ONLINE RESEARCH 27.04.2020

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Methods

1. Pubmed search
   1- covid-19 AND model (442 items)
   2- covid-19 AND theory (21 items)
   3- covid-19 AND hypothesis (30 items)
   4- covid-19 AND model AND immunological (6 results)
   5- covid-19 AND model AND immunology (30 results)
   6- covid-19 AND theory AND immunological (0 results)
   7- covid-19 AND theory AND immunology (0 results)
   8- covid-19 AND hypothesis AND immunological (1 result)
   9- covid-19 AND hypothesis AND immunology (3 results)

History and Search Details

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Search	Actions	Details	Query	Results	Time
#11	•••	›	Search: **(((covid-19) AND (hypothesis)) AND (immunological))**	1	14:58:10
#10	•••	›	Search: **(((covid-19) AND (hypothesis)) AND (immunology))**	3	14:57:29
#9	•••	›	Search: **(((covid-19) AND (theory)) AND (immunological))**	0	14:56:29
#8	•••	›	Search: **(((covid-19) AND (theory)) AND (immunology))**	0	14:56:09
#7	•••	›	Search: **(((covid-19) AND (model)) AND (immunological))**	6	14:52:45
#6	•••	›	Search: **(((covid-19) AND (model)) AND (immunology))**	30	14:52:04
#5	•••	›	Search: **(((covid-19) AND (model)) AND (immunology)) OR (immunological)** Filters: **from 2020 - 2020**	5,379	14:51:41
#4	•••	›	Search: **(((covid-19) AND (model)) AND (immunology)) OR (immunological)**	484,661	14:51:22
#3	•••	›	Search: **(covid-19) AND (hypothesis)**	30	14:47:12
#2	•••	›	Search: **(covid-19) AND (theory)**	21	14:46:44
#1	•••	›	Search: **(covid-19) AND (model)**	442	14:46:14

Pubmed Search
"((covid-19) AND (model)) AND (immunology)"

30 results:

