

## **Appendix 2: Search strategies**

### **L·OVE platform strategies**

Search strategies used in the L·OVE platform for the following question:

Lopinavir for Coronavirus infection

The components below are combined by the system with the boolean operator AND

#### **Population component: Coronavirus**

This is the population component of the search strategy used by L·OVE platform to automatically retrieve potentially eligible articles from Epistemonikos Database (see [special COVID-19 methods](#))

Date: May 17, 2020 (this strategy is continuously improved any time a relevant article is missed)

coronavir\* OR coronavirus\* OR "corona virus" OR "virus corona" OR "corono virus" OR "virus corono" OR hcov\* OR "covid-19" OR covid19\* OR "covid 19" OR "2019-nCoV" OR cv19\* OR "cv-19" OR "cv 19" OR "n-cov" OR ncov\* OR "sars-cov-2" OR "sars-cov2" OR "SARS-Coronavirus-2" OR "SARS-Coronavirus2" OR (wuhan\* AND (virus OR viruses OR viral)) OR (covid\* AND (virus OR viruses OR viral)) OR "sars-cov" OR "sars cov" OR "sars-coronavirus" OR "severe acute respiratory syndrome" OR "mers-cov" OR "mers cov" OR "middle east respiratory syndrome" OR "middle-east respiratory syndrome" OR "covid-19-related" OR "SARS-CoV-2-related" OR "SARS-CoV2-related" OR "2019-nCoV-related" OR "cv-19-related" OR "n-cov-related"

#### **Intervention component: Lopinavir/ritonavir**

This is the intervention component of the strategy used by L·OVE platform to automatically retrieve potentially eligible articles from Epistemonikos Database

The terms below are combined by the system with the boolean operator OR

Date: May 17, 2020 (this strategy is continuously improved any time a relevant article is missed)

Relevant terms in L-OVE taxonomy	Search strategy
Lopinavir	(lopinav* OR LPV* OR "ABT-378" OR "ABT 378" OR ABT378* OR kaletra*)

**Single-block search strategy in L-OVE platform for the question: mesenchymal stromal cells for COVID-19 (adapted for simplicity)**

Date: May 17, 2020

((coronavir\* OR coronavirus\* OR "corona virus" OR "virus corona" OR "corono virus" OR "virus corono" OR hcov\* OR "covid-19" OR covid19\* OR "covid 19" OR "2019-nCoV" OR cv19\* OR "cv-19" OR "cv 19" OR "n-cov" OR ncov\* OR "sars-cov-2" OR "sars-cov2" OR "SARS-Coronavirus-2" OR "SARS-Coronavirus2" OR (wuhan\* AND (virus OR viruses OR viral)) OR (covid\* AND (virus OR viruses OR viral)) OR "sars-cov" OR "sars cov" OR "sars-coronavirus" OR "severe acute respiratory syndrome" OR "mers-cov" OR "mers cov" OR "middle east respiratory syndrome" OR "middle-east respiratory syndrome" OR "covid-19-related" OR "SARS-CoV-2-related" OR "SARS-CoV2-related" OR "2019-nCoV-related" OR "cv-19-related" OR "n-cov-related")) AND (lopinav\* OR LPV\* OR "ABT-378" OR "ABT 378" OR ABT378\* OR kaletra\*)

**Additional searches in electronic databases**

**Search strategy for Pubmed/MEDLINE**

Search date: May 17, 2020

- #1 coronavir\*
- #2 coronavirus\*
- #3 "corona virus"
- #4 "virus corona"
- #5 "corono virus"
- #6 "virus corono"
- #7 hcov\*
- #8 "covid-19"
- #9 covid19\*
- #10 "covid 19"

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doi: 10.5867/medwave.2020.06.7966

