Petri Bio

Treatment for COVID-19

Continuous Directed Evolution
for rapid therapeutic development

COVID-19 is a rapidly unfolding health crisis with widespread devastating effects

Physical

12% hospitalization

1.4- 2.8% death rate

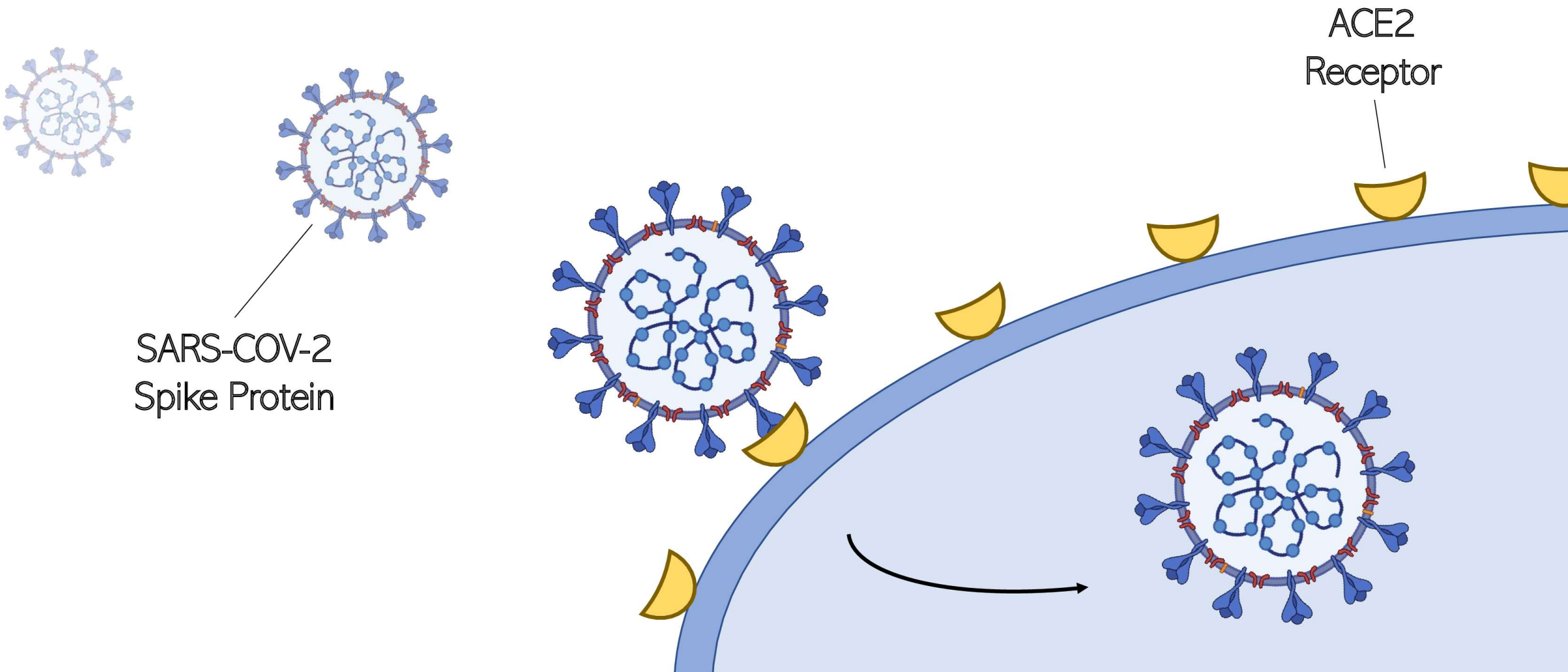
Mental

