Publishing House, Timişoara, vol. VI, pp. 61-74, 2004.
10. Gh Benga, Proteinele canal pentru apă (aquaporinele) din membranele celulare: de la descoperirea lor la Cluj-Napoca în 1985 la Premiul Nobel pentru chimie în 2003 și la implicațiile lor medicale. *Documenta haematologica*, 13(3-4), 13-19, 2004.
11. Gh. Benga, The first water channel protein (later called aquaporin 1) was first discovered in Cluj-Napoca, Romania, *Rom. J. Physiol*, 41, 3-20, 2004.
12. Gh. Benga, Water channel proteins: from their discovery in 1985 in Cluj-Napoca, Romania, to the 2003 Nobel Prize in Chemistry and their Medical Implications, The 9th World Multi-Conference on Systemics, Cybernetics and Informatics, Orlando, Fl. (USA), 10, 99-104, 2005.

13. Gh. Benga, Water channel proteins: from their discovery in Cluj-Napoca, Romania in 1985, to the Nobel Prize in chemistry and their implications in molecular medicine, *The Keio J. Med.*, Tokyo, 55 (2), 64-69, 2006.
14. Gh. Benga, O prioritate mondială a științei românești: de la descoperirea primei proteine canal pentru apă (numită ulterior aquaporina 1) la Cluj-Napoca în 1985 la Premiul Nobel pe 2003 pentru chimie și la implicațiile medicale ale aquaporinelor, în "Apa - Un miracol", *Lucrările celui de-al III-lea Congres al Academiei Oamenilor de Știință*, V. Cândea, M. Godeanu, I. Tripșa (eds.), Editura Europa Nova, București, pp.744-748, 2006.
15. Gh. Benga, Water channels (aquaporins and relatives): twenty years after their discovery in Cluj-Napoca, Romania, *Acta Endocrinologica*, 2 (3), 323-335, 2006.
16. Gh. Benga, Foreword: Water channel proteins, *Cell. Mol. Biol.*, 52, 1, 2006.
17. Gh. Benga, Water channel proteins: from their discovery in 1985 in Cluj-Napoca, Romania, to the 2003 Nobel Prize in Chemistry, *Cell. Mol. Biol.*, 52, 10-19, 2006.
18. Gh. Benga: Twenty five years since the discovery in Cluj-Napoca, Romania, of the first water channel protein (later called aquaporin 1), in Gheorghe Benga (Editor), *Proceedings of The First World Congress on Water Channel Proteins (Aquaporins and Relatives) Celebrating the 25th Anniversary of the Discovery of the First Water Channel Protein (Later Called Aquaporin 1)*, Casa Cărții de Știință, Cluj-Napoca, 2011, pp. 52-56.
19. Gh. Benga: The discovery of the first water channel protein, later called aquaporin 1: Who and when? *Proceedings of The First World Congress on Water Channel Proteins (Aquaporins and Relatives) Celebrating the 25th Anniversary of the Discovery of the First Water Channel Protein (Later Called Aquaporin 1)*, Second edition, Casa Cărții de Știință, Cluj-Napoca, 2012, pp. 7-14.
20. Gh. Benga: Foreword to the special issue on water channel proteins (aquaporins and relatives) in health and disease: 25 years after the discovery of the first water channel protein, later called aquaporin 1, *Mol. Asp. Med.*, 33, 511-513, 2012.

EXTENSIVE CHARACTERIZATION IN 1977-1985 BY BENGA GROUP OF WATER CHANNELS IN RED BLOOD CELLS BEFORE THE DISCOVERY OF THE FIRST WATER CHANNEL PROTEIN (LATER CALLED AQUAPORIN 1)

