THE LANCET
Infectious Diseases

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Román RG, Tornieporth N, Cherian NG, et al. Medical countermeasures against henipaviruses: a review and public health perspective. *Lancet Infect Dis* 2021; published online Nov 1. https://doi.org/10.1016/S1473-3099(21)00400-X.

Search strategy

Our search has identified and operationalized three data sources:

- CEPI Call for Proposal process
- Landscape Analyses of Nipah Virus Assays and Animal Models for Vaccine Development, produced with support from the U.S. National Institute of Allergy and Infectious Diseases (NIAID), in 2020 (internal document) and in 2021 (public document found here)
- Abstracts and presentations from the Nipah Virus International Conference (Nipah@20), Singapore, December 2019
- Literature search (described below)
- Public funding registries

There are several reasons for the selection of these data sources. First, the CEPI team has been uniquely positioned to outline these data, since CEPI has undertaken the lead role in processing these applications and in communicating with the Nipah scientific and product developer community regarding significant developments in the field. Second, the criteria of public announcement and clear funding sources relate to the retrievability, transparency and reliability of our sources. The search efforts yield a large amount of results, some of which are unconfirmed or erroneous (*see PRISMA flow diagram below*).

Inclusion criteria

- Vaccine candidates, monoclonal antibodies and small molecules that have been announced publicly by the product developer with the description of the platform technology and/or current development status
- Vaccine candidates, monoclonal antibodies target human and/or animal use with minimum animal data presented
- Small molecues candidates with evidence of either an *in vitro* or animal experiment/s, and human clinical evidence where possible for other indications

Exclusion criteria

- Computational MCM (vaccines and mAbs) candidates, with no minimum preclinical data in animal models.
- Computational MCM (small molecule entities) candidates, with no minimum invitro data.
- Pathogenesis, viral identification, epidemiology studies with no therapeutic applications
- mAbs used exclusively to develop assays or diagnostics
- Review, opinion, or taxonomy papers

In addition, we have ongoing communication with scientists involved in CEPI's Task Force on Nipah Assays, Standards and Animal Models and monitor updated evidence on the field across technical topics. For completeness, we also conducted focused searches on specific topics.

Literature search and screening:

From February to April 2021 we collected data on Nipah MCMs R&D. Depending on search database, search terms were based on "Nipah, Hendra, vaccine, henipavirus, monoclonal antibodies, therapeutic, proof-of-concept, treatment" and combinations of these. The saved search history and MeSH Terms can be provided upon request

Databases used for the search include:

- Vaccine projects: Pubmed, NiH Reporter, UK Research innovation, Australian grant database and the European Union Cordis database.
- Small molecule projects: Pubmed, google scholar, clinicaltrials.gov
- mAbs projects: via Pubmed, NiH Reporter

Search results were then saved locally for the screening process.

In order to ensure completeness of our search efforts, we also searched for more pipeline information on projects identified in our previous literature searches. Additionally, we scanned the reference lists of identified articles in the literature for any missed vaccine candidates from previous searches.

From an original volume of 557 records identified through the various sources and search strategies described above, we identified 84 records, as in scope and associated with a total number of 44 vaccine projects, 15 small molecule projects and 4 mAbs projects.

