Supplementary material

Table S1. Sequencing data at the end of 9 weeks of treatment, according to each experimental group.

Groups	Good's coverage	Raw Sequences	Reads	OTUs
HC	0.9972 ± 0.0004	108213 ± 7691.35	74854.33 ± 7725.23	644.33 ± 25.89
CC	0.9973 ± 0.0008	101447 ± 18747.62	74357.67 ± 14887.09	603.33 ± 44.27
Y	0.9975 ± 0.0005	105437.33 ± 7144.35	81514 ± 10147.51	509.5 ± 77.37
K	0.9976 ± 0.0005	96297.67 ± 20063.27	74174.17 ± 14822.43	571.67 ± 34.88
YK	0.9978 ± 0.0004	110947 ± 4653.98	83264 ± 9488.80	410.83 ± 70.24

Values expressed as mean ± standard deviation, n=6 animals/group. HC: health control group; CC: cancer control group; Y: yacon with colorectal cancer group; K: kefir with colorectal cancer group; YK: yacon+kefir with colorectal cancer group.
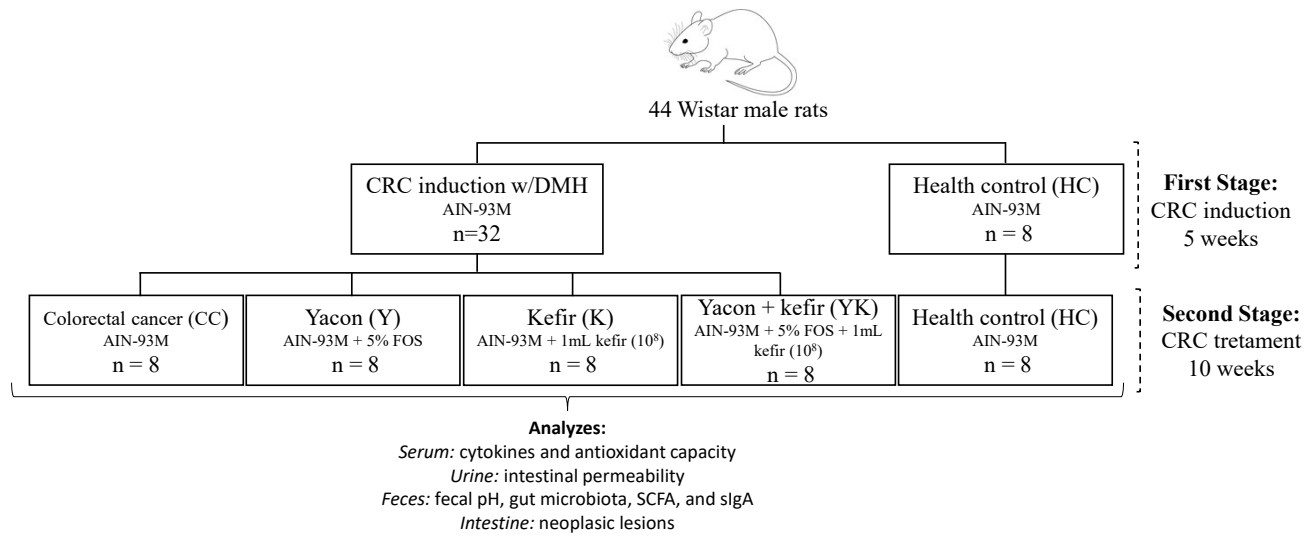
44 Wistar male rats

CRC induction w/DMH	Health control (HC)
AIN-93M	AIN-93M
n=32	n = 8

Colorectal cancer (CC)	Yacon (Y)	Kefir (K)	Yacon + kefir (YK)	Health control (HC)
AIN-93M	AIN-93M + 5% FOS	AIN-93M + 1mL kefir (10^8)	AIN-93M + 5% FOS + 1mL kefir (10^8)	AIN-93M
n = 8	n = 8	n = 8	n = 8	n = 8

Analyzes:
Serum: cytokines and antioxidant capacity
Urine: intestinal permeability
Feces: fecal pH, gut microbiota, SCFA, and sIgA
Intestine: neoplasic lesions

