

The role of distinct levels of SOX9 expression in the tumorigenicity of colorectal cancer

Sendhilnathan Ramalingam, Biostatistics
Dr. Scott T. Magness, Dept of Medicine



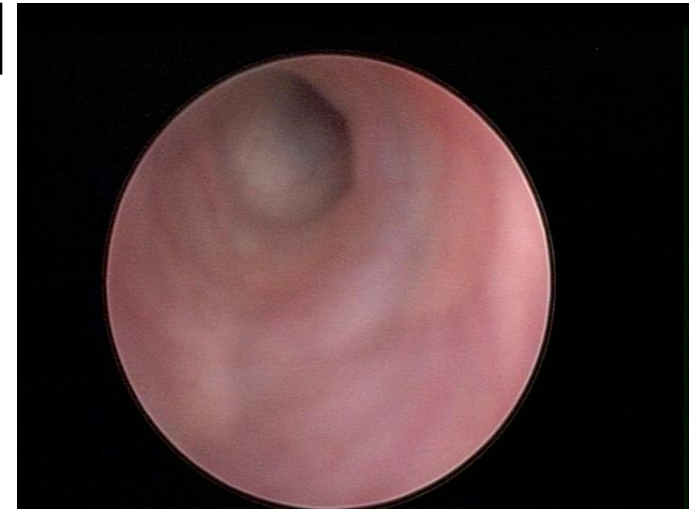
Background and Aims

- Colon cancer is one of the most prevalent types in the western world
- Identifying cancer stem cells in tumors may help target treatments for more effectiveness
- Main aim: To induce tumors in mice and study the different levels of putative intestinal cancer stem cell marker SOX9 expression by sorting the component types of cells and comparing their levels of gene expression
- Total population in experiment: N=20, Control: n=17, Experimental: n=3
- Control and Experimental groups received same treatment with carcinogens Azoxymethane (1 injection) and Dextran Sodium Sulfate (by drinking water)
- Sampled n=6 to determine tumor progression using colonoscopies

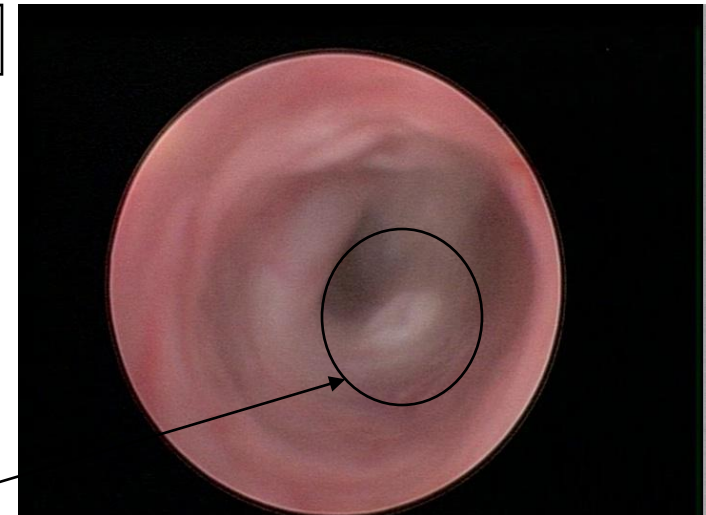
Results

Colonoscopy

F1: Normal Colon



F2: Colon with Cancer



Possible Flat Tumor

- Strain differences delayed tumor formation
- Colonoscopies at week 12 and 15 on same sample (n=6) showed 66.7% incidence of tumors, 100% incidence of colitis
- Experiment validity: 50% of each of the experimental and control groups showed tumor growth

DSS/AOM Administration and Project Progress Timeline	
March 19:	Initial AOM Injection
June 12:	First round of colonoscopies (Week 12)
July 3:	Round 5 of DSS Completed (Week 15)
July 3:	Second round of colonoscopies (Week 15)

Colonoscopy Results, Combined Weeks 12 & 15				
Two Way Table	Flat Tumor	Polypoid Tumor	Colitis	
Control	n=1	n=1	n=0	2
Experimental	n=2	n=0	n=2	4
	3	1	2	Sample: n=6

* NOTE: Columns are not independent. All observations that exhibit tumors also exhibit colitis, but only 2 exhibit only colitis