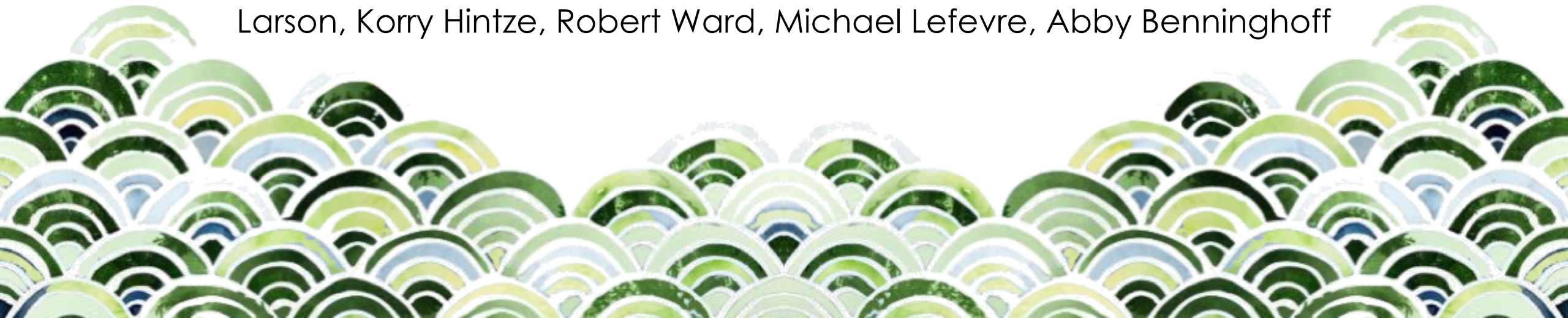
