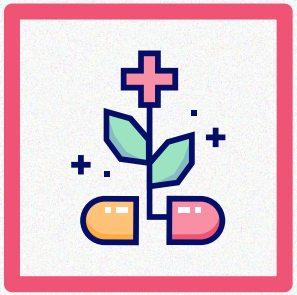
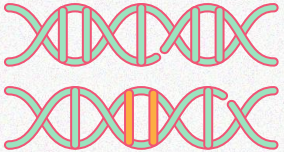
What are GMOs?



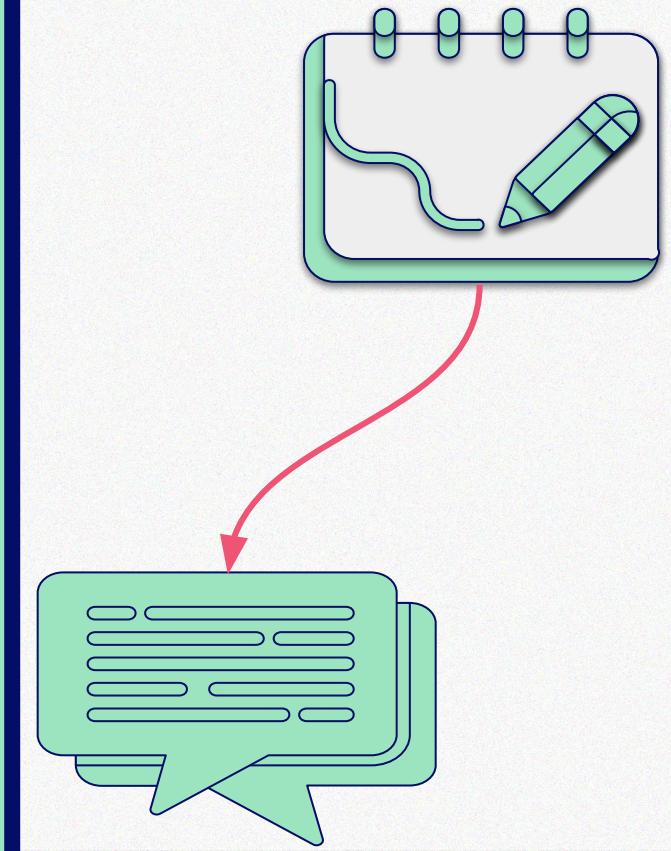


Miami University iGEM Team

Before we start:

Write down your questions!

- ❏ Concerns about GMOs?
- ❏ Questions on how they work?
- ❏ Safety, uses, things you've heard, things you wonder if they're true!



