



## 50 Science References Supporting Hydroxychloroquine

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The esteemed professor Paolo Zanotto, from the University of Sao Paulo, has released a list of 50 scientific references supporting the use of hydroxychloroquine for COVID-19.

Professor Paolo Zanotto studied virology at University of Oxford and is a Microbiology Professor at Universidade de São Paulo. He has published extensively, including in prestigious journals such as Nature, Journal of Virology, Virus Research and Genetics.

See also this previous article where he is featured.

## Game Over! Prominent Microbiology Professor Responds to Critiques of Recent Brazilian Hydroxychloroquine / Azithromycin Study



Professor Paolo Zanotto from the University of Sao Paulo responded to critiques made about a recent study in Brazil, showing a substantially reduced need for ... Continue reading



The list was compiled on May 16.

### **50 references to support HCQ – 50 referencias para uso do HCQ.**

“Para o Boulos eu prometi 35 referências, mas para vocês eu apresento 50. Agora os inteligentinhos vão ter que estudar....”

Lista de referências sobre as 4-AQs, suas atividades e seu uso antiviral e na COVID-19, &c.

1 Savarino A, Boelaert JR, Cassone A, Majori G, Cauda R. Effects of chloroquine on viral infections: an old drug against today’s diseases? Lancet Infect Dis 2003; 3: 722–27.

2 Joshi SR, Butala N, Patwardhan MR, Daver NG, Kelkar D. Low cost anti- retroviral options: chloroquine based ARV regimen combined with hydroxyurea and lamivudine: a new economical triple therapy. J Assoc Phys India 2004; 52: 597–98.

3 Lori F, Foli A, Groff A, et al. Optimal suppression of HIV replication by low- dose hydroxyurea through the combination of antiviral and cytostatic ('virostatic') mechanisms. AIDS 2005; 19: 1173–81.

4 Paton NI, Aboulhab J. Hydroxychloroquine, hydroxyurea and didanosine as initial therapy for HIV-infected patients with low viral load: safety, efficacy and resistance profile after 144 weeks. HIV Med 2005; 6: 13–20.

5 Luchters SMF, Veldhuijzen NJ, Nsanzabera D, et al. A phase I/II randomised placebo controlled study to evaluate chloroquine administration to reduce HIV-1 RNA in breast milk in an HIV-1 infected breastfeeding population: the CHARGE Study. XV International Conference on AIDS; Bangkok, Thailand; July 11–16, 2004. Abstract TuPeB4499.

6 Savarino A, Lucia MB, Rastrelli E, et al. Anti-HIV effects of chloroquine: inhibition of viral particle glycosylation and synergism with protease inhibitors. J Acquir Immune Defic Syndr 1996; 35: 223–32.

7 Keyaerts E, Vijgen L, Maes P, Neyts J, Van Ranst M. In vitro inhibition of severe acute respiratory syndrome coronavirus by chloroquine. Biochem Biophys Res Commun 2004; 323: 264–68.

8 Vincent MJ, Bergeron E, Benjannet S, et al. Chloroquine is a potent inhibitor of SARS coronavirus infection and spread. Virol J 2005; 2: 69.

9 Miller DK, Lenard J. Antihistaminics, local anesthetics, and other amines as antiviral agents. Proc Natl Acad Sci USA 1981; 78: 3605–09.

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10 Shibata M, Aoki H, Tsurumi T, et al. Mechanism of uncoating of influenza B virus in MDCK cells: action of chloroquine. J Gen Virol 1983; 64: 1149–56.

11 Donatelli I, Campitelli L, Di Trani L, et al. Characterization of H5N2 influenza viruses from Italian poultry. J Gen Virol 2001; 82: 623–30.