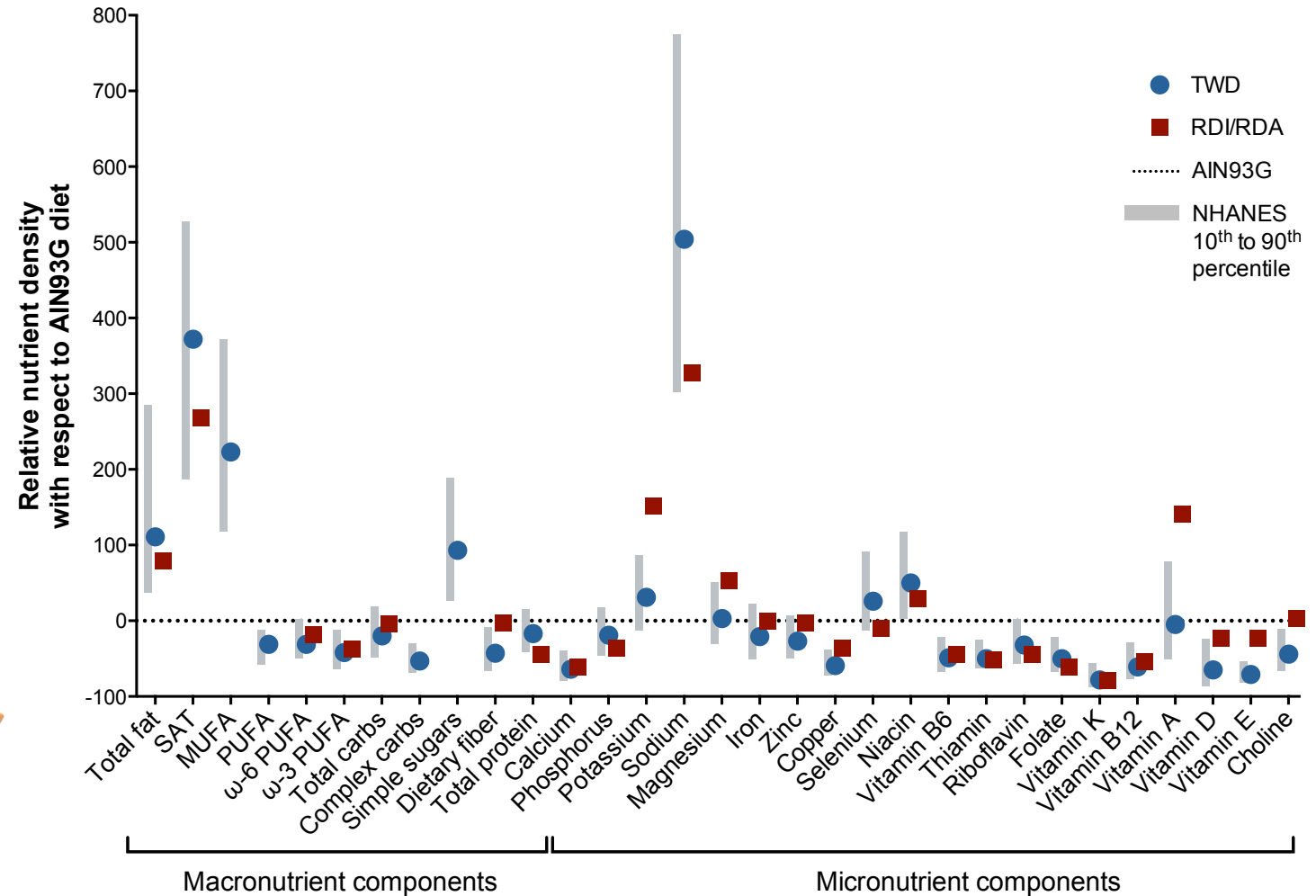


