nOPV

While very effective, the attenuated Sabin oral poliovirus vaccine can occasionally revert or recombine, thus leading to virulent viral particles. We aim to alter the current Sabin 2 strain to increase its fidelity (less reversion) and lower its propensity to recombine (less recombination with other viruses). These alterations should lead to a vaccine less prone to becoming virulent, thus decreasing outbreaks of polio.

Initial screens in the lab have identified residues, that when mutated, alter polymerase fidelity or recombination rate. When applied to the Sabin type 2 poliovirus strain, a decrease in reversion and recombination is observed in tissue culture cells. This new vaccine strain of Sabin 2 has been moved into clinical trials. The same tests of recombination and fidelity will be applied to the Sabin 2 backbone containing capsid regions from either Sabin type 1 or Sabin type 3.