Antibody News You Should Know

May 15 - June 1, 2020

Coronavirus in the crosshairs, Part 9: Anti-SARS-CoV-2 biologics entering clinical study is now online!

As of the end of May 2020, more than 15 organizations have announced that their anti-SARS-CoV-2 molecules may enter clinical study during June to December 2020. **This installment of the series** includes:

- Name of organization and partners
- Type of molecule (mostly antibody, but also DARPin and fusion proteins)
- Estimated timing of the start of clinical studies

And, since you were wondering about **approval success rates** for anti-infective antibodies vs. all antibody therapeutics, we included that too!

The recent events in antibody-based therapeutics development described below involve **both non-COVID-19 as well as COVID-19 interventions**. Follow the links for more details.

Updates on non-COVID-19 interventions

License agreements

On May 15, 2020, **Lava Therapeutics B.V., announced that it has entered into a research and license agreement with Janssen Biotech, Inc.** to discover and develop novel bispecific antibodies to γδ T cells for the treatment of cancer.

- **γδ T cells**, which are a distinct subgroup of T cells containing T cell receptor γ and TCR δ chains, participate in immune responses during cancer progression. Bispecific antibodies can be designed to direct these T cells to tumor cells.

On May 15, 2020, **LegoChem Biosciences, Inc. announced a worldwide license agreement with Iksuda Therapeutics** for the development and commercialization of LCB73 for hematological tumors. LCB73 was generated in a partnership between LCB and Swiss-based Light Chain Bioscience (Novimmune SA).

- LCB73 is a CD19-targeted antibody-drug conjugate (ADC).

First Phase 1, Phase 2 or Phase 3 studies

First posted to clinicaltrials.gov on May 21, 2020, **NCT04397276** is a Phase 1 study of JNJ-70218902, a T-cell redirecting agent, in advanced stage solid tumors. Participants with metastatic castration-resistant prostate cancer will receive JNJ-70218902. In part 1 of the study, dose levels will be escalated sequentially based on the decisions of the Study Evaluation Team (SET) until the recommended Phase 2 Dose (RP2D) has been identified. In part 2, participants will receive JNJ-70218902 at the RP2D determined in Part 1. The study is not yet recruiting patients; the estimated study start date is June 25, 2020.

- Publicly available information about JNJ-70218902's composition of matter has not yet been found.

On May 26, 2020, **Sorrento Therapeutics, Inc. announced** it received clearance from the U.S. Food and Drug Administration (FDA) for its investigational new drug application (IND) for STI-6129. **NCT04316442**, a Phase 1, open-label, dose-escalation study of the safety and efficacy of STI-6129 in patients with relapsed or refractory systemic amyloid light chain amyloidosis, has an estimated study start date of August 1, 2020.

- STI-6129 is an anti-CD38 ADC with a Duostatin 5 payload added using site-specific C-LOCK conjugation technology.

On May 27, 2020, **Vir Biotechnology, Inc. announced the initiation of a Phase 1 clinical trial of VIR-3434**, which will assess the safety, tolerability, pharmacokinetics, antiviral and immunomodulatory activity of this monoclonal antibody in healthy volunteers and patients with chronic HBV infection.

- VIR-3434 is an HBV-neutralizing monoclonal antibody designed to block entry of all 10 genotypes of HBV into hepatocytes, and to reduce the level of virions and subviral particles in the blood. The Fc region has been engineered for extended half-life and to include the XX2 "vaccinal mutation," for which Vir has licensed exclusive rights for all infectious diseases.

On May 21, 2020, **Alethia Biotherapeutics announced that the FDA has cleared its Phase 2 IND application for AB-16B5**. The company to initiate a multi-center trial (**NCT04364620**) of AB-16B5 in combination with docetaxel in previously treated subjects with metastatic non-small cell lung cancer (NSCLC) who have experienced disease progression following treatment with a platinum-containing doublet treatment and an anti-PD1 or PD-L1 immune checkpoint antibody.

- AB-16B5 is a humanized IgG2 monoclonal antibody that selectively binds and inhibits tumor-associated secreted clusterin, a protein expressed in many cancers.