- #11 "2019-nCoV"
- #12 cv19\*
- #13 "cv-19"
- #14 "cv 19"
- #15 "n-cov"
- #16 ncov\*
- #17 "sars-cov-2"
- #18 wuhan\* AND (virus OR viruses OR viral)
- #19 covid\* AND (virus OR viruses OR viral)
- #20 "sars-cov"
- #21 "sars cov"
- #22 "sars-coronavirus"
- #23 "severe acute respiratory syndrome"
- #24 "mers-cov"
- #25 "mers cov"
- #26 "middle east respiratory syndrome"
- #27 "middle-east respiratory syndrome"
- #28 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR  
#13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24  
OR #25 OR #26 OR #27
- #29 lopinav\*
- #30 LPV\*
- #31 "ABT-378"
- #32 "ABT 378"
- #33 ABT378\*
- #34 kaletra\*
- #35 #29 OR #30 OR #31 OR #32 OR #33 OR #34
- #36 #28 AND #35

**Search strategy for EMBASE (Elsevier)**

Search date: May 2, 2020

- #1. coronavirus\*
- #2. coronavir\*
- #3. 'corona virus'
- #4. 'virus corona'
- #5. 'corono virus'
- #6. 'virus corono'
- #7. hcov\*
- #8. 'covid-19'
- #9. covid19\*
- #10. 'covid 19'
- #11. '2019-ncov'
- #12. cv19\*
- #13. 'cv-19'
- #14. 'cv 19'
- #15. 'n-cov'
- #16. ncov\*
- #17. 'sars-cov-2'
- #18. wuhan\* AND (virus OR viruses OR viral)
- #19. covid\* AND (virus OR viruses OR viral)
- #20. 'sars-cov'
- #21. 'sars cov'
- #22. 'sars-coronavirus'
- #23. 'severe acute respiratory syndrome'
- #24. 'mers-cov'
- #25. 'mers cov'
- #26. 'middle east respiratory syndrome'
- #27. 'middle-east respiratory syndrome'
- #28. #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR  
#13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24  
OR #25 OR #26 OR #27

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#29. lopinav\*

#30.LPV\*

#31."ABT-378"

#32."ABT 378"

#33.ABT378\*

#34.kaletra\*

#35.#29 OR #30 OR #31 OR #32 OR #33 OR #34

#36.#28 AND #35

### Search strategy for CENTRAL (The Cochrane Library Issue 1, 2019)

Search date: May 17, 2020

#1 coronavirus\*:ti,ab,kw

#2 coronavirus\*:ti,ab,kw

#3 "corona virus":ti,ab,kw

#4 "virus corona":ti,ab,kw

#5 "corono virus":ti,ab,kw

#6 "virus corono":ti,ab,kw

#7 hcov\*:ti,ab,kw

#8 "covid-19":ti,ab,kw

#9 covid19\*:ti,ab,kw

#10 "covid 19":ti,ab,kw

#11 "2019-nCoV":ti,ab,kw

#12 cv19\* :ti,ab,kw

#13 "cv-19":ti,ab,kw

#14 "cv 19":ti,ab,kw

#15 "n-cov":ti,ab,kw

#16 ncov\*:ti,ab,kw

#17 "sars-cov-2"

#18 (wuhan\* AND (virus OR viruses OR viral):ti,ab,kw

#19 covid\* AND (virus OR viruses OR viral):ti,ab,kw

#20 "sars-cov":ti,ab,kw

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- #21 "sars cov" :ti,ab,kw
- #22 "sars-coronavirus":ti,ab,kw
- #23 "severe acute respiratory syndrome":ti,ab,kw
- #24 "mers-cov":ti,ab,kw
- #25 "mers cov":ti,ab,kw
- #26 "middle east respiratory syndrome":ti,ab,kw
- #27 "middle-east respiratory syndrome":ti,ab,kw
- #28 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27
- #29 lopinav\*
- #30 LPV\*
- #31 "ABT-378"
- #32 "ABT 378"
- #33 ABT378\*
- #34 kaletra\*
- #35 #29 OR #30 OR #31 OR #32 OR #33 OR #34
- #36 #28 AND #35

