

Gilead Sciences, Inc.

09:40 22 Jun 2020

Coronavirus: What's happening in the labs of pharma companies worldwide

While most of the global population is under lockdown to prevent the spread of the coronavirus, many laboratories in the pharma industry are striving to tackle the pandemic.

Some companies are repurposing or developing treatment, others are focusing on vaccines, tests or technology to deliver drugs in the body.

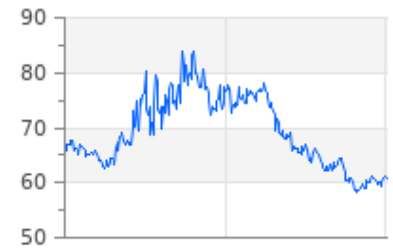
Existing drugs being repurposed

- Gilead Sciences Inc's (NASDAQ:GILD) antiviral medication remdesivir received temporary approval by US, UK and Japanese authorities for Covid-19 treatment. The firm also agreed with five generics producers to supply it in 127 countries. Three trials confirmed that remdesivir allows for a faster recovery in patients with severe symptoms, while other studies are ongoing to confirm its safety and efficacy.
- Swiss giant Roche is studying arthritis treatment Actemra, with clinical results expected between June and July.
- Remdesivir and Actemra are also being evaluated as a combination in a global study on 450 patients.
- AstraZeneca PLC (LON:AZN) is assessing the efficacy of Calquence, normally used for blood cancer.
- Sanofi is focusing on Plaquenil/Hydroxychloroquine, used for malaria, and rheumatoid arthritis treatment Kevzara in conjunction with Regeneron.
- Swiss conglomerate Novartis is evaluating canakinumab, a fully-human antibody, and ruxolitinib, a treatment for bone marrow disorders.
- Ergomed PLC (LON:ERGO) is running trials for two antibodies, namilumab (IZN-101) and siltuximab. Interim data on the latter showed that 33% of patients saw clinical improvement, with a reduced need for oxygen support, while 43% stabilised.
- Respiratory drug developer Synairgen PLC (LON:SNG) is testing its candidate SNG001, a formulation based on interferon beta, a naturally occurring protein which orchestrates the body's antiviral responses.
- Faron Pharmaceuticals Oy's (LON:FARN) Traumakine is assessed in combination with the HIV drug lopinavir in the World Health Organisation's Solidarity trial.
- CytoDyn Inc begun the first human trials for leronlimab (PRO 140), initially designed to treat HIV, in mid-April.
- NASDAQ-listed Evelo Biosciences' candidate EDP1815, investigated for inflammatory diseases, is to be included in a clinical trial sponsored by Cambridge University Hospitals NHS Foundation Trust. The TACTIC-E trial is looking at evaluating experimental therapies in the prevention and treatment of life-threatening complications in hospitalised patients at early stages of the disease.
- The University of Dundee is testing brensocaticib, a treatment originally

Price: 60.86

Market Cap: \$76.29 billion

1 Year Share Price Graph



December 2019 June 2020 December 20

Share Information

Code: GILD

Listing: NASDAQ

52 week	High	Low
	85.97	57.04

Sector: Medical technology & services

Website: www.gilead.com

Company Synopsis:

Gilead Sciences, Inc. is a biopharmaceutical company that discovers, develops and commercializes therapeutics. The Company sells and distributes Truvada, Viread, Emtriva, Hepsera and AmBisome in Asia, Australia, Europe, Latin America, the Middle East and New Zealand, through its commercial teams, third party distributors or partners.

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designed for long-term lung conditions. The project is funded by Insmid Incorporated (NASDAQ:INSM), the developer of the drug.

- The University of Oxford is conducting two trials: 'PRINCIPLE', testing the anti-malarial drug Plaquenil-Hydroxychloroquine, and 'RECOVERY', involving several drugs: Lopinavir-Ritonavir (commonly used to treat HIV), Dexamethasone (a type of steroid, which is used in a range of conditions typically to reduce inflammation), Hydroxychloroquine (related to an anti-malarial drug), Azithromycin (a commonly used antibiotic), Tocilizumab (an anti-inflammatory treatment given by injection).

New treatment

- GlaxoSmithKline PLC (LON:GSK) and Vir Biotechnology Inc (NASDAQ:VIR) are cooperating to research coronaviruses using Vir's antibody platform technology.
- Tiziana Life Sciences PLC (LON:TILS) has developed a handheld inhaler that will allow the rapid delivery of TZLS-501, its drug to treat inflammation of the lung caused by the coronavirus.
- The NHS is preparing to test the blood of coronavirus survivors to see if it can be used to treat patients.
- Other groups are working on antibodies from people who have recovered, such as Takeda, Mount Sinai and Hopkins. The results can be used by vaccine developers as they will help understanding how the immune system works, said Tim Xu, investment associate at venture capital company Arix Bioscience PLC (LON:ARIX).