1: Baig AM, Khaleeq A, Ali U, Syeda H. Evidence of the COVID-19 Virus Targeting the CNS: Tissue Distribution, Host-Virus Interaction, and Proposed Neurotropic Mechanisms. ACS Chem Neurosci. 2020 Apr 1;11(7):995-998. doi:10.1021/acschemneuro.0c00122.
2: Cheng ZJ, Shan J. 2019 Novel coronavirus: where we are and what we know. Infection. 2020 Apr;48(2):155-163. doi: 10.1007/s15010-020-01401-y.
3: Jiang S. Don't rush to deploy COVID-19 vaccines and drugs without sufficient safety guarantees. Nature. 2020 Mar;579(7799):321. doi:10.1038/d41586-020-00751-9.
4: Walls AC, Park YJ, Tortorici MA, Wall A, McGuire AT, Veesler D. Structure, Function, and Antigenicity of the SARS-CoV-2 Spike Glycoprotein. Cell. 2020 Apr 16;181(2):281-292.e6. doi:10.1016/j.cell.2020.02.058.
5: Nie J, Li Q, Wu J, Zhao C, Hao H, Liu H, et al. Establishment and validation of a pseudovirus neutralization assay for SARS-CoV-2. Emerg Microbes Infect. 2020 Dec;9(1):680-686. doi:10.1080/22221751.2020.1743767.
6: Lu R, Zhao X, Li J, Niu P, Yang B, Wu H, et al. Genomic characterisation and epidemiology of 2019 novel coronavirus: implications for virus origins and receptor binding. Lancet. 2020 Feb 22;395(10224):565-574. doi: 10.1016/S0140-6736(20)30251-8.
7: Robson B. Computers and viral diseases. Preliminary bioinformatics studies on the design of a synthetic vaccine and a preventative peptidomimetic antagonist against the SARS-CoV-2 (2019-nCoV, COVID-19) coronavirus. Comput Biol Med. 2020 Apr;119:103670. doi:10.1016/j.compbiomed.2020.103670.
8: Wrapp D, Wang N, Corbett KS, Goldsmith JA, Hsieh CL, Abiona O, et al. Cryo-EM structure of the 2019-nCoV spike in the prefusion conformation. Science. 2020 Mar 13;367(6483):1260-1263. doi:10.1126/science.abb2507.
9: Amanat F, Krammer F. SARS-CoV-2 Vaccines: Status Report. Immunity. 2020 Apr 14;52(4):583-589. doi: 10.1016/j.immuni.2020.03.007.
10: Li X, Wang W, Zhao X, Zai J, Zhao Q, Li Y, Chaillon A. Transmission dynamics and evolutionary history of 2019-nCoV. J Med Virol. 2020 May;92(5):501-511. doi:10.1002/jmv.25701. 11: Ling Y, Xu SB, Lin YX, Tian D, Zhu ZQ, Dai FH, Wu F, Song ZG, Huang W, Chen
J, Hu BJ, Wang S, Mao EQ, Zhu L, Zhang WH, Lu HZ. Persistence and clearance of viral RNA in 2019 novel coronavirus disease rehabilitation patients. Chin Med J (Engl). 2020 Feb 28:10.1097/CM9.0000000000000774. doi:10.1097/CM9.0000000000000774.
12: Bai Z, Gong Y, Tian X, Cao Y, Liu W, Li J. The Rapid Assessment and Early Warning Models for COVID-19. Virol Sin. 2020 Apr 1. doi:10.1007/s12250-020-00219-0.
13: Xu X, Chen P, Wang J, Feng J, Zhou H, Li X, Zhong W, Hao P. Evolution of thenovel coronavirus from the ongoing Wuhan outbreak and modeling of its spike protein for risk of human transmission. Sci China Life Sci. 2020 Mar;63(3):457-460. doi:10.1007/s11427-020-1637-5.
14: Wu A, Peng Y, Huang B, Ding X, Wang X, Niu P, et al. Genome Composition and Divergence of the Novel Coronavirus (2019-nCoV) Originating in China. Cell Host Microbe. 2020 Mar 11;27(3):325-328. doi:10.1016/j.chom.2020.02.001.
15: Kim YI, Kim SG, Kim SM, Kim EH, Park SJ, Yu KM, Chang JH, Kim EJ, Lee S, Casel MAB, Um J, Song MS, Jeong HW, Lai VD, Kim Y, Chin BS, Park JS, Chung KH, Foo SS, Poo H, Mo IP, Lee OJ, Webby RJ, Jung JU, Choi YK. Infection and Rapid Transmission of SARS-CoV-2 in Ferrets. Cell Host Microbe. 2020 Apr 5:S1931-3128(20)30187-6. doi: 10.1016/j.chom.2020.03.023.