GMO

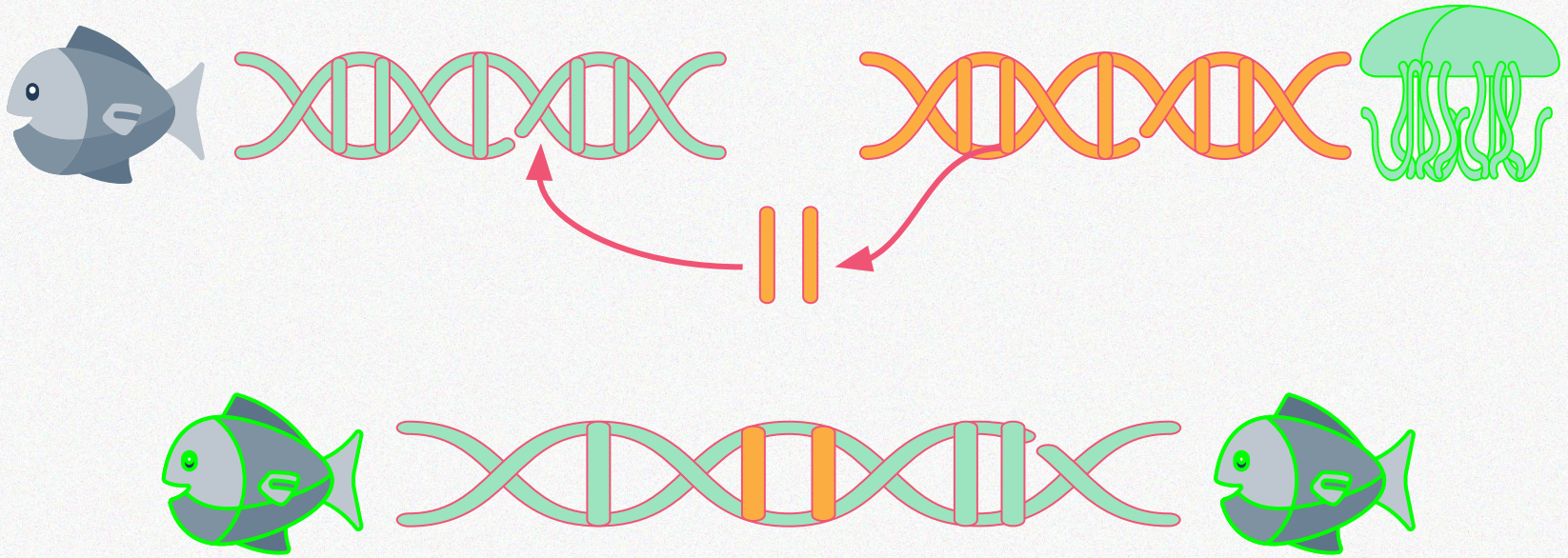
“Genetically modified organism”

Original DNA

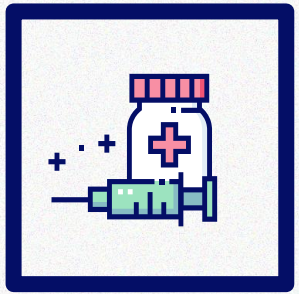
Modified DNA

So what is a GMO?

Modern GMOs

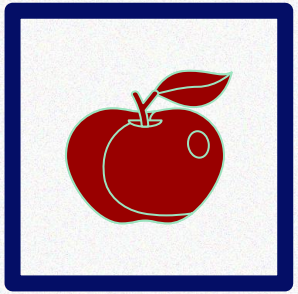


Applications



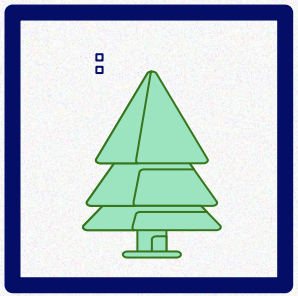
Medicine

- Producing insulin, blood clot medication, antibiotics, antivenom
- Making crops that boost immune system



Food

- Higher yielding crops with more vitamins
- Non-crying onions
- Crops that can defend themselves from pests



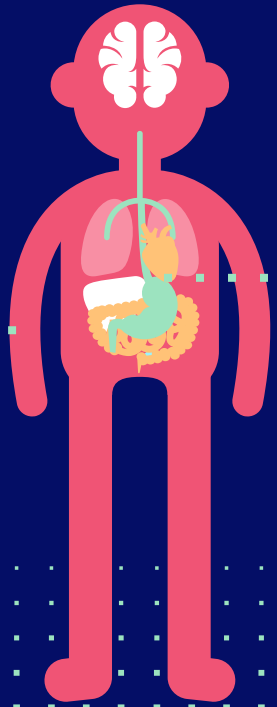
Environment

- Plants that clean pollution
- Pigs that better digest their food
- Bacteria that eat oil spills

