

9.

Referências Bibliográficas

Adhikary G., Chandra S., Sikdar R., Sen Parimal C. **The amphiphilic drug - induced tryptophan fluorescence change of ion - transporting ATPases.** Biochim. Biophys. Acta **1188**: 220 – 226 (1994).

Amler E., Abbott A., Ball W. J. **Structural dynamics and oligomeric interactions of Na⁺,K⁺-ATPase as monitored using fluorescence energy transfer.** Biophys. J. **61**: 553 – 568 (1992).

Amler E., Abbott A., Malak H., Lakowicz J., Ball W. J. **The carbohydrate moieties of the beta-subunit of Na⁺,K⁺-ATPase: their lateral motions and proximity to the cardiac glycoside site.** Biophys. J. **70**: 182 – 193 (1996).

Andersen J. P., Vilsen B. **Primary ion pumps: chapter 1.** Principles of medical biology, volume 4. Cell chemistry and physiology: part III, pages 1 - 66. JAI Press Inc. (1996).

Béguin P., Wang X, Firsov D., Puoti A., Clayes D., Geering, K. **The subunit is a specific component of the Na⁺, K⁺-ATPase and modulates its transport function.** EMBO J. **16**: 4250 – 4260 (1997).

Bhattacharyya J., Bhattacharyya M., Chakraborti A. S., Chaudhuri U., Poddar R. K. **Structural organizations of hemoglobin and myoglobin influence their binding behaviour with phenothiazines.** Int. J. Biol. Macromol. **23**: 11-18 (1998).

Brotherus J. R., Jost P. C., Griffith O. H., Keana J. F. W., Hokin L. E. **Charge selectivity at the lipid-protein interface of membranes Na, K-ATPase.** Proc. Natl. Acad. Sci. **77**: 272 – 2723 (1980).

Buettner G. R., Hall R. D., Chignell C. F, Motten A. G. **The stepwise biphotonic photoionization of chlorpromazine as seen by laser flash photolysis.** J. Photochem. Photobiol. **49**: 249 – 256 (1989).

Buettner G. R.; Schafer F. Q. **Free radicals, oxidants, e antioxidants.** Teratology. **62**, 234 (2000).

Buettner G. R., Motten A. G., Hall R. D., Chignell C. F. **Free radical production by chlorpromazine sulfoxide, an ESR spin-trapping and flash photolysis study.** J. Photochem. Photobiol. **44**: 5 – 10 (1986).

Cantor R. S. **Lateral pressure profile in membranes: a physical mechanism of general anaesthesia.** J. Biochem. **36**: 2339 – 2344 (1997).

Caetano W., Tabak M. **Interaction of chlorpromazine and trifluoperazine with anionic sodium dodecyl sulfate (SDS) micelles: electronic absorption and fluorescence studies.** J. Coll. Interf. Sci. **225**: 69 – 81 (2000).

Chignell, C. F., Motten, A. G., Buettner, G. R. **Photoinduced free radicals from chlorpromazine and related phenothiazines: relationship to phenothiazine-induced photosensitization.** Environ. Health Perspect. **64**: 103 – 110 (1985).

Cornelius F. **Functional reconstitution of the sodium pump. kinetics of exchange reactions performed by reconstituted (Na-K)-ATPase.** Biochim. Biophys. Acta **1071**: 19 – 66 (1991).

Daveloose D., Leterrier F. **Photochemical interactions between nitroxide free radicals and phenothiazines in solution.** J. Photochem. Photobiol. **28**: 23-31 (1978).

Davies A. K., Navartnam S., Phillips, G. O. **Photochemistry of chlorpromazine [2-chloro-N-(3-dimethylaminopropyl)] phenothiazine in propan-2-ol solution.** J. Chem. Soc. Perkin Trans. I **2**: 25-29 (1976).

Dowhan W., Bogdanov M., Mileykovskaya E. **Functional roles of lipids in membranes.** Chapter I. D. E. Vance and J. E. Vance (Eds) Biochemistry of Lipids, Lipoproteins and Membranes. 5th edition. Elsevier B. V. (2008).

Eckenhoff, R. G. **Do specific or nonspecific interactions with proteins underlie inhalational anesthetic action?** J. Mol. Pharmac. **54**: 610 – 615 (1998).

Elisei F., Latterini L., Gaetano G., Mazzucato U., Viola G., Miolo G., Vedaldi D., Dall'Acqua F. **Excited-state properties and in vitro phototoxicity studies of three phenothiazine derivatives.** J. Photochem. Photobiol. **75**: 11 – 21 (2002).

