

Covid-19 Vaccines and Treatments in Development - Updated August 7, 2020

Yellow – Morally Produced

AVM Biotech – AVM-0703

Treatment/Preventative

Steroid supercharge patient immune system

Steroid supercharges immune system, targeting T-cells, NKT (Natural Killer T) cells which attack and kill Covid-19 virus. www.avmbiotech.com

Israel – Pluristem

Using placenta donated from newborn babies

<https://www.pluristem.com/the-placenta-difference/>
<https://www.jpost.com/health-science/israeli-cell-therapy-to-treat-acute-covid-19-patients-prevent-ards-621016>

BCG Vaccine: No cells involved

<https://www.fda.gov/media/78331/download>
<https://www.tribuneindia.com/news/nation/bcg-vaccine-to-be-tested-in-covid-19-battle-71090>

British American Tobacco (BAT)

Tobacco company in Australia – morally produced using tobacco leaves.

<https://www.telegraph.co.uk/business/2020/04/01/cigarette-maker-claims-coronavirus-vaccine-breakthrough/>

Novavax – NVX-CoV2373

<https://ir.novavax.com/news-releases/news-release-details/novavax-identifies-coronavirus-vaccine-candidate-accelerates>

Uses Insect cells:

<https://www.novavax.com/page/8/vaccine-technology>

Matrix uses Sapaonin:

<https://www.novavax.com/page/10/matrix-m-adjvant-technology>

Athersys – Multistem - Treatment

Uses Bone Marrow Adult Stem Cells

<https://seekingalpha.com/article/4332788-athersys-now-in-play-for-covidminus-19-fda-fast-tracked-therapy-for-ards>

Sorrento Therapeutics

STI-6991 is an I-Cell™ COVID-19 cellular vaccine made of K562 cells expressing membrane-bound S1 protein of the SARS-CoV-2 virus

K562 cells – from 53 year old female cancer patient

<https://finance.yahoo.com/news/sorrento-launches-novel-cell-covid-140059499.html>

And

<https://www.sciencedirect.com/science/article/pii/S2590098620300130?via%3Dihub>

Red – Uses Aborted Fetal Cells

Moderna And NIAID

Vaccine candidate: mRNA-1273

HEK 293 in Development and Testing;

NIAID using HEK in Spike Protein

<https://www.nejm.org/doi/full/10.1056/NEJMoa2022483>

And

<https://www.nature.com/articles/s41586-020-2622-0>

And

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnethtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,583,203.PN.&OS=PN/10,583,203&RS=PN/10,583,203>

And

<https://www.biocentury.com/article/304254/moderna-novavax-among-biotechs-working-on-novel-virus-but-vaccine-at-least-a-year-out>

And

<https://science.sciencemag.org/content/367/6483/1260.full>

Johnson & Johnson/Janssen Tech.

Ad-Vac – uses aborted fetal PER C6

<https://www.jnj.com/johnson-johnson-announces-a-lead-vaccine-candidate-for-covid-19-landmark-new-partnership-with-u-s-department-of-health-human-services-and-commitment-to-supply-one-billion-vaccines-worldwide-for-emergency-pandemic-use>

And

<https://www.janssen.com/infectious-diseases-and-vaccines/patented-technologies>

And

Johnson & Johnson/Emergent Biosolutions

[https://investors.emergentbiosolutions.com/news-releases/news-release-details/emergent-biosolutions-signs-agreement-be-us-manufacturing?field_nir_news_date_value\[min\]=](https://investors.emergentbiosolutions.com/news-releases/news-release-details/emergent-biosolutions-signs-agreement-be-us-manufacturing?field_nir_news_date_value[min]=)

Inovio Pharmaceuticals

Vaccine candidate: INO-4800

Uses HEK-293 cells in MERS-HCoV Platform

Patent no. 10,548,971 Feb 4, 2020

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnethtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,548,971.PN.&OS=PN/10,548,971&RS=PN/10,548,971>

Sanofi Pasteur Sars-CoV – insect cells

<https://www.hhs.gov/about/news/2020/02/18/hhs-engages-sanofis-recombinant-technology-for-2019-novel-coronavirus-vaccine.html>

And

<https://www.precisionvaccinations.com/sanofi-pasteur%20will-deploy-its-recombinant-dna-platform-produce-recombinant-2019-novel-coronavirus>

Sanofi Partners with GSK

Insect cells and AS03 adjuvant

<https://www.wsj.com/articles/glaxosmithkline-sanofi-team-up-for-coronavirus-vaccine-11586875480?mod=lead> feature below a pos1