- 12 Jones G, Willett P, Glen RC, Leach AR, Taylor R. Development and validation of a genetic algorithm for flexible docking. *J Mol Biol* 1997; 267: 727–48.
- 13 Kwiek JJ, Haystead TA, Rudolph J. Kinetic mechanism of quinone oxidoreductase 2 and its inhibition by the antimalarial quinolines. *Biochemistry* 2004; 43: 4538–47.
- 14 National Center for Biotechnology Information. MMDB—Entrez’s Structure Database. <http://www.ncbi.nlm.nih.gov/Structure/MMDB/mmdb.shtml> (accessed Dec 14, 2005).
- 15 Olofsson S, Kumlin U, Dimock K, Arnberg N. Avian influenza and sialic acid receptors: more than meets the eye? *Lancet Infect Dis* 2005; 5: 184–88.
- 16 Savarino A, Di Trani L, Donatelli I, Cauda R, Cassone A. New insights into the antiviral effects of chloroquine. *The Lancet Infectious Diseases* Vol. 6 February 2006.
17. Browning D.J. Pharmacology of Chloroquine 2 and Hydroxychloroquine. Chapter 2 in D.J. Browning, *Hydroxychloroquine and Chloroquine Retinopathy*, 35 DOI 10.1007/978-1-4939-0597-3\_2, © Springer Science+Business Media New York 2014.
18. Yao et al., 2020. In Vitro Antiviral Activity and Projection of Optimized Dosing Design of Hydroxychloroquine for the Treatment of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). Downloaded from <https://academic.oup.com/cid/advance-article-abstract/doi/10.1093/cid/ciaa237/5801998> by guest on 20 March 2020.
19. Colson et al. Chloroquine and hydroxychloroquine as available weapons to fight COVID-19. *International Journal of Antimicrobial Agents*. Journal homepage: [www.elsevier.com/locate/ijantimicag](http://www.elsevier.com/locate/ijantimicag) <https://doi.org/10.1016/j.ijantimicag.2020.105932> 0924-8579/© 2020 Published by Elsevier B.V.
20. Wang, M. et al. Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro. *Cell Res*. 30, 269–271 (2020).
21. Gao, J., Tian, Z. & Yang, X. Breakthrough: Chloroquine phosphate has shown apparent efficacy in treatment of COVID-19 associated pneumonia in clinical studies. *Biosci. Trends* 14, 72–73 (2020).

22. Gordon et al. A SARS-CoV-2-Human Protein-Protein Interaction Map Reveals Drug Targets and Potential Drug-Repurposing bioRxiv preprint

doi: <https://doi.org/10.1101/2020.03.22.002386>.

23. Van Thuan Hoang, Valérie Giordanengo, Vera Esteves Vieira, Hervé Tissot Dupont, Philippe Colson , Eric Chabriere, Bernard La Scola, Jean-Marc Rolain, Didier Raoult , Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial, International Journal of Antimicrobial Agents (2020),

doi: <https://doi.org/10.1016/j.ijantimicag.2020.105949>.

**>> "I am going to want Zinc plus Hydroxychloroquine plus Azithromycin" —  
Chris Martenson, PhD**

24. Chen et al., Efficacy of hydroxychloroquine in patients with COVID-19: results of a randomized clinical trial. medRxiv preprint doi: <https://doi.org/10.1101/2020.03.22.20040758>.

25. Elisabeth Mahase. Covid-19: what treatments are being investigated? BMJ 2020;368:m1252 doi: 10.1136/bmj.m1252 (Published 26 March 2020).

26. Chloroquine and hydroxychloroquine: Current evidence for their effectiveness in treating COVID-19

# Chloroquine and hydroxychloroquine: Current evidence of effectiveness in COVID-19



[evidence-cov.id/chloroquine](https://evidence-cov.id/chloroquine)

Frie K, Gbinigie K.

## Chloroquine and hydroxychloroquine: Current evidence for their effectiveness in treating COVID-19

Kerstin Frie and Kome Gbinigie Oxford COVID-19 Evidence Service Team Centre for Evidence-Based Medicine, Nuffield Department of Primary Care Health ... Continue reading



27. Sahraei, Z., Shabani, M., Shokouhi, S. and Saffaei, A., 2020. Aminoquinolines Against Coronavirus Disease 2019 (COVID-19): Chloroquine or Hydroxychloroquine. *International Journal of Antimicrobial Agents*, p.105945.
28. Chauhan, A. and Tikoo, A., 2015. The enigma of the clandestine association between chloroquine and HIV-1 infection. *HIV medicine*, 16(10), pp.585-590.
29. Keyaerts, E., Li, S., Vijgen, L., Rysman, E., Verbeeck, J., Van Ranst, M. and Maes, P., 2009. Antiviral activity of chloroquine against human coronavirus OC43 infection in newborn mice. *Antimicrobial agents and chemotherapy*, 53(8), pp.3416-3421.
30. Vincent, M.J., Bergeron, E., Benjannet, S., Erickson, B.R., Rollin, P.E., Ksiazek, T.G., Seidah, N.G. and Nichol, S.T., 2005. Chloroquine is a potent inhibitor of SARS coronavirus infection and spread. *Virology journal*, 2(1), p.69.