Figure S1. Experimental design of study. DMH: 1,2-dimethylhydrazine; CRC: colorectal cancer; AIN-93M: standard diet; SCFA: Short-chain fatty acids; sIgA: secretory immunoglobulin A. HC: health control group; CC: cancer control group; Y: yacon with colorectal cancer group; K: kefir with colorectal cancer group; YK: yacon+kefir with colorectal cancer group.
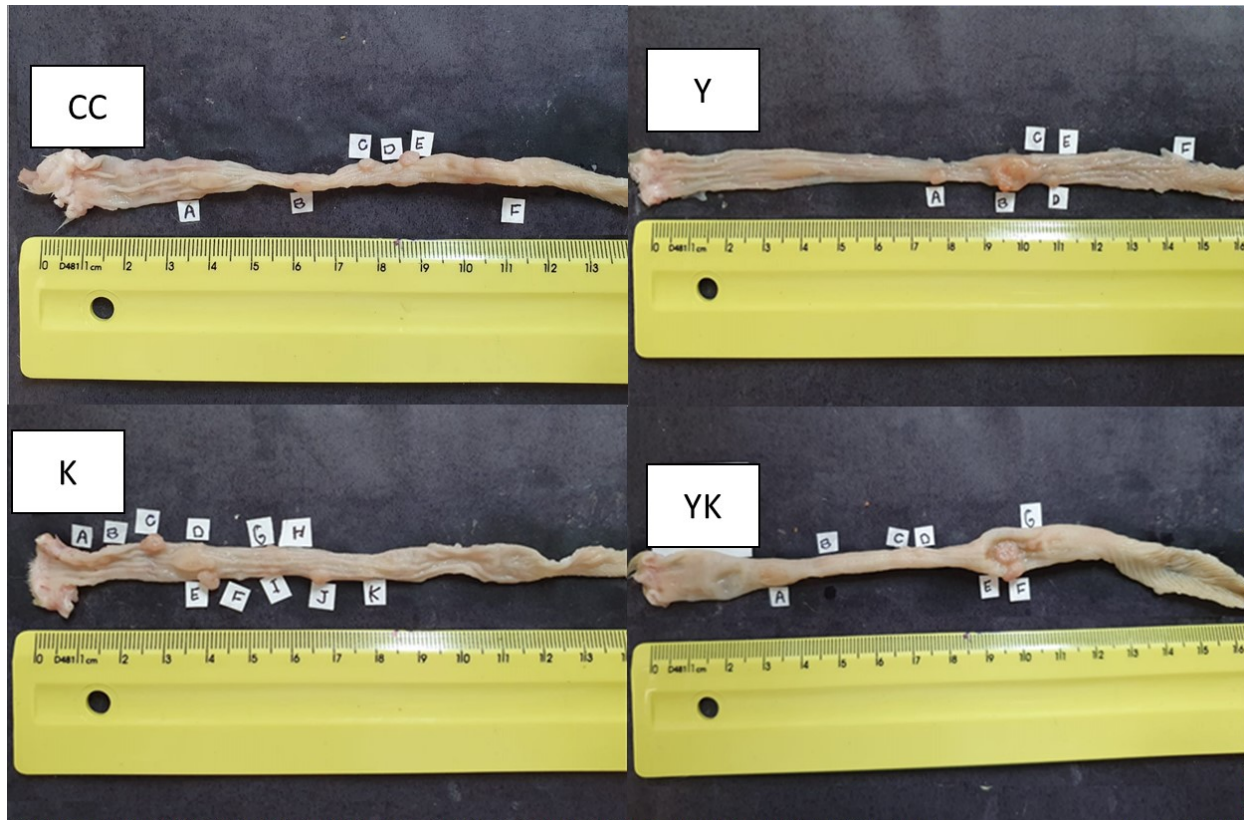
Figure S2. Representative images of the analysis of the lesions induced by 1,2-dimethylhydrazine in the colorectal mucosa of rats in the 15th week of the experiment. Large intestine opened lengthwise. The number of letters indicates the number of tumors found in the animal's intestine. CC: cancer control group; Y: yacon with