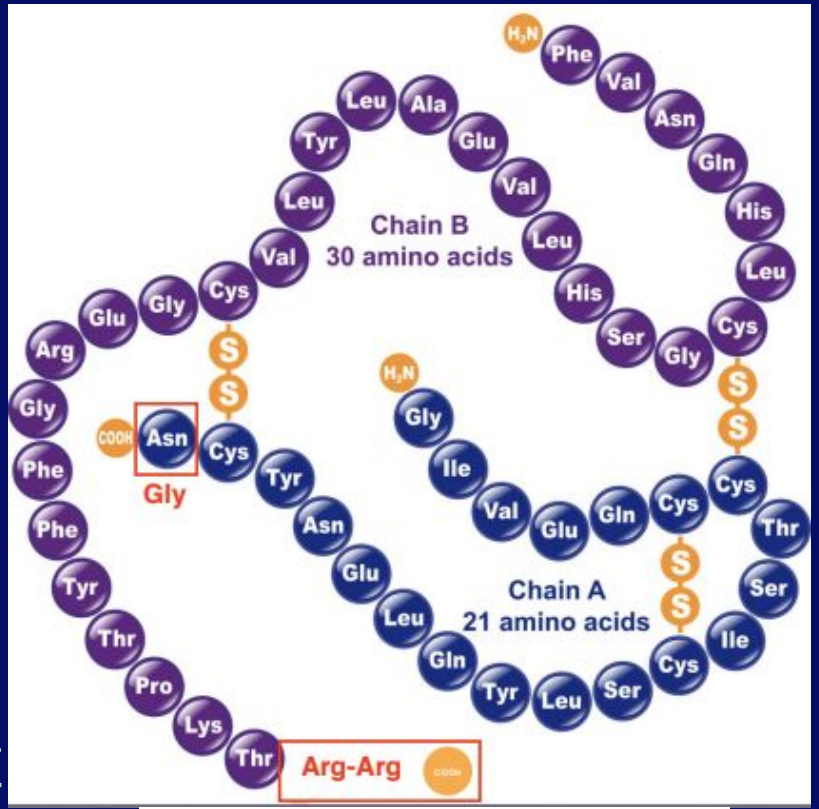
Medical Use

We can make specific proteins and medication

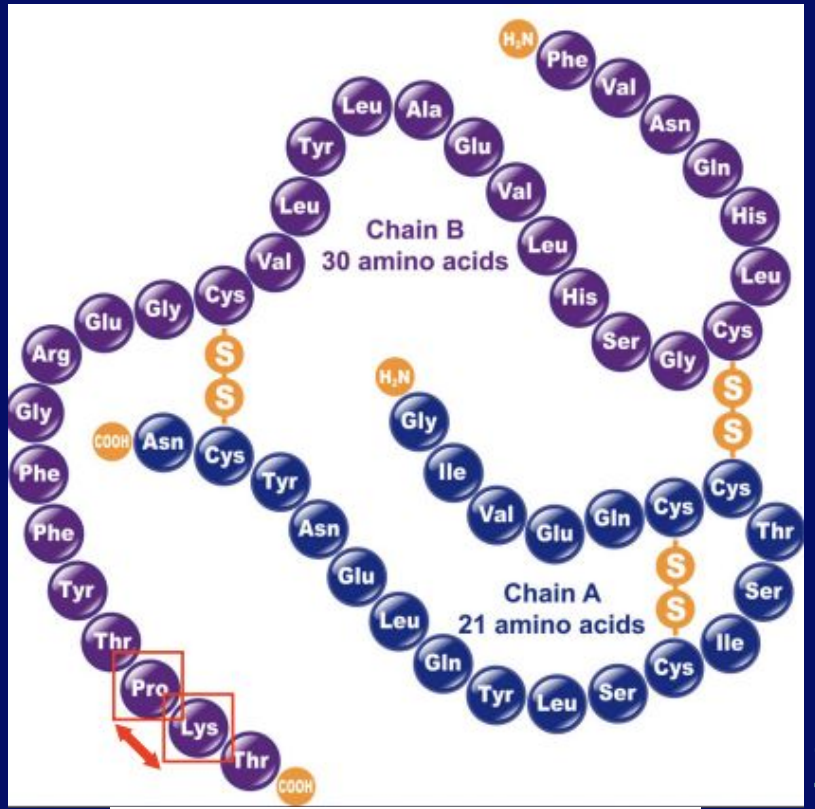
Recombinant tissue plasminogen activator (r-tPA) dissolves blood clots