16: Boettler T, Newsome PN, Mondelli MU, Maticic M, Cordero E, Cornberg M, et al. Care of patients with liver disease during the COVID-19 pandemic: EASL-ESCMID position paper. JHEP Rep. 2020 Jun;2(3):100113. doi:10.1016/j.jhepr.2020.100113.
17: Kissler SM, Tedijanto C, Goldstein E, Grad YH, Lipsitch M. Projecting the transmission dynamics of SARS-CoV-2 through the postpandemic period. Science. 2020 Apr 14:eabb5793. doi:10.1126/science.abb5793.
18: Hyun-Jung Lee C, Koohy H. In silico identification of vaccine targets for 2019-nCoV. F1000Res. 2020 Feb 25;9:145. doi:10.12688/f1000research.22507.1.
19: Perricone C, Triggianese P, Bartoloni E, Cafaro G, Bonifacio AF, Bursi R, Perricone R, Gerli R. The anti-viral facet of anti-rheumatic drugs: Lessons from COVID-19. J Autoimmun. 2020 Apr 17:102468. doi:10.1016/j.jaut.2020.102468.
20: Wang H, Wang Z, Dong Y, Chang R, Xu C, Yu X, et al. Phase-adjusted estimation of the number of Coronavirus Disease 2019 cases in Wuhan, China. Cell Discov. 2020 Feb 24;6:10. doi: 10.1038/s41421-020-0148-0.
21: Qiang XL, Xu P, Fang G, Liu WB, Kou Z. Using the spike protein feature to predict infection risk and monitor the evolutionary dynamic of coronavirus. Infect Dis Poverty. 2020 Mar 25;9(1):33. doi: 10.1186/s40249-020-00649-8.
22: Li R, Qiao S, Zhang G. Analysis of angiotensin-converting enzyme 2 (ACE2) from different species sheds some light on cross-species receptor usage of a novel coronavirus 2019-nCoV. J Infect. 2020 Apr;80(4):469-496. doi:10.1016/j.jinf.2020.02.013.
23: Ekins S, Mottin M, Ramos PRPS, Sousa BKP, Neves BJ, Foil DH, et al. Déjà vu: Stimulating open drug discovery for SARS-CoV-2. Drug Discov Today. 2020 Apr 19:S1359-6446(20)30145-8. doi:10.1016/j.drudis.2020.03.019.
24: Li K, Li Z, Wohlford-Lenane C, Meyerholz DK, Channappanavar R, An D, Perlman S, McCray PB Jr, He B. Single-Dose, Intranasal Immunization with Recombinant Parainfluenza Virus 5 Expressing Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike Protein Protects Mice from Fatal MERS-CoV Infection. mBio. 2020 Apr 7;11(2):e00554-20. doi: 10.1128/mBio.00554-20.
25: Ren Y, Yao MC, Huo XQ, Gu Y, Zhu WX, Qiao YJ, Zhang YL. [Study on treatment of "cytokine storm" by anti-2019-nCoV prescriptions based on arachidonic acid metabolic pathway]. Zhongguo Zhong Yao Za Zhi. 2020 Mar;45(6):1225-1231. Chinese. doi: 10.19540/j.cnki.cjcmm.20200224.405.
26: Jaimes JA, André NM, Chappie JS, Millet JK, Whittaker GR. Phylogenetic Analysis and Structural Modeling of SARS-CoV-2 Spike Protein Reveals an Evolutionary Distinct and Proteolytically Sensitive Activation Loop. J Mol Biol. 2020 Apr 19:S0022-2836(20)30287-4. doi: 10.1016/j.jmb.2020.04.009.
27: Wong G, Bi YH, Wang QH, Chen XW, Zhang ZG, Yao YG. Zoonotic origins of human coronavirus 2019 (HCoV-19 / SARS-CoV-2): why is this work important? Zool Res. 2020 Apr 21:1-7. doi: 10.24272/j.issn.2095-8137.2020.031.
28: Pfeifer M, Ewig S, Voshaar T, Randerath W, Bauer T, Geiseler J, et al. Positionspapier zur praktischen Umsetzung der apparativen Differenzialtherapie der akuten respiratorischen Insuffizienz bei COVID-19 [Position Paper for the State of the Art Application of Respiratory Support in Patients with COVID-19 – German Respiratory Society]. Pneumologie. 2020 Apr 22. German. doi:10.1055/a-1157-9976.
29: Daw MA, El-Bouzedi AH. Modelling the epidemic spread of COVID-19 virus infection in Northern African countries. Travel Med Infect Dis. 2020 Apr 15:101671. doi: 10.1016/j.tmaid.2020.101671.
30: Qiu T, Mao T, Wang Y, Zhou M, Qiu J, Wang J, Xu J, Cao Z. Identification of potential cross-protective epitope between a new type of coronavirus (2019-nCoV) and severe acute respiratory syndrome virus. J Genet Genomics. 2020 Feb 20;47(2):115-117. doi: 10.1016/j.jgg.2020.01.003.