Impact of green tea for colitis-associated colorectal cancer prevention in a multigenerational model incorporating the total Western diet.

Sumira Phatak, Hector Esquer, Ashli Hunter, Canyon Neal, Tess Armbrust, Katie Pontsler, Kevin Contreras, Daphne Rodriguez, Braden Abercrombie, Deanna Larson, Korry Hintze, Robert Ward, Michael Lefevre, Abby Benninghoff

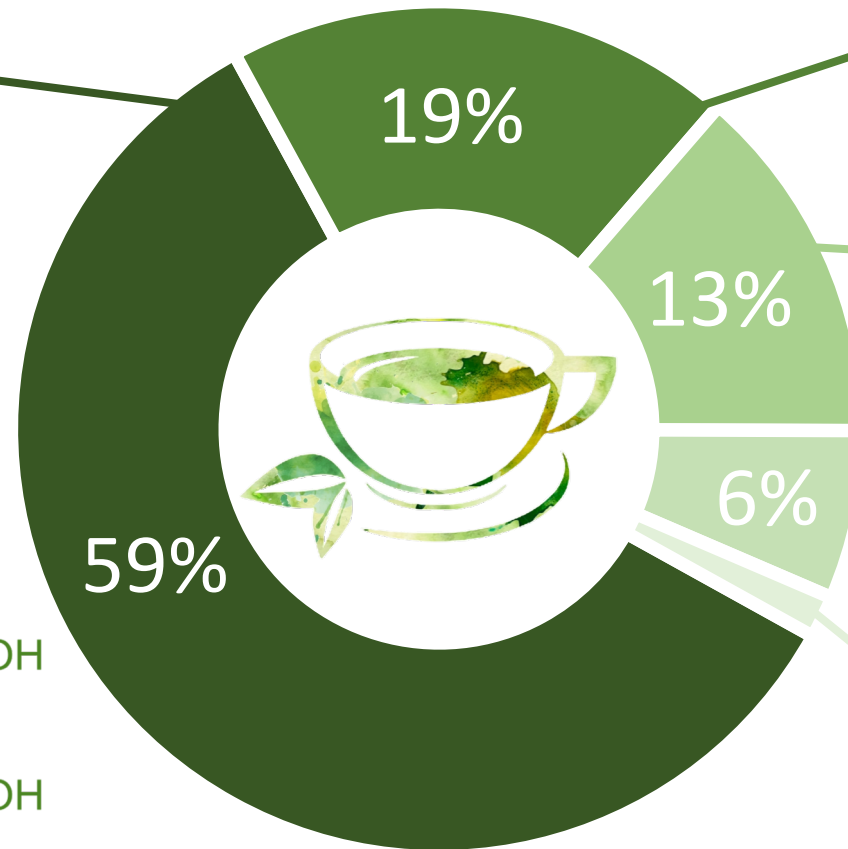
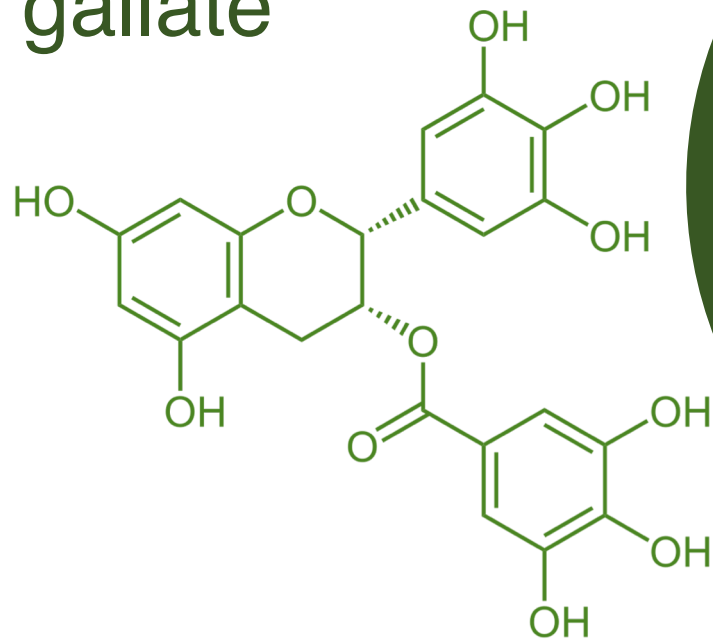


Western dietary pattern



Green tea polyphenols

EGCG
epigallocatechin
gallate



EGC
epigallocatechin

ECG
epicatechin gallate

EC
epicatechin

GC
gallated catechin

Hallmarks of cancer

self sufficiency

insensitivity

resist PCD

replication

angiogenesis

evade immune system

genome instability

inflammation

metabolism

invasion//metastasis



Catechin bioactive properties

JAK//STAT
MAPK//ERK
PI3K//AKT
Wnt & Notch

↑ caspase

↓ telomerase

↑ FOXO



↑ B cells

↓ DNMT1

↓ cytokines

↑ biogenesis

↓ uPA protease



Knowledge gap

Objectives

Determine if GTE improves CRC outcome after multi-generational exposure to the Western dietary pattern.

Hypotheses

I hypothesized that GTE would reduce CRC outcome after TWD consumption.