Esmann M., Watts A., Marsh D. **Spin-label studies of lipid-protein interactions of the (Na⁺,K⁺)-ATPase membranes from rectal glands of *Squalus Acanthias*.** J. Biochem. **24**: 1386 – 1393 (1985).

Fortes P. A. **Anthrolyouabain: a specific fluorescent probe for the cardiac glycoside receptor of the Na,K-ATPase.** J. Biochem. **16**: 531 – 540 (1977).

Fortes P. A., Lee, J. A. **Steady-state levels of phosphorylated intermediates of (Na,K)-ATPase monitored with oligomycin and anthrolyouabain.** J. Biol. Chem. **259**: 11176 – 11179 (1984).

Freifelder D. **Physical biochemistry. Applications to Biochemistry and Molecular Biology.** 2nd edition (1982).

Finkelstein A., Ptitsyn O. **Protein physics: a course of lectures.** Academic Press Inc (2002).

Garcia C., Oyola R., Piñero L., Arce R., Silva J., Sánchez V. **Substitution and solvent effects on the photophysics properties of several series of 10-alkylated phenothiazines derivatives.** J. Phys. Chem. **109**: 3360 – 3371 (2005).

Gratton E., Parasassi T. **Fluorescence lifetime distributions in membrane systems.** J. Fluores. **5**: 51 – 57 (1995).

Guevara E. A. C., Barriviera L., Hassón-Voloch A., Louro S. R. W. **Chlorpromazine Binding to Na⁺, K⁺-ATPase and Photolabeling: Involvement of the ouabain site monitored by fluorescence.** J. Photochem. Photobiol. **83**: 914 – 919 (2007).

Guevara E. A. C. **Efeitos de um antipsicótico e um antidepressivo tricíclico sobre a bomba sódio e potássio, Na⁺,K⁺ - ATPase: estudo através de**

fluorescência. Tese de mestrado em Física. Dep. de Física, Centro Técnico - Científico, Pontifícia Universidade Católica de Rio de Janeiro (2005).

Guynn S. R., Scofield M. A., Petzel D. H. **Identification of mRNA and protein expression of the Na/K-ATPase α_1 -, α_2 - and α_3 -subunit isoforms in Antarctic and New Zealand nototheniid fishes.** J. Exp. Mar. Biol. Ecol. **273**: 15 – 32 (2002).

Hendrich A. B., Wesolowska O., Motohashi N., Molnar J., Michalak K. **New phenothiazine-type multidrug resistance modifiers: anti-MDR activity versus membrane perturbing potency.** Biochem. Biophys. Res. Commun. **304**: 260 – 265 (2003).

Hellen E. H., Pratap P. R. **Nucleotide binding to IAF-labelled Na^+, K^+ -ATPase measured by steady state fluorescence quenching by TNP-ADP.** J. Biophys. Chem. **69**: 107 - 124 (1997).

Hollas J. M. **Modern Spectroscopy.** John Wiley and Sons Ltd. 4th edition (2004).

Hernández A., Companyó M., Morros A., Tort L. **Cambios en la fluidez de la membrana en hepatocitos de dorada *Sparus auratus* L., 1758 asociados al descenso térmico.** Bol. Inst. Esp. Oceanogr. **18** (1-4): 389-392 (2002).

Horisberger J. D, Lemas V., Kraehenbuhl J. P., Rossier B. C. **Structure-function relationship of Na,K-ATPase.** Ann. Rev. Physiol. **53**: 565 – 584 (1991).

Hueck I. S., Hollweg H. G., Schmid-Schonbein G. W., Artmann G. M. **Chlorpromazine modulates the morphological macro and microstructure of endothelial cells.** Am. J. Physiol. Cell Physiol. **278**: 873-878 (2000).

Iwaoka T., Kondo M. **Mechanistic studies on the photooxidation of chlorpromazine in water and ethanol.** Bull. Chem. Soc. Jpn. **47**: 980 – 986 (1974).

Ioffe V. M., Gorbenko G. P., Zakharenko O. K., Yudintsev A. V. **Chlorpromazine-membrane interactions as revealed by pKa and fluorescent probes.** J. Biol. Phys. Chem. **7**: 51 – 57 (2007).

Jahnig F. **Structural order of lipids and proteins in membranes: evaluation of fluorescence anisotropy data.** Proc. Natl. Acad. Sci. USA. **76**: 6361 – 6365 (1979).

Jorgensen P. L. **Mechanism of the $\text{Na}^+ \text{K}^+$ Pump protein structure and conformation of the pure (Na-K)-ATPase.** Biochim. Biophys. Acta **694**: 27 – 68 (1982).