Codagenix and Serum Institute

CDX-CoV – Uses Vero Cells

<https://patents.google.com/patent/US20190233476A1/en?assignee=codagenix&oq=codagenix>
[0144] Materials and Methods

Symvivo

Uses e-Coli and Bifidobacterium

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetacgi/html%2FPTO%2Fsearch-bool.html&r=2&f=G&l=50&co1=AND&d=PTXT&s1=symvivo&OS=symvivo&RS=symvivo>

JPII Medical Research Inst. And CET (Cellular Engineering Technology)

Uses stem cell from postnatal placental tissue

<https://www.jp2mri.org/>

Sinovac Biotech

PiCoVacc – Uses Vero Cells

<https://www.news-medical.net/news/20200421/PiCoVacc-vaccine-candidate-for-COVID-19-effective-in-animal-trials.aspx>

Regeneron – Sanofi

Treatment for Covid-19

Kevzara – Uses Blood donor and Chinese Hamster Ovary (CHO cells)

Package insert:

<http://products.sanofi.us/Kevzara/Kevzara.pdf>

And Patent:

<https://patents.google.com/patent/US8080248B2/en>

The University of Oxford

Vaccine candidate: ChAdOx1 and AZD1222

Uses HEK-293 cells.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5516308/>

And

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3396660/>

And partnership with Merck Germany:

<https://www.prnewswire.com/in/news-releases/merck-supports-jenner-institute-to-reach-first-milestone-in-covid-19-vaccine-manufacturing-891225678.html>

And partnership with AstraZeneca AZD1222

<https://www.astrazeneca.com/content/astraz/media-centre/press-releases/2020/astrazeneca-and-oxford-university-announce-landmark-agreement-for-covid-19-vaccine.html>

And vaccine name change:

<https://www.precisionvaccinations.com/vaccines/azd1222-sars-cov-2-vaccine>

CanSino Biologics

Vaccine candidate: Ad5-nCoV

<http://www.cansinotech.com/homes/article/show/56/153.html>

Using HEK 293 cells (See page 25)

http://www.jshealth.com/jgz/zjg/ymlcpjs/ymlcpjs_gzdt/201612/W020161214426550507006.pdf

University of Pittsburgh

Using HEK-293

<https://pittsburgh.cbslocal.com/2020/04/02/university-of-pittsburgh-medical-school-coronavirus-potential-vaccine-unveiled/>

Linked in the article: Materials and Methods

[https://www.thelancet.com/pdfs/journals/ebiom/PIIS2352-3964\(20\)30118-3.pdf](https://www.thelancet.com/pdfs/journals/ebiom/PIIS2352-3964(20)30118-3.pdf)

Altimune

Based on intranasal vaccine proprietary technology; Uses PER.C6

<https://www.globenewswire.com/news-release/2020/02/28/1992600/0/en/Altimune-Completes-First-Development-Milestone-Toward-a-Single-Dose-Intranasal-COVID-19-Vaccine.html>

And Patent:

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetacgi/html%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,183,069.PN.&OS=PN/10,183,069&RS=PN/10,183,069>

Merck and IAVI

**Using Merck's Ervebo (Ebola Vaccine) Platform
Uses Vero cells**

<https://www.businesswire.com/news/home/20200526005274/en/>

BioNTech and Pfizer

Uses K562 cells in protein expression

Patent No. 10,669,322

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnethtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,669,322.PN.&OS=PN/10,669,322&RS=PN/10,669,322>

Institute of Microbiology, Chinese Academy of Sciences, Zhifei Longcom

RBD-Dimer Uses Chinese Hamster Ovary cells

<https://theprint.in/health/cansino-moderna-novavax-a-list-of-covid-vaccines-under-clinical-trials-across-the-world/454051/>

Medicago/GSK/Dynavax

Uses VLPs produced in plant cells

<https://www.ctvnews.ca/health/coronavirus/the-hunt-for-a-vaccine-canadian-company-begins-human-testing-of-covid-19-candidate-1.5022960>

Curevac

**mRNA uses patients muscle cells to build antibody;
imitates the natural viral infection and activates
our own immune defense system.**

<https://www.curevac.com/covid-19>

Massachusetts Eye and Ear

Using HEK-293 AAV Covid Adenovirus vector

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnethtml%2FPTO%2Fsearch-bool.html&r=12&f=G&l=50&col=AND&d=PTXT&s1=Vandenberghe&OS=Vandenberghe&RS=Vandenberghe>

Lindsley F. Kimball Research Institute, New York Blood Center and Beijing Institute of Microbiology and Epidemiology

Uses HEK-293 cells

<https://www.nature.com/articles/s41423-020-0400-4#Sec1>