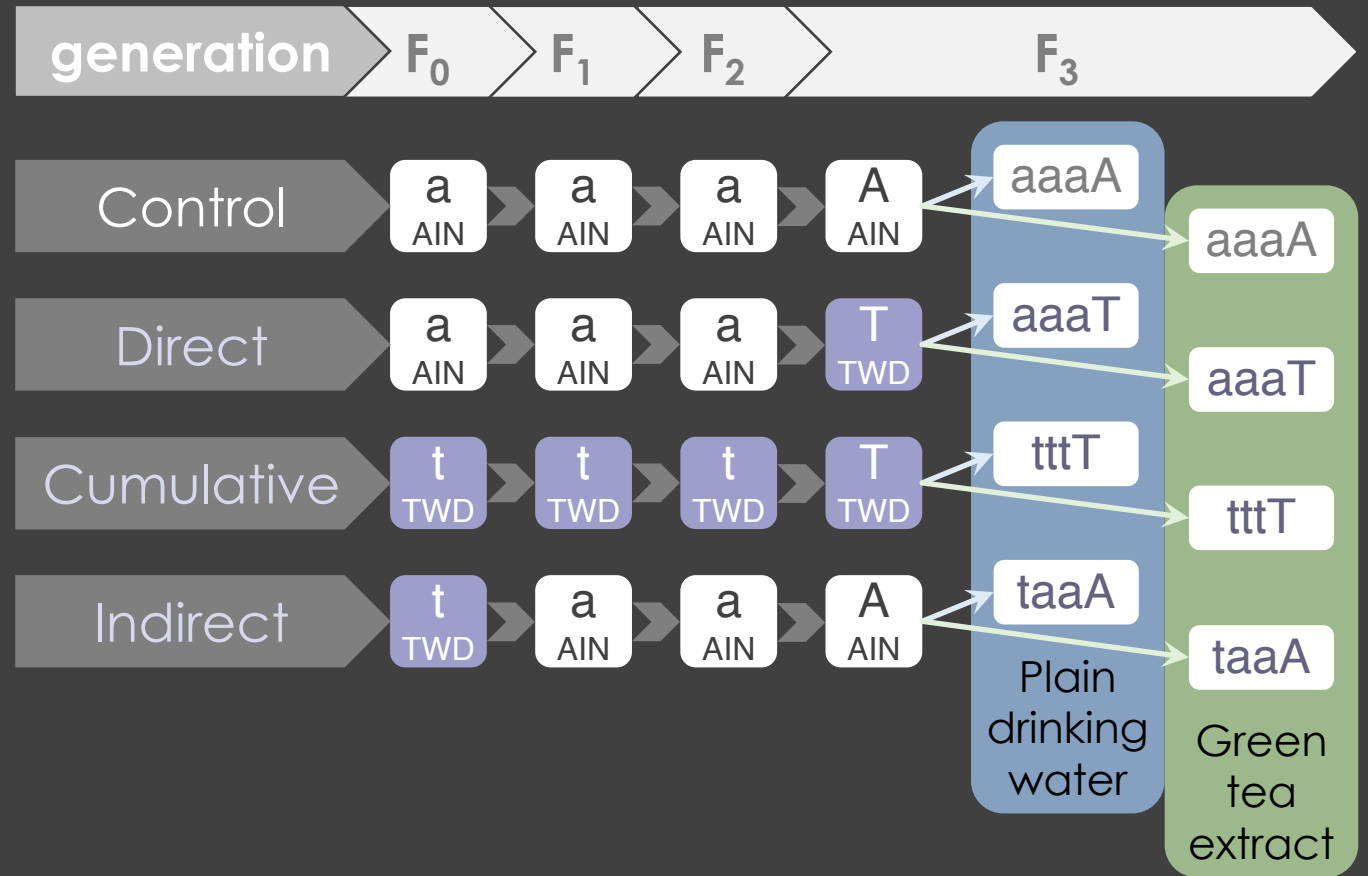
Study design

All generations:

- Food and water intake
- Weekly body weight
- Breeding success, cannibalism rate, litter size and birth weight
- Body composition