### Databases and registries automatically screened by Epistemonikos Database for COVID-19 ('COVID-19 repository')

Updated daily or more than daily

#### PubMed

<https://www.ncbi.nlm.nih.gov/pubmed/>

coronavir\* OR coronavirus\* OR "corona virus" OR "virus corona" OR "corono virus" OR "virus corono" OR hcov\* OR "covid-19" OR covid19\* OR "covid 19" OR 2019-nCoV OR cv19\* OR "cv-19" OR "cv 19" OR "n-cov" OR ncov\* OR "sars-cov-2" OR (wuhan\* AND (virus OR viruses OR viral OR coronav\*)) OR (covid\* AND (virus OR viruses OR viral)) OR "sars-cov" OR "sars cov" OR "sars-coronavirus" OR "severe acute respiratory syndrome" OR "mers-cov" OR "mers cov" OR "middle east respiratory syndrome" OR "middle-east respiratory syndrome"

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### COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

<https://connect.medrxiv.org/relate/content/181>

\* All the articles in this list are uploaded

### Clinicaltrials.gov

<https://clinicaltrials.gov/>

Search date: May 17, 2020

"SARS-COV-2" OR "Sars-CoV2" OR nCoV OR COVID OR Coronavirus OR Corona OR "covid-19" OR covid19 OR "covid 19" OR "2019-nCoV" OR cv19 OR "cv-19" OR "cv 19" OR "n-cov" OR coronavirus

### ISRCTN registry

<https://www.isrctn.com/>

Search date: May 17, 2020

lopinav\* OR LPV\* OR "ABT-378" OR "ABT 378" OR ABT378\* OR kaletra\*

### Chinese Clinical Trial Registry

<http://www.chictr.org.cn/>

Search date: May 17, 2020

*Separate searches for the following terms:*

coronavirus; coronovirus; corona virus; virus corona; corono virus; virus corono; hcov; covid-19; covid19; covid 19; 2019-nCoV; cv19; cv-19; cv 19; n-cov; ncov; sars-cov-2; sars-cov2; SARS-Coronavirus-2; SARS-Coronavirus2

### Iranian Registry of Clinical Trials

<https://www.irct.ir/>

Search date: May 17, 2020

((coronavir\* OR coronovirus\* OR "corona virus" OR "virus corona" OR "corono virus" OR "virus corono" OR hcov\* OR "covid-19" OR covid19\* OR "covid 19" OR "2019-nCoV" OR cv19\* OR "cv-19" OR "cv 19" OR "n-cov" OR ncov\* OR "sars-cov-2" OR "sars-cov2" OR "SARS-Coronavirus-2" OR "SARS-Coronavirus2" OR (wuhan\* AND (virus OR viruses OR viral)) OR (covid\* AND (virus OR viruses OR viral)) OR "sars-cov" OR "sars cov" OR "sars-coronavirus"

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OR "severe acute respiratory syndrome" OR "mers-cov" OR "mers cov" OR "middle east respiratory syndrome" OR "middle-east respiratory syndrome" OR "covid-19-related" OR "SARS-CoV-2-related" OR "SARS-CoV2-related" OR "2019-nCoV-related" OR "cv-19-related" OR "n-cov-related")) AND (lopinav\* OR LPV\* OR "ABT-378" OR "ABT 378" OR ABT378\* OR kaletra\*)

### Other databases and websites specialised in COVID-19 manually searched for this review

#### Google Scholar

<https://scholar.google.com/>

Search date: May 17, 2020

allintitle:"COVID-19"|COVID19|2019nCoV|"Corona Virus"|Coronavirus|"CoV 2"|CoV2|COVID|nCoV|SARS2|SARSCoV|"SARS-CoV"

#### EU Clinical Trials Register: Clinical trials for covid-19

Search date: May 17, 2020

<https://www.clinicaltrialsregister.eu/ctr-search/search?query=covid-19>

\* All the references in this list were screened

#### NIPH Clinical Trials Search (Japan)

Search date: May 17, 2020

<https://rctportal.niph.go.jp/en/>

*Separate searches for the following terms:*

coronavirus; coronovirus; corona virus; virus corona; corono virus; virus corono; hcov; covid-19; covid19; covid 19; 2019-nCoV; cv19; cv-19; cv 19; n-cov; ncov; sars-cov-2; sars-cov2; SARS-Coronavirus-2; SARS-Coronavirus2

