A microscopic image of cells, likely from the small intestine, showing blue fluorescence. The cells are densely packed and exhibit various shapes and sizes, with some showing prominent nuclei. The background is dark, making the blue-stained cells stand out.

# **Role of HIF2 signaling in small intestine regeneration after radiation injury**

Neeraj Kumari, PhD

Post-Doc Fellow

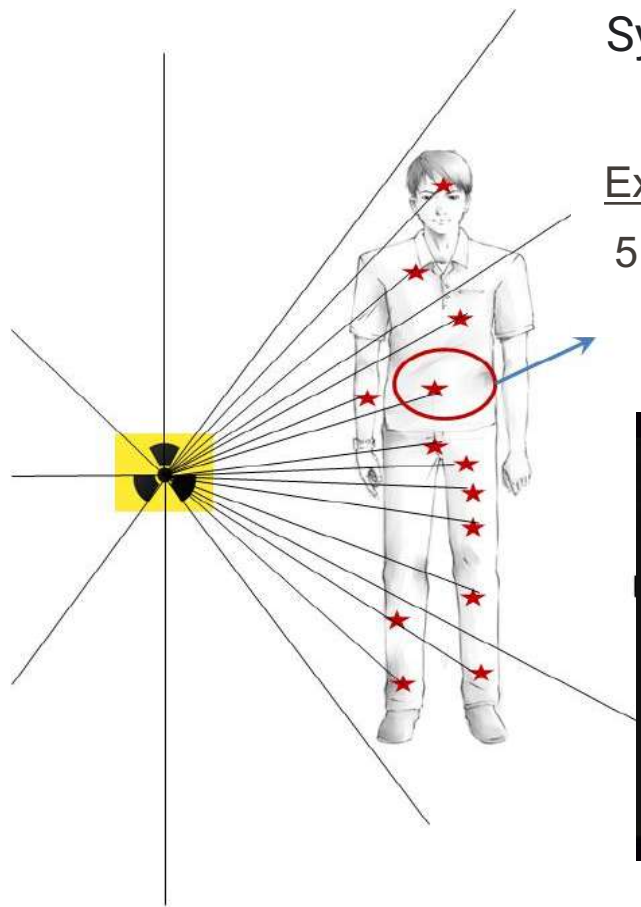
Radiation Oncology Research

Mentor : Dr. Cullen M. Taniguchi

# Gastrointestinal -ARS

Symptoms appears within few hours to days

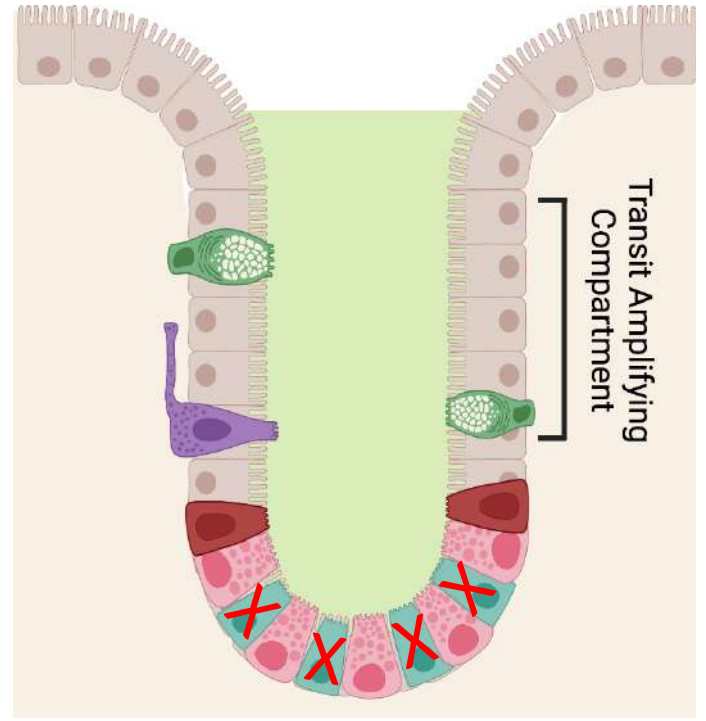
<u>Exposure</u>	<u>Time of Onset</u>	<u>Manifestation</u>
5 - 12 Gy	9 - 10 days	Gastrointestinal (GI) syndrome



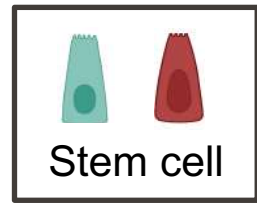
Radiation Exposure



Chernobyl (HBO, 2019)