>50% frontline medical workers report depression symptoms

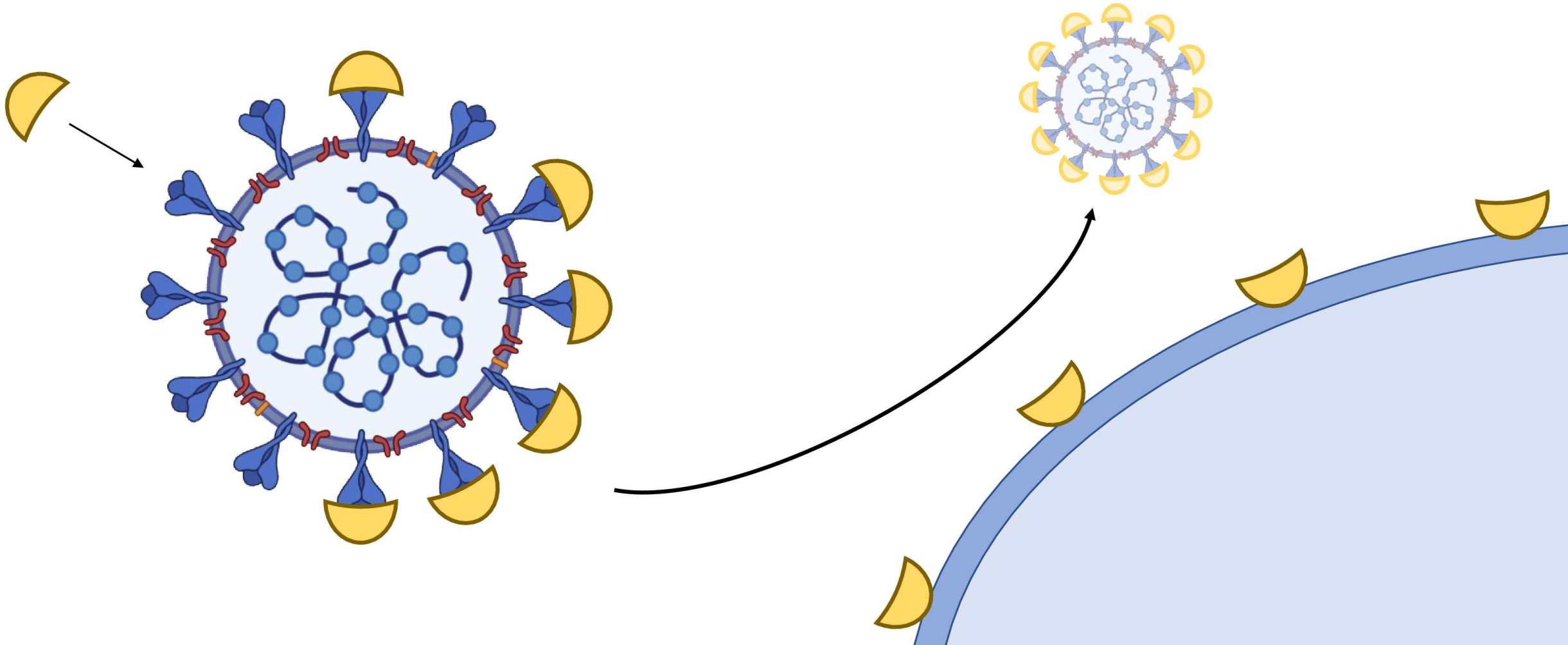
Economic

Estimated $8.5 T financial lost; record US unemployment

COVID-19 enters cells through the interaction of spike protein with ACE2



Soluble “decoy” ACE2 can bind and use up spike protein, blocking infection in cell culture