Jorgensen P. L. Skou J. C., Solonomson L. P. **Purification and characterization of (Na^+, K^+)-ATPase. II. Preparation of zonal centrifugation of highly active (Na^+, K^+)-ATPase from the outer medulla of rabbit kidneys.** Biochim. Biophys. Acta **233**: 381 – 394 (1971).

Jorgensen P. L., Håkansson K. O., Karlsh S. J. D. **Structure and mechanism of Na,K-ATPase: functional sites and their interactions.** Ann. Rev. Physiol. **65**: 817 – 849 (2003).

Joshi R., Ghanty T. K., Mukherjee T. **Reactions and structural investigation of chlorpromazine radical cation.** J. Mol. Struct. **888**: 401 - 408 (2008).

Karpinska J., Starczewska B., Puzanowska-Tarasiewicz H. **Analytical properties of 2-and 10-disubstituted phenothiazine derivatives.** *Analytical Sciences* **12**: 161-170 (1996).

Kaiser R. D., London E. **Location of diphenylhexatriene (DPH) and its derivatives with membranes: comparison of different fluorescence quenching analyses of membrane depth.** *Biochemistry* **37**: 8180 - 8190 (1998).

Karlish S. J. D., Yates D. W. **Tryptophan fluorescence of (Na⁺ + K⁺)-ATPase as a tool for study of the enzyme mechanism.** *Biochim. Biophys. Acta* **527**: 115 – 130 (1978).

Kawakami K., Noguchi S., Noda M., Takahashi H., Ohta T., Kawamura M., Nojima H., Nagano K., Hirose T., Inayama S., Hayashida H., Miyata T., Numa S. **Primary structure of the α -subunit of *Torpedo californica* (Na⁺-K⁺) ATPase deduced from cDNA sequence.** *Nature* **316**: 733 – 736 (1985).

Kawakami K., Nagano K. **The transmembrane segment of the human Na,K-ATPase β -subunit acts as the membrane incorporation signal.** *J. Biochem.* **103**: 54 - 60, (1988).

Kawato S., Kinoshita K. Jr., Ikegami A. **Effect of cholesterol on the molecular motion in the hydrocarbon region of lecithin bilayers studied by nanosecond fluorescence techniques.** *Biochemistry* **17**: 5026-5031(1978)

Keenan S. M., DeLisle R. K., Welsh W. J., Paula S., Ball W.J. Jr. **Elucidation of the Na⁺,K⁺-ATPase digitalis binding site.** *J. Mol. Graph. Model.* **23**: 465 - 475 (2005).

Kochevar E. I., Horn J. **Photoproducts of chlorpromazine which cause red blood cell lysis.** *J. Photochem. Photobiol.* **37**: 163 – 168 (1983).

Konopasek I., Kvasnicka P., Herman P., Linnertz H., Obsil T., Vecer J., Svobodova J., Strzalka K., Mazzanti L., Amler E. **The origin of the diphenylhexatriene short lifetime component in membranes and solvents.** *Chem. Phys. Letters* **293**: 429–435 (1998).

Koyama T., Zhu M. Y., Araisio T., Kinjo M., Kitagawa H., Sugimura M. **Dynamic microstructure of plasma and mitochondrial membranes from bullfrog myocardium-A nanosecond time-resolved fluorometric study.** *Japanese J. Physiol.* **40**: 65-78 (1990).

Kühlbrandt W. **Biology, structure and mechanism of P-type ATPases.** *Nat. Rev. Mol. Cell Biol.* **5**: 282 – 295 (2004).

Kyte J. **Purification of the sodium-and potassium-dependent adenosine triphosphatase from canine renal medulla.** *J. Biol. Chem.* **246**: 4157 – 4165 (1981).

Lakowicz J. R. **Principles of fluorescence spectroscopy.** 3rd Edition. Springer Science + Business Media (2006).

Lee J. A., Fortes P. A. **Spatial relationship and conformational changes between the cardiac glycosides site and beta-subunit oligosaccharides in sodium plus potassium activated adenosinetriphosphatase.** *J. Biochem.* **25**: 8133 – 8141 (1986).

