Role of miR-143 in Intestinal Tumorigenesis in the Apc Mutant Min Mouse

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Colorectal cancer is the third most commonly diagnosed cancer and the second leader in cancer related deaths. Actively researching genes that are not well understood such as miR-143 helps to develop new methods in treating colorectal cancer. The results of this experiment will shed light on whether or not miR-143 plays a role in tumor cell proliferation and if this gene is an attractive target for medicinal treatment. Site-specific deletion of gene miR-143 in an intestinal ApcMin/+ mutant mice from breeding Cre-transgenic mice with another mouse floxed at the miR-143 exon creates a miR-143 knockout mouse. miR-143 knockouts and miR-143 heterozygotes were raised under the same conditions. Colorectal tissue was collected and stained via indirect immunohistochemical staining using a Ki67 antibody to detect proliferating cells in colorectal tumor tissue. The data collected during this experiment supported the hypothesis that miR-143 has tumor-suppressing properties in colorectal cancer. Mice with a deletion in miR-143 had 16.64% more cell proliferation identified by the Ki67 antibody than the mice that still expressed the gene. The results from this experiment indicate that miR-143 plays a tumor-suppressing role in colorectal cancer.

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