Challenge: high concentrations of ACE2 can cause side effects

Solution: we need higher affinity ligands that can be effective at lower doses

Our 3 Step Approach

1-Comparative Genomics

2-Directed Evolution

3-Immune Tagging

1- Comparative Genomics

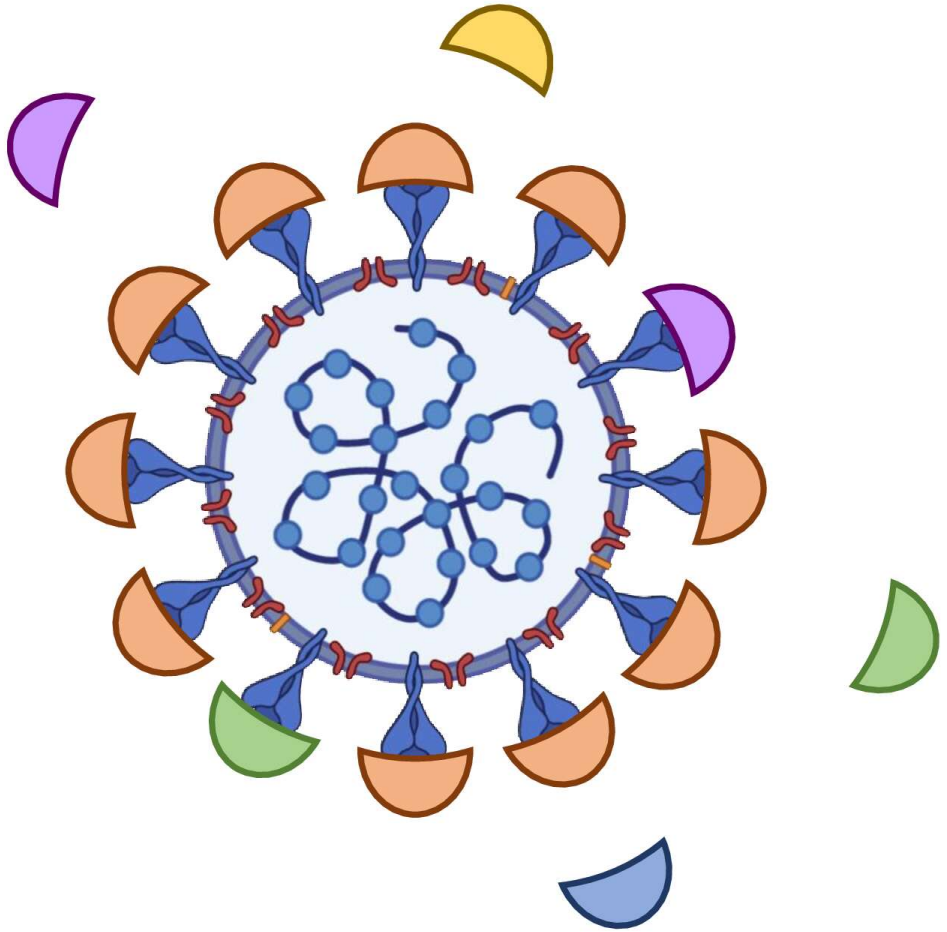