- A.G. Lee **Effects of charged drugs on the phase transition temperatures of phospholipid bilayers.** *Biochim. Biophys. Acta* **514** (1978) 95-104.
- Lin C.-E., Liao W.-S., Chen K.-H., Lin W.-Y. **Influence of pH on electrophoretic behavior of phenothiazines and determination of pK_a values by capillary zone electrophoresis.** *Electrophoresis* **24**: 3154–3159 (2003).
- Linnertz H., Urbanova P., Obsil T., Hermani P., Amler E., and Schoner W. **Molecular distance measurements reveal an $(\alpha\beta)_2$ dimeric structure of Na^+ , K^+ -ATPase.** *J. Biol. Chem.* **273**: 28813 - 28821 (1998).
- Louro S. R. W., Anteneodo C., Wajnberg E. **Carboxyl groups at the membrane interface as molecular targets for local anesthetics.** *Biophys. Chem.* **74**: 35 – 43 (1998).
- Logue J., Tiku P., Cossins A. R. **Heat injury and resistance adaptation in fish.** *J. Therm. Biol.* **20** (1/2): 191-197 (1995).
- Lowndes J. M., Hokin-Neaverson M., Ruoho R. J. **Photoaffinity labeling of $(\text{Na}^+, \text{K}^+)\text{-ATPase}$ with (^{125}I) iodoazidocymarin.** *J. Biol. Chem.* **259**: 10533 – 38 (1984).
- Malheiros S.V.P., de Paula E., Meirelles N.C. **Contribution of trifluoperazine/lipid ratio and drug ionization to hemolysis.** *Biochim. Biophys. Acta* **1373** (1998) 332-340.
- Maruoka N., Murata T., Omata N., Takashima Y., Fujibayashi Y., Wada Y. **Effect the vitamin E supplementation on plasma membrane permeabilization and fluidization induced for chlorpromazine in the rat brain.** *J. Psychopharm.* **22**: 119 – 127 (2008).
- Mathews C. K., Van Holde, K. E. J. **Biochemistry.** The Benjamin / Cummings Publishing Company, Inc. (ed.), Menlo Park (California) (1990).
- Mellinger T., Keeler C. **Spectrofluorometric identification of phenothiazine drugs.** *J. Anal. Chem.* **35**: 554 – 558 (1963).
- Miolo G., Levoroto L., Gallochio F., Caffieri S., Bastianon C., Zanoni R., Reddi E. **In vitro phototoxicity of phenothiazines: involvement of stable UVA photolysis products formed in aqueous medium.** *Chem. Res. Toxicol.* **19**: 156 – 163 (2006).
- Motten A. G., Buettner G. R., Chignell C. F. **Spectroscopic studies cutaneous photosensitizing agents –VII. a spin-trapping study of light induced free radicals from chlorpromazine and promazine.** *J. Photochem. Photobiol.* **42**: 9 – 15 (1985).
- Nelson D.L., Cox M.M. **Lehninger Principles of Biochemistry.** 3rd edition, Worth Publishers (2002).
- Parry M. J., Jutila A., Kinnunen P. K. J., Alakoskela J. M. **A versatile method for determining the molar ligand-membrane partition coefficient.** *J. Fluores.* **17**: 97 – 103 (2007).
- Pedersen P. A., Nielsen J. M., Rasmussen J. H., Jorgensen P. L. **Contribution to Ti^+ , K^+ , and Na^+ binding of Asn^{776} , Ser^{775} , Thr^{774} , Thr^{772} , and Tyr^{771} in cytoplasmic part of fifth transmembrane segment in α -subunit of renal Na, K -ATPase.** *J. Biochem.* **37**: 17818-17827 (1998).

Post A., Warren R. J., Zarembo J.E., em **Analytical Profiles of Drug Substances**, vol. 9, editor K. Florey, Academic Press, NY, 1980, pp. 543–581.

Rang H. P., Dale M. M. **Farmacologia**. Editora Guabanara Koogan AS 2ª edição 202 – 205 (1993).

Ragland J. B., Kinross-Wright V. J. **Spectrofluorometric measurement of phenothiazines drugs**. Anal. Chem. **36**: 1356 – 1359 (1964).

Ricardo, C. P., Teixeira, A. N. **Moléculas biológicas - estrutura e propriedades**. Didáctica (Ed.) Lisboa 3ª edition (1983).

Rodrigues T., dos Santos G., Riposati A., Barbosa L. R. S., Mascio P.D., Itri R., Baptista M. S., Nascimento O. R., Nantes I. L. **Photochemically generated stable cation radical of phenothiazine aggregates in mildly acid buffered solutions**. J. Phys. Chem. **110**: 12257 – 12265 (2006).

Rodrigues R. M.: **Estudo da emissão de Ions Estáveis e Metaestáveis (LiF)nLi⁺ induzida por fragmentos de fissão do ²⁵²Cf, 2003**. Tese de mestrado em Física. Dep. de Física, Centro Técnico-Científico, Pontifícia Universidade Católica de Rio de Janeiro.