- 31 Liu, J., Cao, R., Xu, M., Wang, X., Zhang, H., Hu, H., Li, Y., Hu, Z., Zhong, W. and Wang, M., 2020. Hydroxychloroquine, a less toxic derivative of chloroquine, is effective in inhibiting SARS-CoV-2 infection in vitro. *Cell Discovery*, 6(1), pp.1-4.
32. Savarino, A., Boelaert, J.R., Cassone, A., Majori, G. and Cauda, R., 2003. Effects of chloroquine on viral infections: an old drug against today's diseases. *The Lancet infectious diseases*, 3(11), pp.722-727.
33. Yao, X., Ye, F., Zhang, M., Cui, C., Huang, B., Niu, P., Liu, X., Zhao, L., Dong, E., Song, C. and Zhan, S., 2020. In vitro antiviral activity and projection of optimized dosing design of hydroxychloroquine for the treatment of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). *Clinical Infectious Disease*.
34. Gautret, P., Lagier, J.C., Parola, P., Meddeb, L., Mailhe, M., Doudier, B., Courjon, J., Giordanengo, V., Vieira, V.E., Dupont, H.T. and Honoré, S., 2020. Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial. *International Journal of Antimicrobial Agents*, p.105949.
35. Christian A. Devaux, Jean-Marc Rolain, Philippe Colson, Didier Raoult. New insights on the antiviral effects of chloroquine against coronavirus: what to expect for COVID-19?, *International Journal of Antimicrobial Agents* (2020), <https://doi.org/10.1016/j.ijantimicag.2020.105938>.
36. Singh AK, Singh A, Shaikh A, Singh R, Misra A, Chloroquine and hydroxychloroquine in the treatment of COVID-19 with or without diabetes: A systematic search and a narrative review with a special reference to India and other developing countries, *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* (2020), doi: <https://doi.org/10.1016/j.dsx.2020.03.011>.

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37. Kaapor KM & Kaapor A. Role of Chloroquine and Hydroxychloroquine in the Treatment of COVID-19 Infection- A Systematic Literature Review. medRxiv preprint doi: <https://doi.org/10.1101/2020.03.24.20042366>.

38. Gao J , Tian Z , and Yang X. Breakthrough: Chloroquine phosphate has shown apparent efficacy in treatment of COVID-19 associated pneumonia in clinical studies. Biosci Trends 2020. <https://doi.org/10.5582/bst.2020.01047>.
39. Liu W & Li H. COVID-19: Attacks the 1-Beta Chain of Hemoglobin and Captures the Porphyrin to Inhibit Human Heme Metabolism. <https://doi.org/10.26434/chemrxiv.11938173>.
40. Cortegiani et al., A systematic review on the efficacy and safety of chloroquine for the treatment of COVID-19, Journal of Critical Care, <https://doi.org/10.1016/j.jcrc.2020.03.005>.
41. James M. Sanders, PhD, PharmD; Marguerite L. Monogue, PharmD; Tomasz Z. Jodlowski, PharmD; James B. Cutrell, MD. Pharmacologic Treatments for Coronavirus Disease 2019 (COVID-19) A Review JAMA. doi:10.1001/jama.2020.6019 Published online April 13, 2020.
42. Riou B, Barriot P, Rimailho, A., Baud FJ. Treatment of Severe Cholroquine Poisoning. The New England Journal of Medicine, Vol. 318, Number 1, January 7, 1988. pp. 1-6.
43. Huang et al. Preliminary evidence from a multicenter prospective observational study of the safety and efficacy of chloroquine for the treatment of COVID-19. medRxiv preprint doi: <https://doi.org/10.1101/2020.04.26.20081059>.
44. Membrillo et al. Early hydroxychloroquine is associated with an increase of survival in COVID-19 patients: an observational study. <https://www.preprints.org/manuscript/202005.0057/v2>.
45. Davido et al. on behalf of the COVID-19 RPC Team Hydroxychloroquine plus azithromycin: a potential interest in reducing in- hospital morbidity due to COVID-19 pneumonia (HI-ZY-COVID)? medRxiv preprint doi: <https://doi.org/10.1101/2020.05.05.20088757>.
46. Czuppon et al. Predicted success of prophylactic antiviral therapy to block or delay SARS-CoV-2 infection depends on the targeted mechanism. medRxiv preprint doi: <https://doi.org/10.1101/2020.05.07.20092965>.
47. Million, et al., Early treatment of COVID-19 patients with hydroxychloroquine and azithromycin: A retrospective analysis of 1061 cases in Marseille, France. Travel Medicine and Infectious Disease, <https://doi.org/10.1016/j.tmaid.2020.101738>.



48. Carlucci et al. Hydroxychloroquine and azithromycin plus zinc vs hydroxychloroquine and azithromycin alone: outcomes in hospitalized COVID-19 patients. medRxiv preprint  
doi: <https://doi.org/10.1101/2020.05.02.20080036>.

49. Tang et al. Hydroxychloroquine in patients mainly with mild to moderate COVID–19: an open–label, randomized, controlled trial. medRxiv preprint  
doi: <https://doi.org/10.1101/2020.04.10.20060558>.

50. Yu et al. Hydroxychloroquine application is associated with a decreased mortality in critically ill patients with COVID-19. medRxiv preprint  
doi: <https://doi.org/10.1101/2020.04.27.20073379>.”

Compilação por Paolo Zanotto, D. Phil. Em 16 de Maio de 2020.

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