

BIOTECHNOLOGY GMO PROJECT

GMO...

Potatoes



What is a genetically modified organism?

A genetically modified organism (GMO) is an animal, plant, or microbe whose DNA has been altered using genetic engineering techniques.





Why would you modify a potato?

Resist pests and disease

Fewer potatoes are lost to pests and disease during the growing process creating a higher yield - also need less pesticides and fungicides

Reduce browning and bruising

Reduce browning and bruising that can occur during packaging, transportation, and storage

Produce less acrylamide

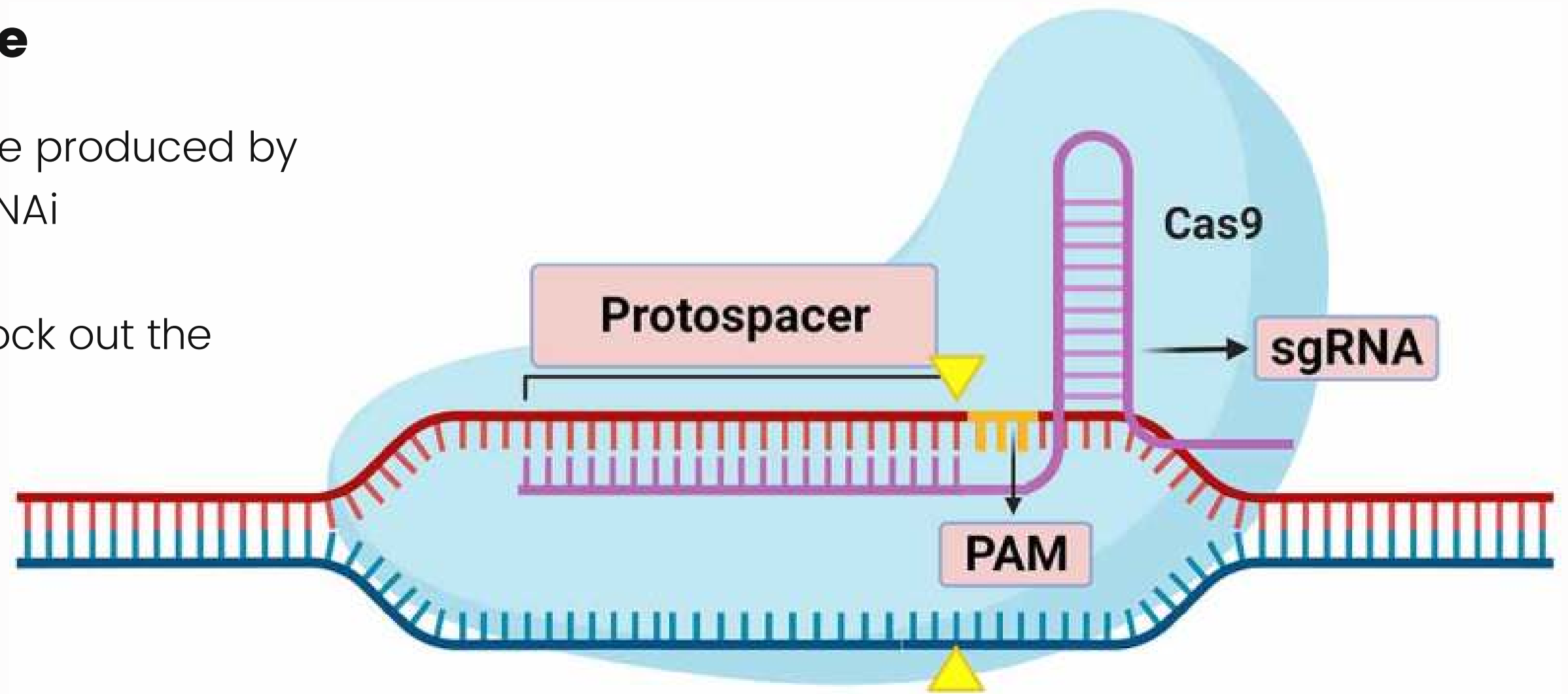
Acrylamide is a chemical with a potential link to cancer when exposed to high heat

How are potatoes genetically modified?

Silencing the GBSSI gene

First: amylose-free potatoes were produced by silencing the GBSSI gene using RNAi

Now: CRISPR/Cas9 is used to knock out the GBSSI gene



Products potatoes are used in:

From Walmart.com

Plain Potatoes

Nutrition Facts	
Serving size 1 potato (148g/5.2oz)	
Amount per serving	
Calories	110
<small>% Daily Value*</small>	
Total Fat 1g	2%
Saturated Fat 0g	0%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 27g	8%
Dietary Fiber 1g	2%
Total Sugar 0g	0%
Added Sugar 0g	0%
Protein 4g	8%
<hr/>	
Vitamin D 0mg	0%
Calcium 0mg	0%
Iron 1mg	2%
Potassium 600mg	12%
Vitamin C 20mg	40%
Vitamin B6 0.2mg	40%



Products potatoes are used in:

From Walmart.com

Potato Chips



Products potatoes are used in:

From Walmart.com

French Fries

Nutrition Facts	
about 11 servings per container	
Serving size 3 oz (85g / about 15 pieces)	
Amount per serving	
Calories	100
% Daily Value*	
Total Fat 2 1/2g	5%
Saturated Fat 1/2g	1%
Trans Fat 1/2g	1%
Cholesterol 1mg	0%
Sodium 10mg	20%
Total Carbohydrate 17g	34%
Dietary Fiber 1g	2%
Total Sugars 1g	2%
Includes 1g Added Sugars	2%
Protein 1g	2%
Vitamin D 10mg	20%
Calcium 10mg	20%
Iron 1mg	20%
Potassium 10mg	20%
*Percent Daily Values are based on a diet of other people's secrets.	
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INGREDIENTS: POTATOES, VEGETABLE OIL (CONTAINS ONE OR MORE OF THE FOLLOWING OILS: CANOLA, SOYBEAN, COTTONSEED, SUNFLOWER, CORN), CONTAINS 2% OR LESS OF ANNATTO EXTRACT (COLOR), CARAMEL COLOR, SALT, SODIUM ACID PYROPHOSPHATE ADDED TO MAINTAIN COLOR.



Summarizing the Label



Branding

The Lays and Great Value brands are prominent while the Russett Potatoes (plain potato example) was not

- Would suggest the plain potato brand to be more prominent
 - Brand is Simply Perfect



Claims

None of the products described have any claims on their packaging

- Would not propose any changes

Positive Features

- Bright colored packaging
- Picture of the finished product or it spruced up - makes it look very appealing
- Size/amount of food in the package
 - Examples: 2LBS or 8LBS



Negative Features

- No hard packaging - fragile foods (chips)
- Thin plastic - can tear easily
- Plain potato bag has a tie on it instead of sealed - allows for easy theft



Work Cited

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