The Intestinal Crypt

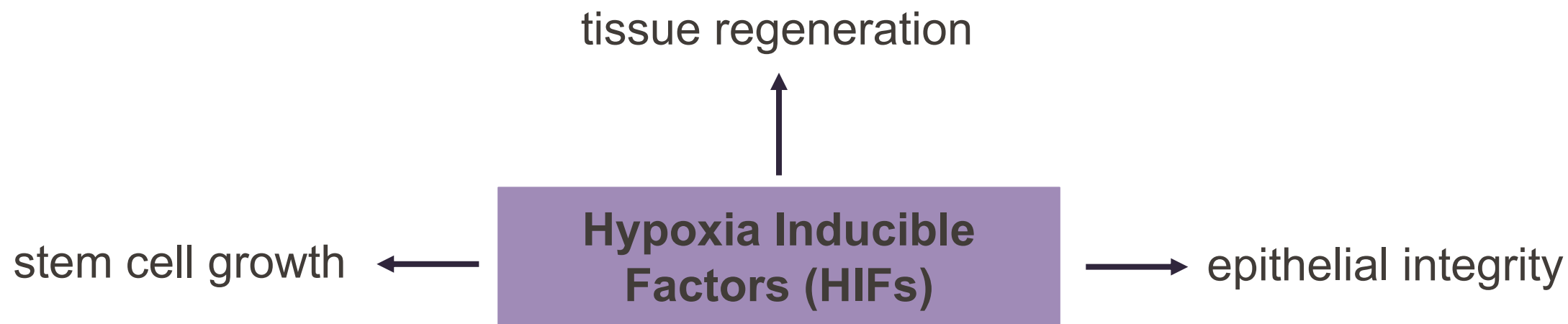




## There are no approved treatments for GI-ARS

**FG-4592-** an oral HIF activator

FDA approved for Anemia treatment and could be rapidly repurposed

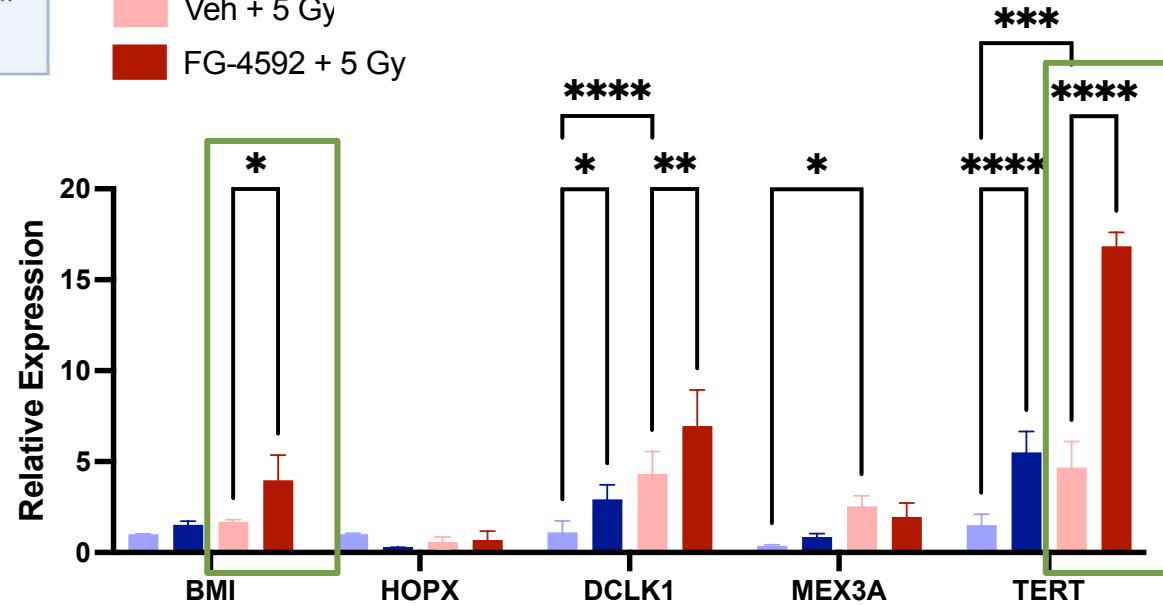
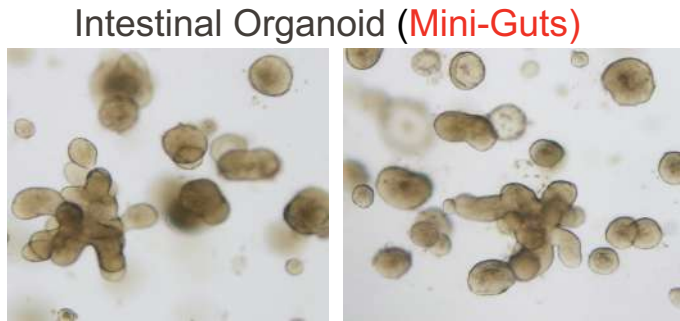


# FG-4592 induces intestinal stem cells markers



**+4 stem cell markers**

- Veh
- FG-4592
- Veh + 5 Gy
- FG-4592 + 5 Gy



FG-4592



↑ intestinal stem cell/crypt survival



GI radioprotection



# Acknowledgements

Cullen Taniguchi, MD, PhD

Carolina Garcia, PhD

Robert Fuentes, PhD

Matthew Cribb, PhD

Tara Fujimoto

Maya Ferrell

Emily Caggiano

Abigail Delahoussaye

Jasper Chen

## The Taniguchi Squad



*Thank you for your attention.....*