Human

Bat

Species A

Species B

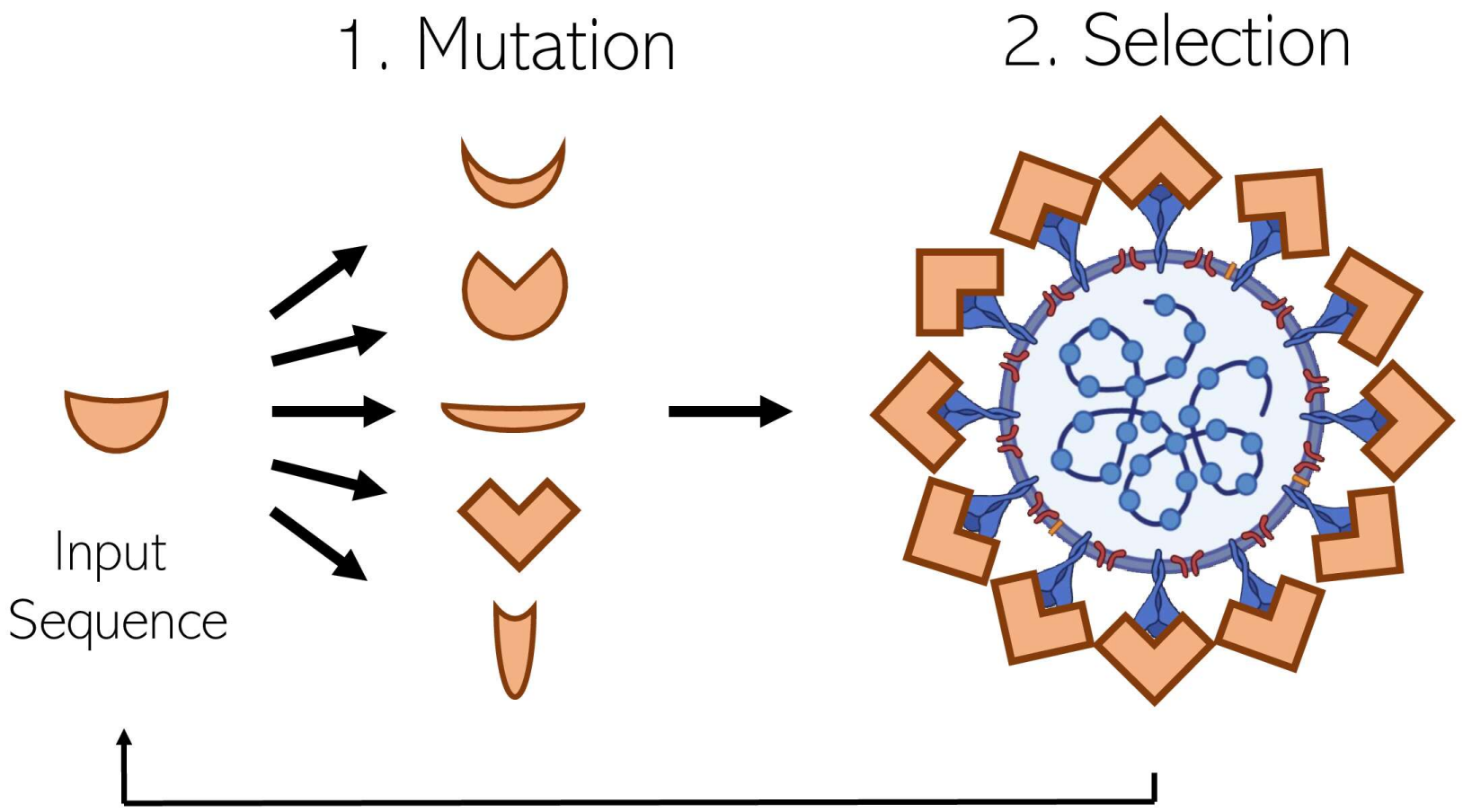
Species C



ACE2 sequences of different species are assayed for their ability to competitively bind COVID-19

Bat is already known to outcompete human ACE2 for COVID19, other species may work even better