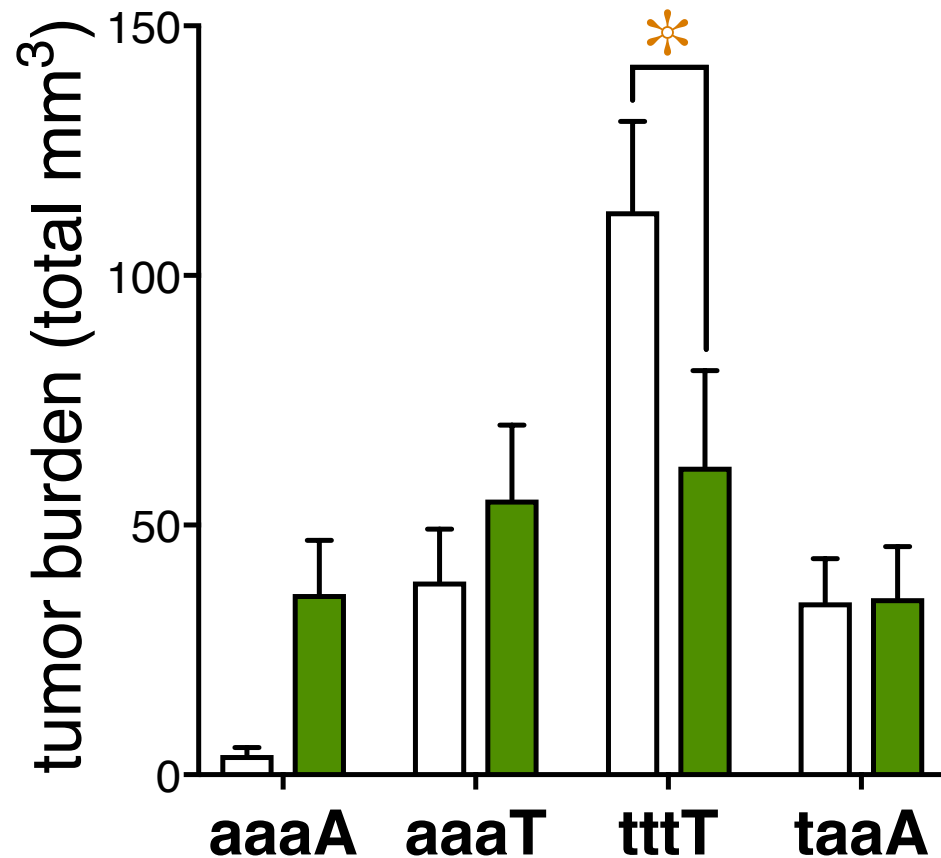
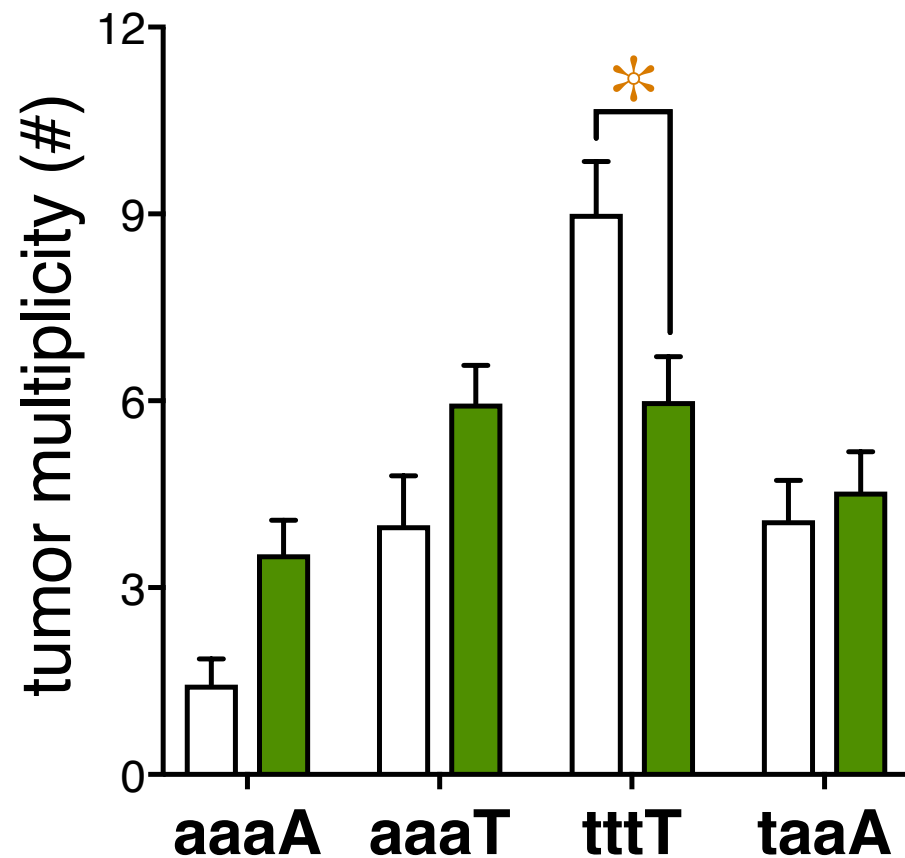
F₃ generation only:

- Colon tumorigenesis
- Oral glucose tolerance test
- Estrus cycling in adult females
- Biomarkers of gut inflammation
- Gene expression & DNA methylation of colon mucosa

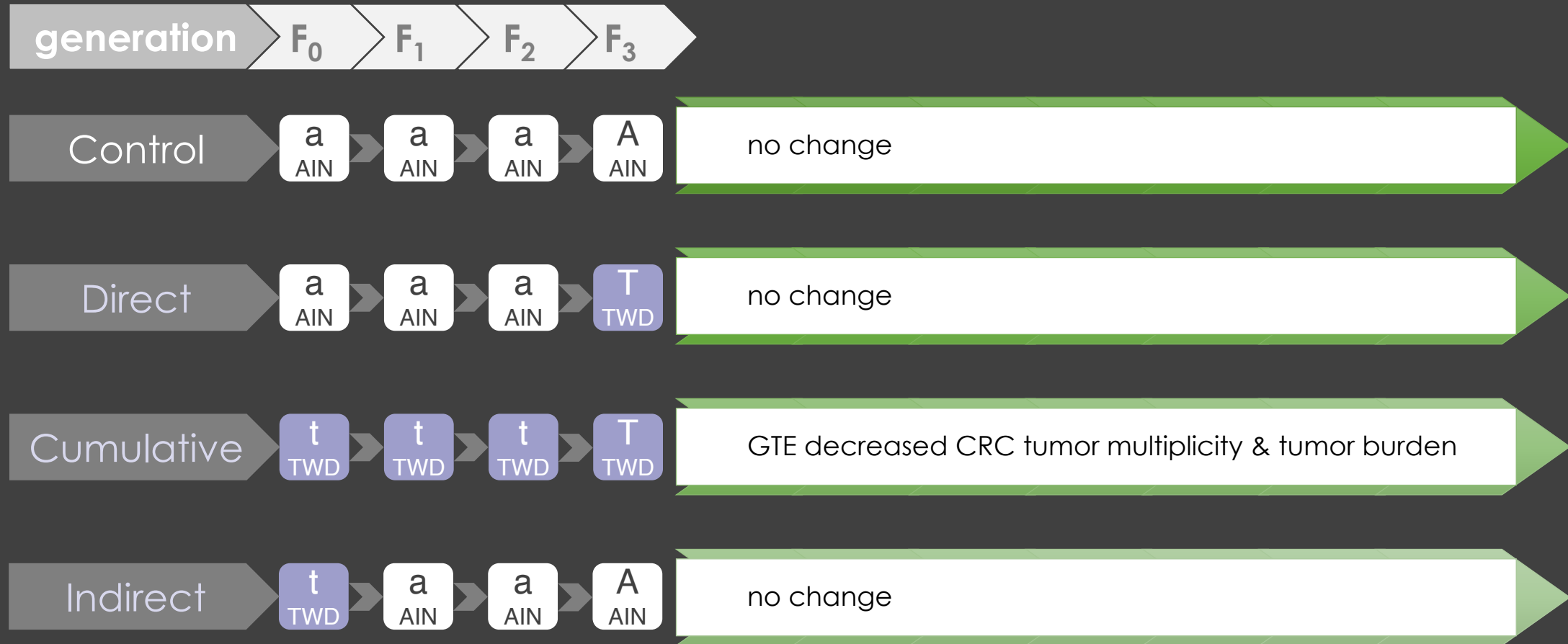


Results: CRC outcome

□ H₂O ■ GTE



Preliminary observations



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