**Anti-SARS-CoV-2 Monoclonal Antibodies (mAb)**

Investigational medications approved for emergency use in patients by the FDA

May reduce progression to severe disease and shorten recovery in high-risk patients

**INDICATIONS**
- For treatment of patients (≥12 years) with mild to moderate COVID-19 and NOT requiring hospitalization or supplemental oxygen
- For post-exposure prophylaxis (PEP) in patients (≥12 years) who are nonvaccinated, incompletely vaccinated, or immunocompromised
- Must be given within 10 days of first symptoms of COVID-19 (or exposure for PEP)
- Treatment is usually IV; good evidence for SC administration for PEP and can be given SC if IV not feasible for treatment. **Efficacy varies depending on circulating variant.**

**EXISTING MONOCLONAL ANTIBODY THERAPIES**

<table>
<thead>
<tr>
<th>Sotrovimab</th>
<th>Targets an epitope conserved between SARS-CoV-1 and SARS-CoV-2. <strong>Active against Omicron.</strong></th>
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<tbody>
<tr>
<td>Bebtelovimab</td>
<td>Recombinant neutralizing human mAb that binds to spike protein of SARS-CoV-2. <strong>Active against Omicron.</strong></td>
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<tr>
<td>Casirivimab plus imdevimab (REGEN-COV)</td>
<td>Recombinant human mAbs that bind to nonoverlapping epitopes in the spike protein of SARS-CoV-2. <strong>EUA updated 1/24/2022 - not active against Omicron.</strong></td>
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<tr>
<td>Bamlanivimab plus etesevimab</td>
<td>Neutralizing mAbs that bind to different, but overlapping, epitopes in the spike protein of SARS-CoV-2. <strong>EUA updated 1/24/2022 - not active against Omicron.</strong></td>
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**SEVERAL MECHANISMS OF ACTION**

SARS-CoV-2

- **Neutralization**
  - Neutralizing antibody can prevent viral binding to cell
- **Opsonization**
  - Binds (or opsonizes) the virions or infected cells to make phagocytic uptake easier
- **Complement-dependent cytotoxicity**
  - Antibody-dependent cellular cytotoxicity
  - Can cause apoptosis or necrosis of the infected cell through complement fixation and membrane attack complex activation or antibody-dependent cytotoxicity

**NIH GUIDELINES: WHO SHOULD GET mAb THERAPY?**
- Aged ≥65 years
- Obesity (BMI >30)
- Diabetes mellitus
- Cardiovascular disease
- Chronic lung diseases
- An immunocompromising condition or immunosuppressive treatment (eg, transplant, rheumatic diseases, HIV infection)
- Chronic kidney disease
- Pregnancy
- Sickle cell disease
- Neurodevelopmental disorders (eg, cerebral palsy) or other conditions that confer medical complexity (eg, genetic or metabolic syndromes and severe congenital anomalies)
- Medical-related technological dependence (eg, tracheostomy, gastrostomy, or positive pressure ventilation that is not related to COVID-19)