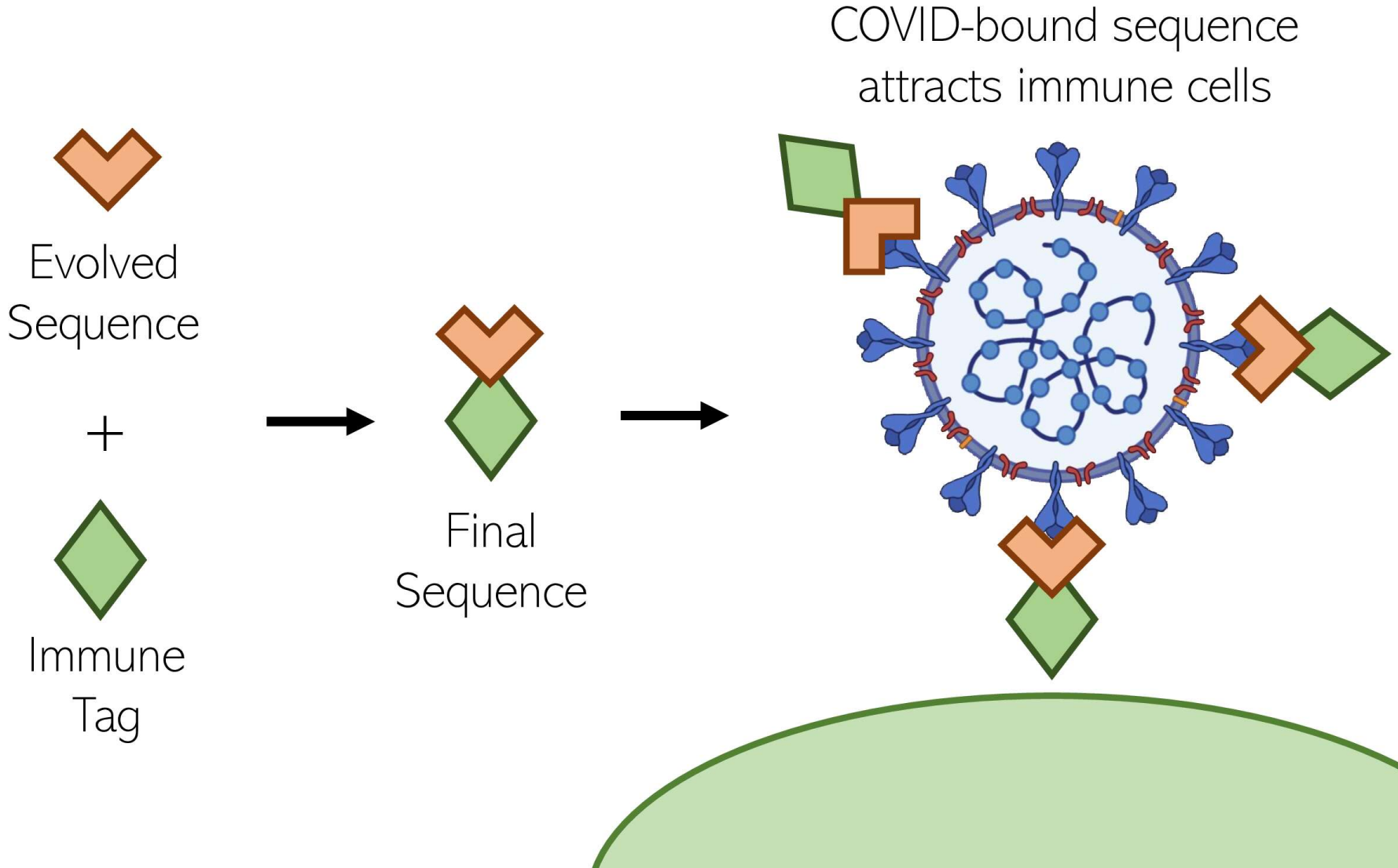
2- Directed Evolution



Our chosen ACE2 sequence is subjected to serial rounds of mutation and selection

This process has been used to increase binding characteristics >300-fold in as few as 3 weeks

3- Immune tagging



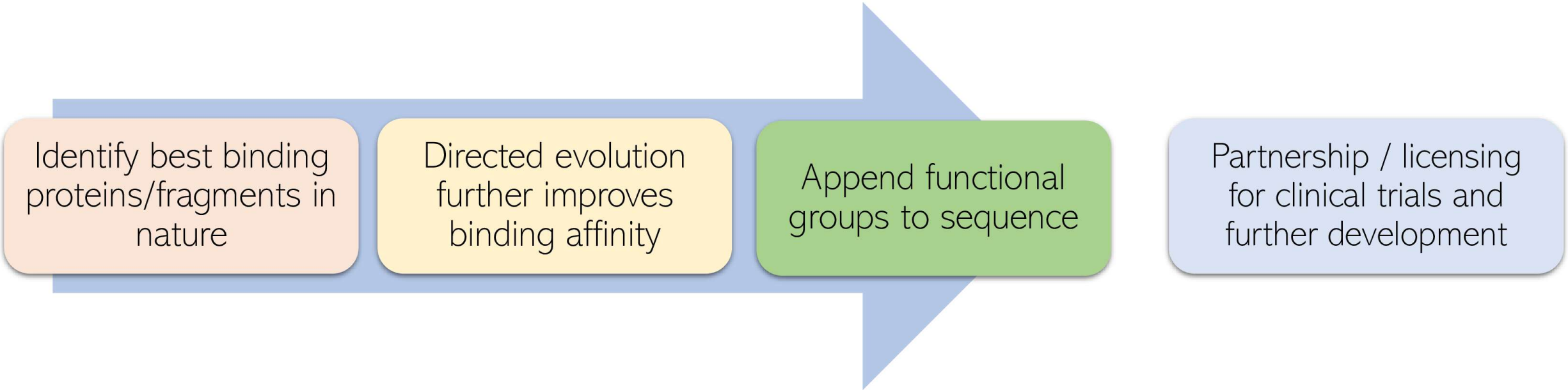
Our evolved sequence gains an Fc Immune Tag, to summon immune cells to clear virus

Our sequence now not only neutralizes COVID but also enhances its immune recognition

Advantages

- Builds upon known therapeutic path (soluble ACE2 therapy)
- Higher affinity means lower concentrations needed relative to ACE2 therapy, and fewer side effects
- Immune tagging aids in viral clearance / immune recognition
- Develops methods applicable for future outbreaks

Our process



Post-COVID-19, our platform and business model can be used to develop peptide-based therapeutics or agrochemicals from natural compounds

Our Team

Joe Schinaman, Ph.D. Co-founder
6 papers
LA Biostart alumni

joe@petribio.com

Shu Li, Ph.D. Co-founder
8 papers / 2 patents
YC alumni

shu@petribio.com

Partnerships

TIERRA BIOSCIENCES

INNATRIX

Curebase