Vaccines

- The Jenner Institute at Oxford University signed a deal with AstraZeneca PLC (LON:AZN) to produce and distribute its candidate. The FTSE 100-listed firm is boosting operations, with sourced capacity now sitting at 2bn doses. Oxford Biomedica PLC (LON:OXB) has signed a one-year supply agreement to make its manufacturing capacity available.
- Imperial College London began the first phase of trials for its candidate in June.
- The UK government has funded the Vaccines Manufacturing Innovation Centre, scheduled to open in summer 2021. It is supported by Johnson & Johnson (NYSE:JNJ) and Merck & Co. (NYSE:MRK) among others and will have capacity to produce enough vaccine doses to cover the UK population in six months.
- Novavax Inc (NASDAQ:NVAX) is testing a cohort of 130 participants for NVX-CoV2373 with results expected in July.
- GlaxoSmithKline PLC (LON:GSK) and French rival Sanofi have agreed to develop a candidate that is scheduled to enter clinical trials in the second half of 2020 and be ready by 2021.
- Biotech company Moderna Inc (NASDAQ:MRNA) developed a candidate in only 63 days, potentially entering the final phase of trials in July. If ready it could be available to some professional categories by

autumn 2020.

- Johnson & Johnson has pencilled in human clinical studies by September, with the first batches potentially available for emergency use authorisation in early 2021.
- Pfizer Inc. (NYSE:PFE) teamed up with BioNTech (NASDAQ:BNTX) to develop four candidates, with clinical trials having started in Germany and the US.
- Frontier IP Group PLC's (LON:FIPP) portfolio company The Vaccine Group is working on formulations for animals to prevent coronaviruses from infecting humans again.
- Small cap Scancell Holdings PLC (LON:SCLP) announced plans to investigate a potential formulation.
- German company CureVac was subject to a tug of war between the country's government and Donald Trump, who prompted outrage by attempting to buy the low-cost coronavirus vaccine developer in March.
- PDS Biotechnology Corporation (Nasdaq: PDSB) expanded its vaccine development programme adding COVID-19.
- Beijing-based Sinovac announced positive results of the two initial phases of clinical trials, and is looking to conduct the final round outside of China.
- Fellow Chinese firm CanSino Biologics published lukewarm results of the first phase in May, with only 75% of people who received the high dose and 50% of people who received a medium or low dose of the vaccine developed levels of neutralizing antibodies deemed high by the researchers. Most people suffered side effects. The second phase started in April.
- Other candidates are being studied by Inovio, Merck the Shenzhen Geno-Immune Medical Institute, and a partnership between Soligenix and the University of Hawaii.
- GlaxoSmithKline vowed to produce 1bn doses of its pandemic vaccine adjuvant system to support the development of Covid-19 candidates. Adjuvants are agents that improve the immune response of a vaccine and create a stronger immunity against infections.

Diagnosics and equipment

- Several companies are focusing on serology tests, which target antibodies to see whether the person has had the virus. According to analysts at Credit Suisse, they are "critical" in understanding immunity and potentially lift restrictions. Abbott and Eurofins announced the launch of their tests in mid-April, while Roche's Elecsys received approval in the US and Europe, with the UK in talks to secure a contract. The Swiss giant is ramping up production "to high double-digit millions per month".
- Novacyt PLC (LON:NCYT) has been one of the pioneers in swab testing, launching the first kit in February, followed by a second one, designed to deliver faster results, in March. It is manufacturing 4mln tests per month. It is also developing a new test that does not require certain extraction reagents which are lacking throughout the market.
- Genedrive PLC (LON:GDR) is developing a test, set to be approved in May, to deliver results quickly in close proximity to patients, rather than needing to send samples to labs to be tested and waiting for a

conclusive result.

- Inspiration Healthcare Group PLC (LON:IHC) has boosted production of ventilator machines and other crucial medical equipment for the UK.
- Catenae Innovation PLC (LON:CTEA) has built an operational prototype of a phone app that can store and share coronavirus test information. Trialling started on 18 May.
- Open Orphan PLC 's (LON:ORPH) subsidiary hVIVO is in an antibody testing partnership with NASDAQ-listed medical devices firm Quotient. hVIVO will use Quotient's recently-certified MosaiQ system to screen for SARS-CoV-2 antibodies, with operations set to start in the first days of June.
- Feedback PLC (LON:FDBK) has developed extra features for Bleepa, a communication tool for healthcare professionals to share and discuss medical images and patient cases, to enhance its service during the pandemic. It is being used in two hospitals and is set to be expanded in many more once it receives the CE mark.
- e-Therapeutics PLC (LON:ETX) has re-purposed an existing platform to test approved and known drugs, both alone and as combinations, for Covid-19 treatment.
- EKF Diagnostics Holdings PLC (LON:EKF) has developed a sample collection device that allows safe handling and transport.
- The UK government is starting a pilot to test asymptomatic cases of COVID-19 by taking saliva tests. The first batch will be carried out with assays provided by OptiGene, however the authorities are also considering partnerships with Avacta Group PLC (LON:AVCT), Chronomics, MAP Science and Oxford Nanoimaging.

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