Robert J. E. **The photodynamics effect of chlorpromazine, promazine, and hematoporphyrin on lens protein**. Invest. Ophthalmol. Vis. Sci **25** (1984).

Saldanha R. J. D., Ananda S., V. B. M., Made G. N. M. **Oxidation of psychotropic drugs by Chloramine – T in acid medium: a kinetic study using spectrophotometry**. J. Molec. Struct. **606** (2002) 147 - 154.

Silva, D. **Estudo da interação da clorpromazina e da hemina com albumina sérica através da espectroscopia de fluorescência**. Teses de Mestrado em Biologia. Universidade do Estado do Rio de Janeiro (2001).

Skoog D. R., Holler J. F., Nieman T. A. **Princípios de análise instrumental**. Bookman, São Paulo, 2002.

Skou J. C. **The identification of the sodium pump**. Bioscience Reports **18** No. 14 (1998).

Somló C. and Hasson-Voloch A. **Effect of Li⁺ and Ba⁺ on the electrocyte membrane-bound (Na⁺+K⁺) ATPase**. Cell Tiss. Res. **19/1**: 17-21 (1987).

Sweadner K. J., Donnet C. **Structural similarities of Na,K-ATPase and SERCA, the Ca²⁺ - ATPase of-the sarcoplasmic reticulum**. J. Biochem. **356**: 685 – 704 (2001).

Sutherland E., Dixon B. S., Leffert H. L., Skally H., Zacarro L., Simon F. R. **Biochemical localization of hepatic surface-membrane Na⁺,K⁺-ATPase activity depends on membrane lipid fluidity**. Proc. Natl. Acad. Sci. USA **85**: 8673 – 8677 (1988).

Tsakovska I. **QSAR and 3D QSAR of phenothiazine type multidrug resistance modulators in P388/ADR cells**. Bioorg. Med. Chem. **11**:2889-2899 (2003).

Therien A. G. Goldshleger R., Karlsh S.J., Blostein R. **Tissue-specific distribution and modulatory role of the gamma subunit of the Na, K-ATPase**. J. Biol. Chem. **272**: 32628 – 32634 (1997).

Urban, B. W. **Current assessment of targets and theories of anaesthesia.** Br. J. Anaesth. **89**: 167–183 (2002).

Valeur B. **Molecular Fluorescence. Principles and Applications.** Wiley - VCH Verlag GmbH (2002).

Van Den Broeke L. T., Ouïja E. H., Bokarski J. Beyersbergen Van Henegouwen G.M.J. ***In vitro* Photodegradation of Chlorpromazine.** J. Photochem. Photobiol. **59**: 140 – 144 (1994).

Van der Heide U. A., Van Ginkel G., Levine Y. K. **DPH is localised in two distinct populations in lipid vesicles.** Chem. Phys. Lett. **253**: 118-122 (1996).

Ward D., Cavieres J. **Photoactivation of fluorescein isothiocyanate modified Na, K-ATPase by 2'(3')-O-(2,4,6-Trinitrophenyl)8-azidoadenosine 5'-Diphosphate.** J. Biol. Chem. **273**: 1477-14284 (1998).

Wesolowska O., Hendrich A. B., Motohashi N., Kawase M., Dobryszycski P., Ozyhar A., Michalak K. **Presence of anionic phospholipids rules the membrane localization of phenothiazine type multidrug resistance modulator.** Biophys. Chem. **109**: 399 – 412 (2004).

Welti R., Mullikin L. J., Yoshimura T., Hlemkamp G. M. **Partition of amphiphilic molecules into phospholipid vesicles and human erythrocyte ghosts: measurements by ultraviolet difference spectroscopy.** J. Biochem. **23**: 6086 – 6091 (1984).

Wolfbeis O.S. **Fluorescence spectroscopy new methods and applications.** Springer –Verlag Berlin Heidelberg (1993).

Yu S. P. **Na⁺, K⁺-ATPase: The new face of an old player in pathogenesis and apoptotic/hybrid cell death.** J. Biochem. Pharm. **66**: 1601 – 1609 (2003).

Yudowski G. A., Shimon M. B., Tal D. M., González-Lebrero R. M., Rossi R. C., Garrahan P. J., Beaugé L. A., Karlsh S. J. D. **Evidence for tryptophan residues in the cation transport path of the Na⁺,K⁺-ATPase.** Biochemistry. **42**: 10212-10222 (2003).