#### Clinical Research Information System (Korea)

Search date: May 17, 2020

<https://cris.nih.go.kr/cris/en/>

*Separate searches for the following terms:*



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coronavirus; coronavirus; corona virus; virus corona; corono virus; virus corono; hcov; covid-19; covid19; covid 19; 2019-nCoV; cv19; cv-19; cv 19; n-cov; ncov; sars-cov-2; sars-cov2; SARS-Coronavirus-2; SARS-Coronavirus2

### ICTRP Search Portal

Search date: May 17, 2020

<http://apps.who.int/trialsearch>

lopinav\* OR LPV\* OR "ABT-378" OR "ABT 378" OR ABT378\* OR kaletra\*

### Cochrane COVID-19 Study Register

Search date: May 17, 2020

<https://covid-19.cochrane.org/>

lopinav\* OR LPV\* OR "ABT-378" OR "ABT 378" OR ABT378\* OR kaletra\*

### Resources scanned without using a search strategy

1. COVID-19: Global literature on coronavirus disease  
(<https://search.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/>)
2. NIHR: Innovation observatory: COVID-19 Updates (<http://www.io.nihr.ac.uk/covid-19-updates/>)
3. COVID-19: a living systematic map of the evidence  
([http://eppi.ioe.ac.uk/COVID19\\_MAP/covid\\_map\\_v8.html](http://eppi.ioe.ac.uk/COVID19_MAP/covid_map_v8.html))
4. COVID-evidence website (<https://covid-evidence.org/database>)
5. Live map of COVID-19 evidence (<https://www.fhi.no/en/qk/systematic-reviews-hta/map/>)
6. LitCovid (<https://www.ncbi.nlm.nih.gov/research/coronavirus/>)
7. COVID-19 Special Collection (JBI) (<https://jbi.global/ebp/covid-19>)
8. Coronavirus disease (COVID-2019) R&D (<https://www.who.int/blueprint/priority-diseases/key-action/novel-coronavirus/en/>)
9. Coronavirus (COVID-19) Resource Hub  
(<https://pharmacist.therapeuticresearch.com/Content/Topic/all/covid-19-Resource-Hub>)
10. Coronavirus Research Repository (Elsevier Connect)  
(<https://www.cdc.gov/coronavirus/2019-ncov/publications.html>)

11. Coronavirus (COVID-19) (CDC) (<https://www.cdc.gov/coronavirus/2019-ncov/publications.html>)
12. Orientación sobre la COVID-19 y últimas investigaciones en las Américas (PAHO) (<https://covid19-evidence.paho.org/>)
13. COVID-19. Información confiable para la toma de decisiones (<https://www.iecs.org.ar/covid/>)
14. New England Journal of Medicine: Coronavirus (Covid-19) (<https://www.nejm.org/coronavirus>)
15. BMJ: Coronavirus (covid-19): Latest news and resources (<http://bmj.com/coronavirus>)
16. Lancet: COVID-19 Resource Centre (<https://www.thelancet.com/coronavirus>)
17. JAMA: Coronavirus Disease 2019 (COVID-19) (<https://jamanetwork.com/journals/jama/pages/coronavirus-alert>)
18. Cochrane Resources on Coronavirus (COVID-19) (<https://www.cochranelibrary.com/covid-19>)
19. Oxford COVID-19 Evidence Service (<https://www.cebm.net/covid-19/>)
20. NICE Rapid Guideline and Summaries on COVID-19 (<https://www.nice.org.uk/covid-19>)
21. Coronavirus disease (COVID-19) - European Medicines Agency (EMA) (<https://www.ema.europa.eu/en/human-regulatory/overview/public-health-threats/coronavirus-disease-covid-19>)
22. Coronavirus Disease 2019 (COVID-19) - U.S. Food & Drug Administration (FDA). (<https://www.fda.gov/emergency-preparedness-and-response/counterterrorism-and-emerging-threats/coronavirus-disease-2019-covid-19>)