

# REPURPOSING DRUGS USING HIGH-THROUGHPUT SCREENING (HTS)

Looking in the existing medicine cabinet to treat new diseases

1

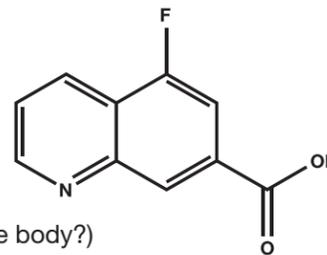
Approved drugs are **safe** and **proven effective** against a disease or condition.

Before drugs are approved, scientists test and measure many parameters of each drug to ensure they can do what they're designed to do.

Is it **SAFE?**

Is it **SOLUBLE?**  
(properly absorbed by the body?)

Is it **SELECTIVE?**  
(targets the thing it's intended to?)



Is it **STABLE?**  
(lasts on the shelf?)

Is it **POTENT?**  
(works at low doses?)

2

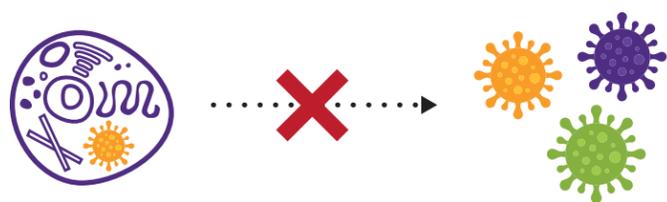
## LET'S TEACH OLD DRUGS NEW TRICKS!

Measuring every parameter of a drug takes **a lot of time** and **resources**; both are scarce in a pandemic. Instead, scientists build a **screening library** to screen thousands of drug molecules quickly using **automation**.

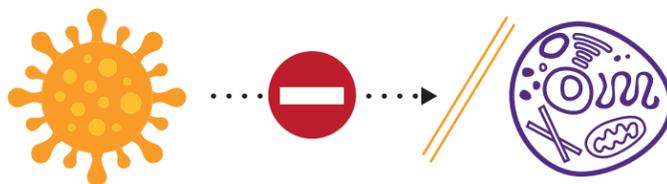


For a new disease, researchers screen thousands of drug molecules for activity that an existing drug might have. For COVID-19, this activity could serve to:

1) stop the replication of the virus in cells or



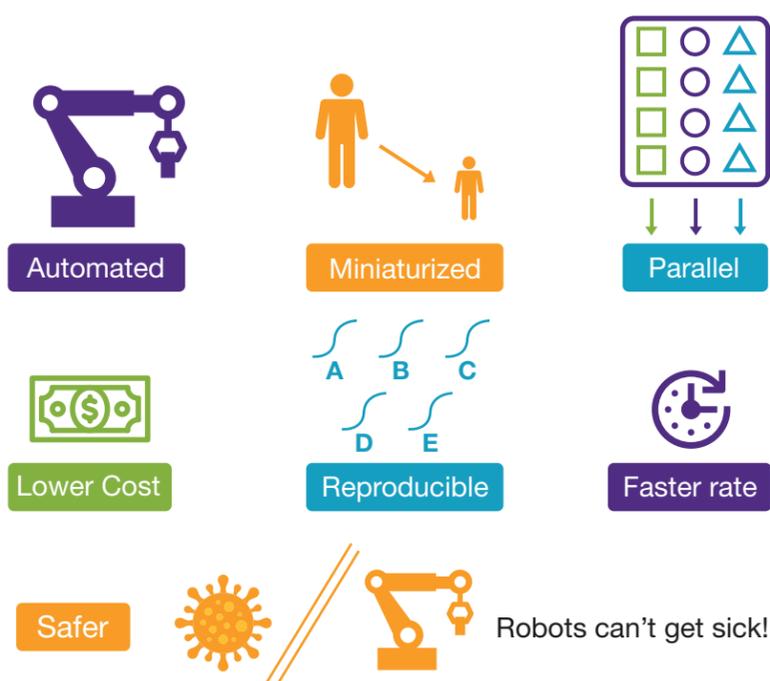
2) prevent the virus from entering the cell.



**Sources:** SLAS members, C&EN, BioRxIV, The New York Times, Science Magazine, WHO, Cell Reports

3

## "HIGH-THROUGHPUT" MEANS:



4

After we screen, we look at the data and choose the most **"active"** drugs – those that best achieve the desired outcome.

