**Annex 1** – COVID-19 vaccine candidates[[1]](#footnote-1) with EU funding confirmed (green) or with funding from CEPI (blue)

**NOTE**: Additional information on individual efforts by MS in supporting the development of COVID-19 vaccine candidates will be added as soon as it is available.

**NOTE**: Eight of the companies /initiatives below are already in discussion with EU bodies (EC, European Investment Bank, etc.) as regards funding and/or financing of their activities. As soon as a decision is taken, this will be communicated by the Commission, as was recently the case for CureVac AG.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Platform | Type of candidate vaccine | Developer | Current stage of clinical evaluation/regulatory status- | Same platform for non-Coronavirus candidates | Comment on funding |
| NonReplicating Viral Vector | Adenovirus Type 5 Vector | CanSino Biological Inc./Beijing Institute of Biotechnology | Phase 1 ChiCTR2000030906 | Ebola |  |
| RNA | LNPencapsulated mRNA | Moderna/NIAID | Phase 1 NCT0428346 | Multiple candidates | CEPI |
| DNA | DNA plasmid vaccine Electroporation device | Inovio Pharmaceuticals | Pre-Clinical | Lassa, Nipah HIV Filovirus HPV Cancer indications Zika Hepatitis B | CEPI |
| DNA | DNA with electroporation | Karolinska Institute / Cobra Biologics (OPENCORONA Project) | Pre-Clinical |  | EU via Horizon 2020 |
| DNA | DNA plasmid vaccine | Osaka University/ AnGes/ Takara Bio | Pre-Clinical |  |  |
| DNA | DNA | Takis/Applied DNA Sciences/Evvivax | Pre-Clinical |  |  |
| DNA | DNA plasmid vaccine | Zydus Cadila | Pre-Clinical |  |  |
| Inactivated | Inactivated + alum | Sinovac | Pre-Clinical | SARS |  |
| Inactivated | Inactivated | Beijing Institute of Biological Products/Wuhan Institute of Biological Products | Pre-Clinical |  |  |
| Inactivated | TBD | Osaka University/ BIKEN/ NIBIOHN | Pre-Clinical |  |  |
| Live Attenuated Virus | Deoptimized live attenuated vaccines | Codagenix/Serum Institute of India | Pre-Clinical | HAV, InfA, ZIKV, FMD, SIV, RSV, DENV |  |
| Non- Replicating Viral Vector | ChAdOx1 | University of Oxford | Phase 1/2 (not yet recruiting) [NCT04324606](https://clinicaltrials.gov/ct2/show/NCT04324606?term=vaccine&amp;cond=covid-19&amp;draw=2&amp;rank=3) | MERS, influenza, TB, Chikungunya, Zika, MenB, plague | CEPI |
| Non- Replicating Viral Vector | MVA encoded VLP | GeoVax/BravoVax | Pre-Clinical | LASV, EBOV, MARV, HIV |  |
| Non- Replicating Viral Vector | Ad26 (alone or with MVA boost) | Janssen Pharmaceutical Companies | Pre-Clinical | Ebola, HIV, RSV |  |
| Non- replicating viral vector | MVA-S  encoded | DZIF – German Center for Infection Research | Pre-clinical | Many |  |
| Non- Replicating Viral Vector | adenovirus- based NasoVAX expressing SARS2-CoV  spike protein | Altimmune | Pre-Clinical | influenza |  |
| Non- Replicating Viral Vector | Ad5 S  (GREVAX™  platform) | Greffex | Pre-Clinical | MERS |  |
| Non- Replicating Viral Vector | Oral Vaccine platform | Vaxart | Pre-Clinical | InfA, CHIKV, LASV, NORV; EBOV, RVF, HBV, VEE |  |
| Protein Subunit | Capsid-like Particle | AdaptVac (PREVENT-nCoV consortium) | Pre-Clinical |  | EU via Horizon 2020 |
| Protein Subunit | Drosophila S2 insect cell expression system VLPs | ExpreS2ion | Pre-Clinical |  | Possible repetition with candidate above – to be checked |
| Protein Subunit | S protein | WRAIR/USAMRIID | Pre-Clinical |  |  |
| Protein Subunit | S protein  +Adjuvant | National Institute of Infectious Disease, Japan | Pre-Clinical | Influenza |  |
| Protein Subunit | VLP-  recombinant protein + Adjuvant | Osaka University/ BIKEN/ National Institutes of Biomedical Innovation, Japan | Pre-Clinical |  |  |
| Protein Subunit | Native like Trimeric subunit Spike Protein vaccine | Clover Biopharmaceuticals Inc./GSK/Dynavax | Pre-Clinical | HIV, REV Influenza |  |
| Protein Subunit | microneedle arrays S1 subunit | Univ. of Pittsburgh | Pre-Clinical | MERS |  |
| Protein Subunit | Peptide | Vaxil Bio | Pre-Clinical |  |  |
| Protein Subunit | Adjuvanted protein subunit (RBD) | Biological E Ltd | Pre-Clinical |  |  |