21. V.V. Morariu, Gh. Benga, Evaluation of a nuclear magnetic resonance technique for the study of water exchange through erythrocyte membranes in normal and pathological subjects, *Biochim. Biophys. Acta*, 469, 301-310, 1977.
22. V.V. Morariu, V.I. Pop, O. Popescu, Gh. Benga, Effects of temperature and pH on the water exchange through erythrocyte membranes: Nuclear magnetic resonance studies, *J. Membrane Biol.*, 62, 1-5, 1981.
23. Gh. Benga, V.I. Pop, M. Ionescu, R. P. Holmes, O. Popescu, Irreversible inhibition of water transport in erythrocytes by fluorescein mercuric acetate, *Cell Biol. Int. Rep.*, 6, 775-781, 1982.
24. Gh. Benga, O. Popescu, R.P. Holmes, V.I. Pop, NMR studies on the mechanism of water diffusion through human erythrocyte membranes, *Bulletin of Magnetic Resonance*, 5, 265, 1983

25. Gh. Benga, V.I. Pop, O. Popescu, M. Ionescu, V. Mihele, Water exchange through erythrocyte membranes: Nuclear magnetic resonance studies on the effects of inhibitors and of chemical modification of human membranes, *J. Membrane Biol.*, 76, 129-137, 1983.
26. Gh. Benga, O. Popescu, V.I. Pop, Water exchange through erythrocyte membranes. V. Incubation with papain prevents the p-chloromercuribenzensulfonate inhibition of water diffusion studied by a nuclear magnetic resonance technique, *Cell Biol. Int. Rep.*, 7, 807-818, 1983.
27. Gh. Benga, B. D. Travis, V.I. Pop, O. Popescu, S. Toader, R.P. Holmes, The effect of the saturation and isomerization of dietary fatty acids on the osmotic fragility and water diffusional permeability of rat erythrocytes, *Biochim. Biophys. Acta*, 775, 255-259, 1984.
28. Gh. Benga, O. Popescu, V.I. Pop, Water exchange through erythrocyte membranes: p- chloromercuribenzene sulfonate inhibition of water diffusion in ghosts studied by a nuclear magnetic resonance technique, *Bioscience Rep.*, 5, 223-228, 1985.
29. Gh. Benga, O. Popescu, V.I. Pop, R.P. Holmes, T. Pavel, M. Ionescu, Modifications of human erythrocyte membranes and their effect on water permeability studied by a nuclear magnetic resonance technique, in "Water and Ions in Biological Systems", A. Pullman, V. Vasilescu, L. Packer (eds.), Plenum Press, New York, 1985, pp.303-312.

PRIORITIES OF BENGA GROUP IN REVEALING THE MEDICAL IMPLICATIONS OF WATER CHANNEL PROTEINS

30. Gh. Benga, V.V. Morariu, Membrane defect affecting water permeability in human epilepsy, *Nature*, 265, 636-638, 1977.
31. V.V. Morariu, Ileana Benga, Gh. Benga, Studii de rezonanță magnetică nucleară (RMN) asupra difuziunii apei prin membranele eritrocitare la copiii epileptici, *Bul. Acad. Șt. Med.*, nr. 2/1980, pp. 32-37.
32. Ana-Maria Șerbu, Alice Marian, O. Popescu, V.I. Pop, Victoria Borza, Ileana Benga, Gh. Benga, Decreased water permeability of erythrocyte membranes in patients with Duchenne muscular dystrophy, *Muscle & Nerve*, 9, 243-247, 1986.
33. Gh. Benga, O. Popescu, V.I. Pop, Victoria Borza, Ana Mureșan, Adriana Hodârnu, Ileana Benga, I. Ionescu, Recent investigation on water permeability of erythrocytes in normal and Duchenne muscular dystrophy subjects, in "Biomembranes - Basic and Medical Research", Gh. Benga and J.M. Tager (eds.), Springer Verlag, Berlin, 1988, pp. 204-219.
34. Gh. Benga, O. Popescu, V.I. Pop, Victoria Borza, Adriana Hodârnu, M. Popescu, Ana Maria Șerbu, Ileana Benga, Studies on water permeability and protein erythrocyte membranes in patients with Duchenne muscular dystrophy, *Muscle & Nerve*, 12, 294-301, 1989.
35. Ileana Benga, Gh. Benga, Priorities in the discovery of the implications of water channels in epilepsy and Duchenne muscular distrophy, The 9th World Multi-Conference on Systemics, Cybernetics and Informatics, Orlando, Fl. (USA), 10, 111-115, 2005.