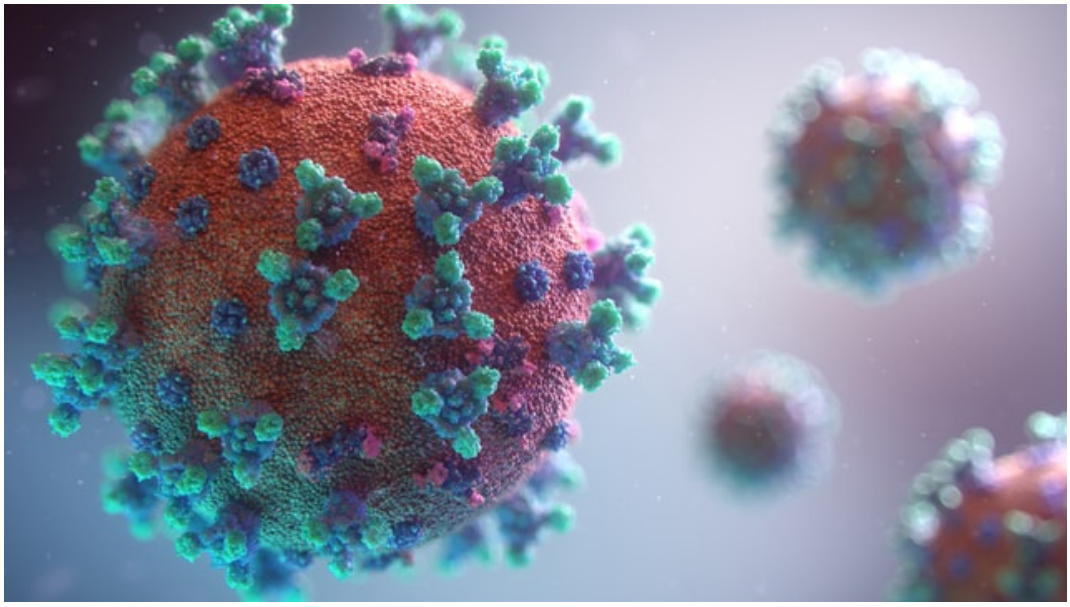
First posted to clinicaltrials.gov on May 29, 2020, **NCT04408638** is a Phase 3, open-label, multicenter, randomized study evaluating the efficacy and safety of glofitamab in combination with gemcitabine plus oxaliplatin versus rituximab in combination with gemcitabine and oxaliplatin in patients with relapsed/refractory diffuse large B-cell lymphoma.

- Glofitamab (RO7082859, CD20-TCB, RG6026) is a bispecific antibody with IgG-like pharmacokinetic properties whose “2:1” structure leads to increased tumor antigen avidity, T cell activation, and tumor cell killing, as compared to other T cell engaging bispecific antibody molecular formats. The molecule comprises two CD20 binding Fabs (derived from the Type II CD20 IgG1 obinutuzumab), one CD3e binding Fab (fused to one of the CD20 Fabs via a short flexible linker), and an engineered, heterodimeric Fc region with completely abolished binding to FcgRs and C1q.

Regulatory review update

On May 28, 2020, **MacroGenics, Inc. announced** that the FDA notified the company that it is no longer planning to hold an Oncologic Drugs Advisory Committee meeting to discuss the Biologics License Application for margetuximab. The FDA also stated it continues to anticipate meeting the Prescription Drug User Fee Act goal date for the application review, which is December 18, 2020.

- Margetuximab is an Fc-engineered, monoclonal antibody that targets human epidermal growth factor receptor 2.



New developments in COVID-19 interventions

The Antibody Society is closely tracking over 110 programs involving the development of recombinant protein therapeutics, mostly monoclonal antibodies, as COVID-19 interventions. While some are intended to ameliorate symptoms of the disease, such as elevated levels of cytokines or abnormal clotting, more than 60 directly target SARS-CoV-2 and block its entry into cells.

News announced during May 15 - June 1, 2020 include:

On May 28, 2020, **Abcore, Inc. announced a panel of functional single domain antibodies** (sdAbs) therapeutic candidates they discovered and tested for the treatment of Coronavirus Disease 2019 (COVID-19). The therapeutic candidates bind to the spike protein of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and functionally block binding to its target, angiotensin converting enzyme-2.

- Abcore's antibody discovery and phage display platform includes a high diversity library of over 100 billion sdAbs, which was screened, allowing isolation of a large number of potential binders that were then biologically characterized.

On May 19, 2020, **Prellis Biologics, Inc. announced that it generated 300 human IgG antibodies** that bind to either the S1 or S2 spike protein of the SARS-CoV2 Wuhan strain. The

company expects refinement of its lead candidates to take about one month, after which they will pursue development of a multi-antibody cocktail therapeutic.

- Prellis' Externalized Human Immune System™ technology, was used to produce 960 synthetic human lymph nodes, which, when challenged with a SARS-CoV2 vaccine-like cocktail, yielded the antibodies.

On May 27, 2020, **Virna Therapeutics announced that they are partnering with University of Toronto to in-license neutralizing antibodies** targeting the SARS-CoV-2 spike protein to treat COVID-19. The discovery was made in the laboratory of Prof. Sachdev Sidhu at the University of Toronto's Donnelly Centre for Cellular and Biomolecular Research.

On May 28, 2020, Cerecor Inc. announced they are proceeding with a **proof-of-concept clinical trial of CERC-002**, a human IgG4 monoclonal antibody targeting the inflammatory cytokine LIGHT, in patients with COVID-19 cytokine storm-induced acute respiratory distress syndrome. The first patient is expected to enroll in June and top-line data are expected in the fourth quarter of 2020.

- Licensed from Kyowa Kirin Co., Ltd., CERC-002 (also known as MDGN-002) is undergoing evaluation in a Phase 1 clinical study (NCT03169894) of patients with Crohn's disease.

First posted on May 26, 2020, **NCT04401475** is a Phase 2, randomized, double-blind, placebo-controlled study to evaluate the safety and efficacy of EB05 + standard of care (SOC) vs. placebo + SOC in adult hospitalized patients with moderate to severe COVID-19 pneumonia. The first patient is expected to enroll in July and the estimated primary completion date is September 2020.

- EB05 is a humanized IgG1 antibody targeting Toll-like receptor 4 licensed to Edesa Biotech by Light Chain Bioscience in April 2020 for development as a COVID-19 intervention.