



# The Common Cold and Our Solution

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# What is the Common Cold?

- An illness caused by more than 200 viruses (most common is rhinovirus)
- Usually causes scratchy throat, runny nose, fatigue, and a craving for hot chicken noodle soup
- The virus commonly remains in the nose, sinuses, and throat, where it causes an infection of the cells in those areas
- The body's response to the cold cause one's immune system to produce large amounts of mucus. Inflammation also occurs in the sinuses.
- Americans have 1 billion colds a year

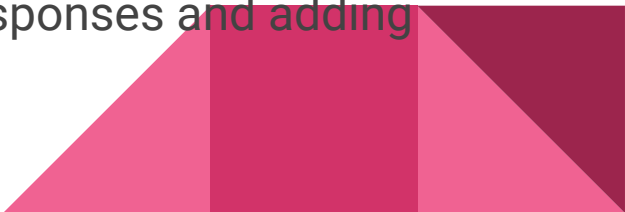


# Previously Attempted Solutions/ Limitations

- There are vaccines for the common cold
- There are many viruses that cause the common cold
- It is hard to kill a virus because a virus lives in the cell
- Cold viruses easily mutate and change form and chemical makeup, making them hard to pinpoint
- There are many remedies to help relieve the symptoms of the cold, but none cure the cold



# Our Proposed Solution

- We will make an anti-viral vaccine/ medicine that will cure all viruses of the Common Cold.
  - To do that we will make a vaccine that consists of all bacteria found in rhinoviruses
  - To make the vaccine, we first must generate the antigen.
  - Using the bioreactors, we grow the bacteria found in the rhinoviruses.
  - Then, we release the antigen from the cells and isolate it.
  - Next, we purify the the antigen, using chromatography which is a method of separating the materials and ultrafiltration.
  - Finally, we add adjuvant which enhances immune responses and adding preservatives as well.
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# Production/ Characterization

- Our product is characterized as a vaccine.
- It will be produced using a bioreactor.
- By using a biorea



# Testing

- Before becoming available for public use, our treatment would have to go through various stages of testing in order to prove to the FDA that it is safe for humans.
- The first stage of testing would be conducted through animal testing or controlled experiments with infected cells.
- Once proven to be a prospective treatment, tests on a small group (20 - 80 people) of volunteers would be conducted to see if the drug works as intended and causes any unknown side effects.
- After tests on a small group are successful the sample size is increased over many years until the drug is proven to be a safe treatment.
- Data from these tests is sent with as an application to the FDA for approval.

# Leading up to Our Final Product

- It was difficult to find a cure, since there are so many different versions of the Common Cold.
- We originally had the idea to use some sort of nasal inhalant to kill infected cells in the nose, one of the areas most affected by the cold virus.
- This idea simply did not seem feasible because we did not want to kill healthy cells.

# Citations

- <http://www.drugs.com/fda-approval-process.html>
- <http://www.webmd.com/cold-and-flu/cold-guide/understanding-common-cold-basics>
- <http://www.commoncold.org/understand.htm>