| Protein Subunit | Peptide | Flow Pharma Inc | Pre-Clinical | Ebola, Marburg, HIV, Zika, Influenza, HPV therapeutic vaccine, BreastCA vaccine |  |
| Protein Subunit | S protein | AJ Vaccines | Pre-Clinical |  |  |
| Protein Subunit | Ii-Key peptide | Generex/EpiVax | Pre-Clinical | Influenza, HIV, SARS-CoV |  |
| Protein Subunit | S protein | EpiVax/Univ. of Georgia | Pre-Clinical | H7N9 |  |
| Protein Subunit | S protein (baculovirus production) | Sanofi Pasteur | Pre-Clinical | Influenza, SARS-CoV |  |
| Protein Subunit | VLP-  recombinant protein nanoparticle vaccine +  Matrix M | Novavax | Pre-Clinical | RSV; CCHF, HPV, VZV, EBOV | CEPI |
| Protein Subunit | gp-96 backbone | Heat Biologics/Univ. Of Miami | Pre-Clinical | NSCLC, HIV, malaria, Zika |  |
| Protein Subunit | Molecular clamp stabilized Spike protein | University of Queensland/GSK/Dynavax | Pre-Clinical | Nipah, influenza, Ebola, Lassa | CEPI |
| Protein Subunit | S1 or RBD  protein | Baylor College of Medicine | Pre-Clinical | SARS |  |
| Protein Subunit | Subunit protein, plant produced | iBio/CC-Pharming | Pre-Clinical |  |  |
| Protein Subunit | Recombinant protein, nanoparticles (based on S- protein and  other epitopes) | Saint-Petersburg scientific research institute of vaccines and serums | Pre-Clinical |  |  |
| Protein Subunit | COVID-19 XWG-03  truncated S (spike) proteins | Innovax/Xiamen Univ./GSK | Pre-Clinical | HPV |  |
| Protein Subunit | Adjuvanted microsphere peptide | VIDO-InterVac, University of Saskatchewan | Pre-Clinical |  |  |
| Protein Subunit | Synthetic Long Peptide Vaccine candidate for S and M proteins | OncoGen | Pre-Clinical |  |  |
| Replicating Viral Vector | Measles Vector | Zydus Cadila | Pre-Clinical |  |  |
| Replicating Viral Vector | Measles Vector | Institute Pasteur/Themis/Univ. of Pittsburg Center for Vaccine Research | Pre-Clinical | West nile, chik, Ebola, Lassa, Zika | CEPI |
| Live attenuated virus | Measles Virus (S, N targets) | DZIF – German Center for Infection Research | Pre-clinical | Zika, H7N9, CHIKV |  |
| Replicating Viral Vector | Horsepox vector expressing S protein | Tonix Pharma/Southern Research | Pre-Clinical | Smallpox, monkeypox |  |
| Replicating Viral Vector | Influenza vector expressing RBD | University of Hong Kong | Pre-Clinical |  | CEPI |
| Replicating Viral Vector | VSV vector expressing S protein | IAVI/Batavia | Pre-Clinical | Ebola, Marburg, Lassa |  |
| RNA | LNP-  encapsulated mRNA cocktail encoding VLP | Fudan University/ Shanghai JiaoTong University/RNACure Biopharma | Pre-Clinical |  |  |
| RNA | LNP-  encapsulated mRNA  encoding RBD | Fudan University/ Shanghai JiaoTong University/RNACure Biopharma | Pre-Clinical |  |  |
| RNA | LNP-  encapsulated mRNA | University of Tokyo/ Daiichi-Sankyo | Pre-Clinical | MERS |  |
| RNA | mRNA | China CDC/Tongji University/Stermina | Pre-Clinical |  |  |
| RNA | mRNA | Arcturus/Duke-NUS | Pre-Clinical | multiple candidates |  |
| RNA | mRNA | BioNTech/Fosun Pharma/Pfizer | Pre-Clinical |  |  |
| RNA | saRNA | Imperial College London | Pre-Clinical | EBOV; LASV, MARV, Inf (H7N9), RABV |  |
| RNA | mRNA | Curevac | Pre-Clinical | RABV, LASV, YFV; MERS, InfA, ZIKV,  DengV, NIPV | CEPI  EU via InnovFin Infectious Disease Finance Facility under H2020 |
| VLP | Plant-derived VLP | Medicago Inc. | Pre-Clinical | Flu, Rotavirus, Norovirus, West Nile  virus, Cancer |  |
| VLP | ADDomerTM multiepitope  display | Imophoron Ltd and Bristol  University’s Max Planck  Centre | Pre-Clinical |  |  |
| Unknown | Unknown | ReiThera | Pre-Clinical |  |  |
| Unknown | Unknown | BioNet Asia | Pre-Clinical |  |  |
| Unknown | Unknown | ImmunoPrecise | Pre-Clinical |  |  |
| Unknown | Unknown | MIGAL Galilee Research  Institute | Pre-Clinical |  |  |
| Unknown | Unknown | Doherty Institute | Pre-Clinical |  |  |
| Unknown | Unknown | Tulane University | Pre-Clinical |  |  |

1. Based on the DRAFT landscape of COVID-19 candidate vaccines from WHO – 4 April 2020 (<https://www.who.int/blueprint/priority-diseases/key-action/Novel-Coronavirus_Landscape_nCoV-4april2020.pdf>) [↑](#footnote-ref-1)