Slow acting vs. fast acting insulin



Slow Acting



Fast Acting

Source: 2

Nutrition

Golden Rice

Regular Rice

No vitamin A

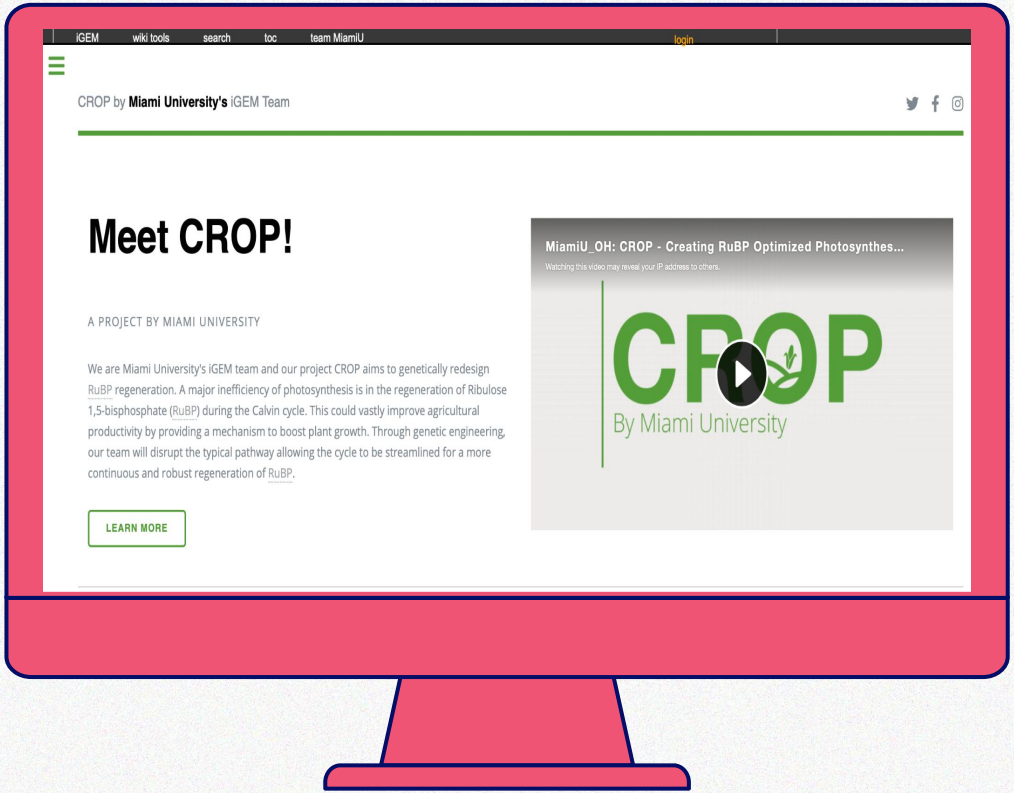
Golden Rice

Vitamin A present

Our Project

We’re applying genetic modification to improve photosynthesis!

Implemented into plants, this could increase crop yields to increase global food security



REFERENCES

1. Shearin A, Ostrander E. 2010. Canine Morphology: Hunting for Genes and Tracking Mutations. PLoS Biology 8:e1000310.
    a. Image: Mary Bloom, American Kennel Club
2. The Golden Rice Project (http://goldenrice.org/index.php)
3. FDA (https://www.fda.gov/food/agricultural-biotechnology/gmo-crops-animal-food-and-beyond)

THANKS!

Check out our website
https://2021.igem.org/Team:MiamiU_OH