Pubmed Search
"((covid-19) AND (model)) AND (immunological)"

6 results:

1: Cheng ZJ, Shan J. 2019 Novel coronavirus: where we are and what we know. Infection. 2020 Apr;48(2):155-163. doi: 10.1007/s15010-020-01401-y.
2: Henry BM, de Oliveira MHS, Benoit S, Plebani M, Lippi G. Hematologic, biochemical and immune biomarker abnormalities associated with severe illness and mortality in coronavirus disease 2019 (COVID-19): a meta-analysis. Clin Chem Lab Med. 2020 Apr 10:/j/cclm.ahead-of-print/cclm-2020-0369/cclm-2020-0369.xml. doi: 10.1515/cclm-2020-0369.
3: Wrapp D, Wang N, Corbett KS, Goldsmith JA, Hsieh CL, Abiona O, Graham BS, McLellan JS. Cryo-EM structure of the 2019-nCoV spike in the prefusion conformation. Science. 2020 Mar 13;367(6483):1260-1263. doi:10.1126/science.abb2507.
4: Zhang J, Zeng H, Gu J, Li H, Zheng L, Zou Q. Progress and Prospects on Vaccine Development against SARS-CoV-2. Vaccines (Basel). 2020 Mar 29;8(2):E153. doi: 10.3390/vaccines8020153.
5: Shi Y, Wang N, Zou QM. [Progress and challenge of vaccine development against 2019 novel coronavirus (2019-nCoV)]. Zhonghua Yu Fang Yi Xue Za Zhi. 2020 Apr 1;54(0):E029. Chinese. doi: 10.3760/cma.j.cn112150-20200317-00366.
6: de Leon J, Ruan CJ, Schoretsanitis G, De Las Cuevas C. A Rational Use of Clozapine Based on Adverse Drug Reactions, Pharmacokinetics, and Clinical Pharmacopsychology. Psychother Psychosom. 2020 Apr 14:1-15. doi:10.1159/000507638.

Pubmed Search

"((covid-19) AND (hypothesis)) AND (immunology)"

3 results:

1: Misra DP, Agarwal V, Gasparyan AY, Zimba O. Rheumatologists' perspective on coronavirus disease 19 (COVID-19) and potential therapeutic targets. Clin Rheumatol. 2020 Apr 10. doi:10.1007/s10067-020-05073-9.
2: Lin L, Lu L, Cao W, Li T. Hypothesis for potential pathogenesis of SARS-CoV-2 infection-a review of immune changes in patients with viral pneumonia. Emerg Microbes Infect. 2020 Dec;9(1):727-732. doi:10.1080/22221751.2020.1746199.
3: Huang Z, Zhao S, Xu L, Chen J, Lin W, Zeng H, Chen Z, Du L, Shi Y, Zhang N, Song B. Imaging features and mechanisms of novel coronavirus pneumonia (COVID-19): Study Protocol Clinical Trial (SPIRIT Compliant). Medicine (Baltimore). 2020 Apr;99(16):e19900. doi: 10.1097/MD.0000000000019900.

Pubmed Search
"((covid-19) AND (hypothesis)) AND (immunological)"

1 results:

1: Lin L, Lu L, Cao W, Li T. Hypothesis for potential pathogenesis of SARS-CoV-2 infection-a review of immune changes in patients with viral pneumonia. Emerg Microbes Infect. 2020;9(1):727–732. doi:10.1080/22221751.2020.1746199.

2. Images

The search for an immunological model on COVID-19 obtained 0 results. There are only mathematical models for diagnosis and prediction. Several articles focus on hypothetical pathogenesis and the role of Angiotensin converting enzyme.

Li X et al. Molecular immune pathogenesis and diagnosis of COVID-19. Journal of Pharmaceutical Analysis 2020. https://doi.org/10.1016/j.jpha.2020.03.001