PRISMA flow diagram

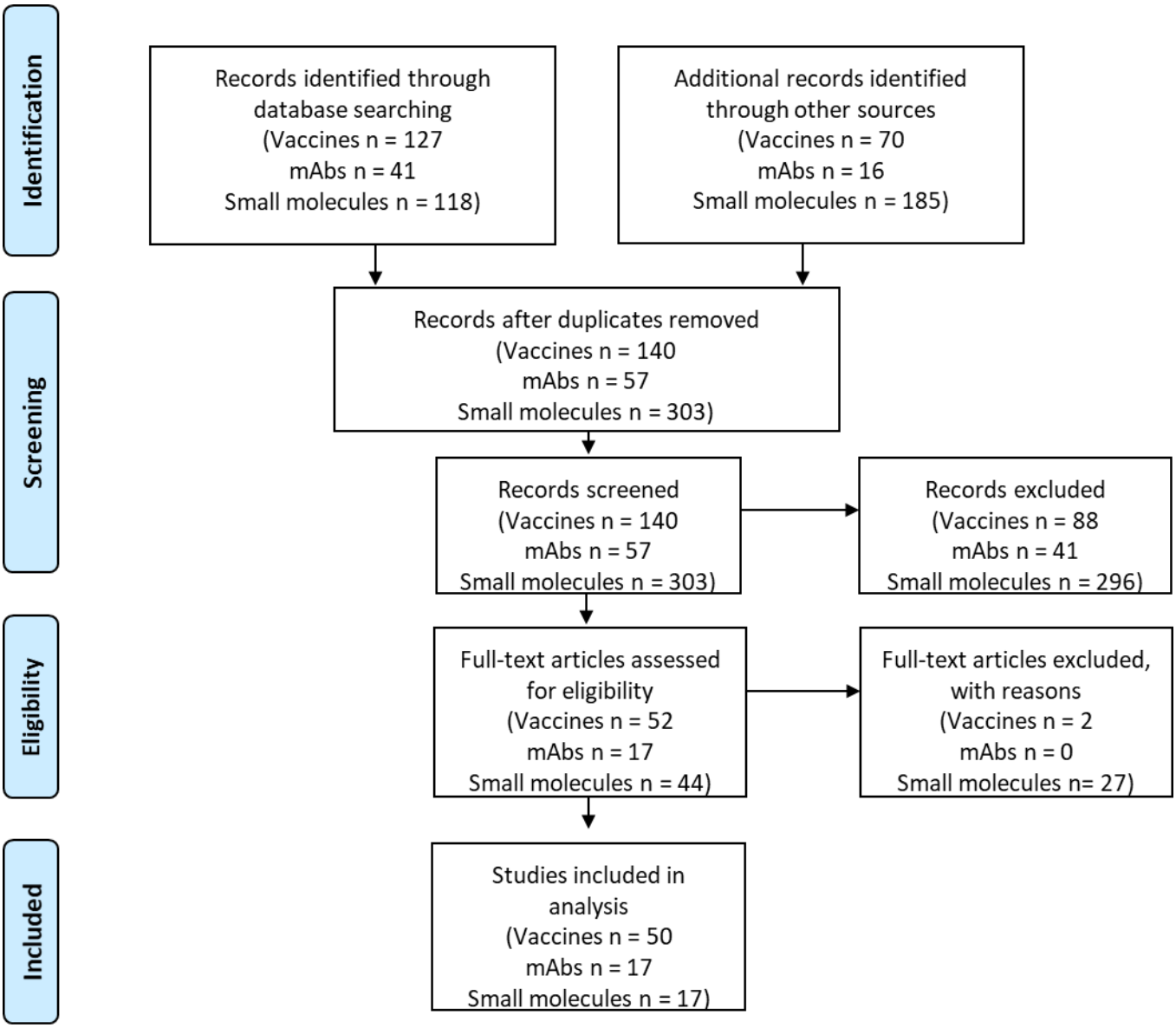

Table e1. Vaccine development projects listed as "active" under public funding databases or other sources

Platform	Vaccine	Stage of development	Funding Agencies (amount of award)	Public databases/sources where listed
Adjuvanted protein subunits	Soluble HeV G glycoprotein in Alum adjuvant[1,2]	Phase I	CEPI (up to 25 million) US NIAID (4·3 million)	CEPI Portfolio webpage[3] NIH RePORTER[4]
	NiV-M Pre-fusion stabilized F proteins linked to G[5]	Pre-clinical	US NIAID (1·3 million)	NIH RePORTER[6]
Viral vectors	Non-replicating ChAdOx1 vector expressing NiV-B G[7]	Pre-clinical	CEPI (up to 19 million)	CEPI Portfolio webpage[3]
	Replicating measles Edmonton strain (Me-Ed) virus vector expressing NiV-M G[8]	Pre-clinical	CEPI (up to 31 million)	CEPI Portfolio webpage[3]
	Replicating rVSV-ZEBOV-GP vector expressing NiV-B G	Pre-clinical	CEPI (up to 43·6 million)	CEPI Portfolio webpage[3]
mRNA	HeV G codon-optimized mRNA in liquid nanoparticles	Pre-clinical	CDC Emerging Infectious Disease Core funds (amount not included in source document)	[9]
	mRNA-1215, mRNA encoding NiV-M F and G in liquid nanoparticles	Pre-clinical	US NIAID and undisclosed private funds	Moderna statement[10] NIH RePORTER[6]

CDC = Centers for Disease Control and Prevention; CEPI = Coalition for Epidemic Preparedness Innovations; HeV = Hendra virus; mRNA = Messenger ribonucleic acid; NIH = National Institutes of Health; NiV = Nipah virus; US NIAID = United States National Institute of Allergy and Infectious Diseases

Reference

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