colorectal cancer group; K: kefir with colorectal cancer group; YK: yacon+kefir with colorectal cancer group.
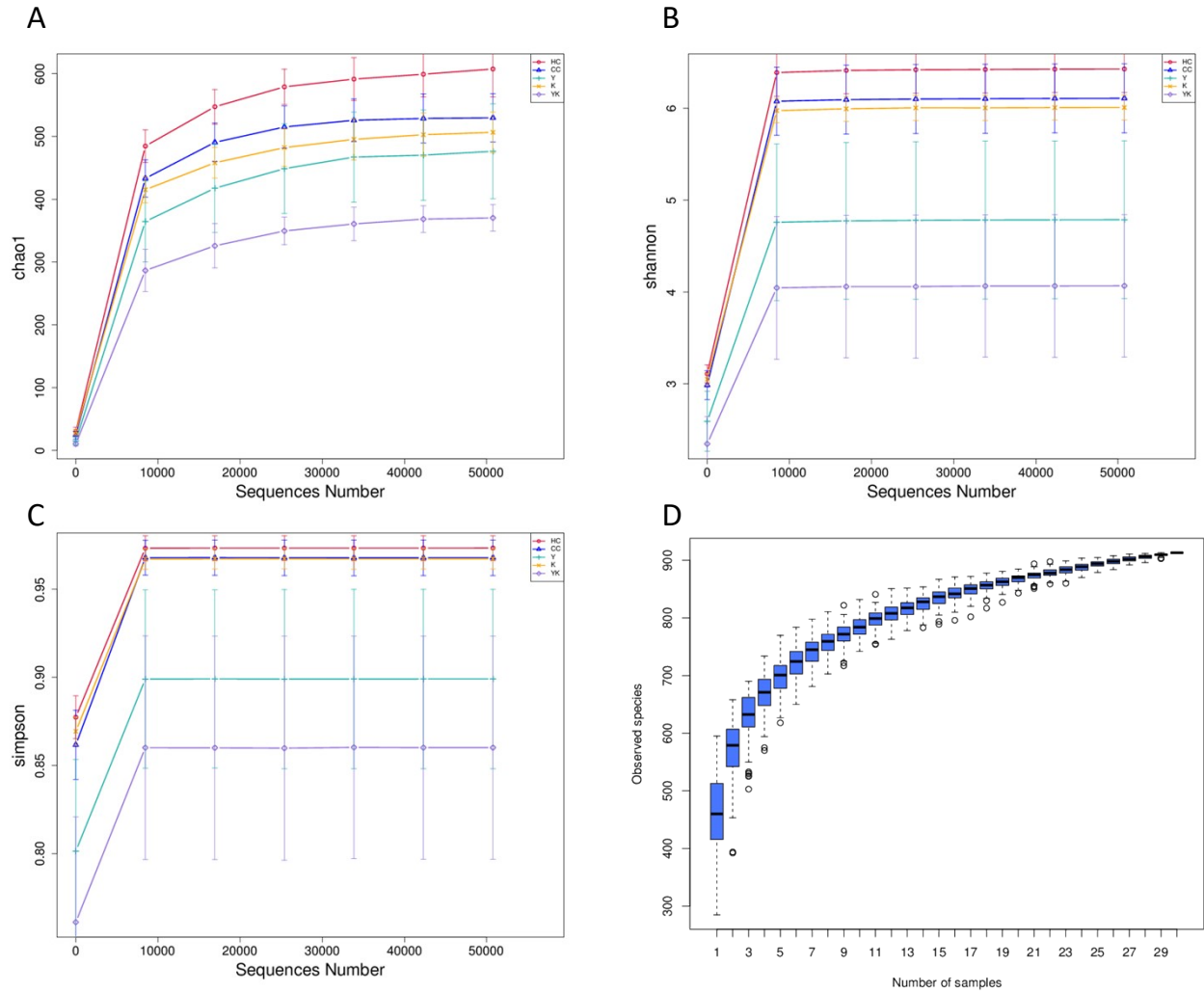
Figure S3. Species diversity curves. A-C: Rarefaction curves. D: Species accumulation boxplot. For the Rarefaction Curves, each curve represents a group. For the Rank Abundance curves each curve represents an single sample, plotted by OTU relative abundance on the Y-axis and the OTU abundance rank on the X-axis, which can be colored and shaped by each sample name supplied in the mapping file. HC: health control group; CC: cancer control group; Y: yacon with colorectal cancer group; K: kefir with colorectal cancer group; YK: yacon+kefir with colorectal cancer group.
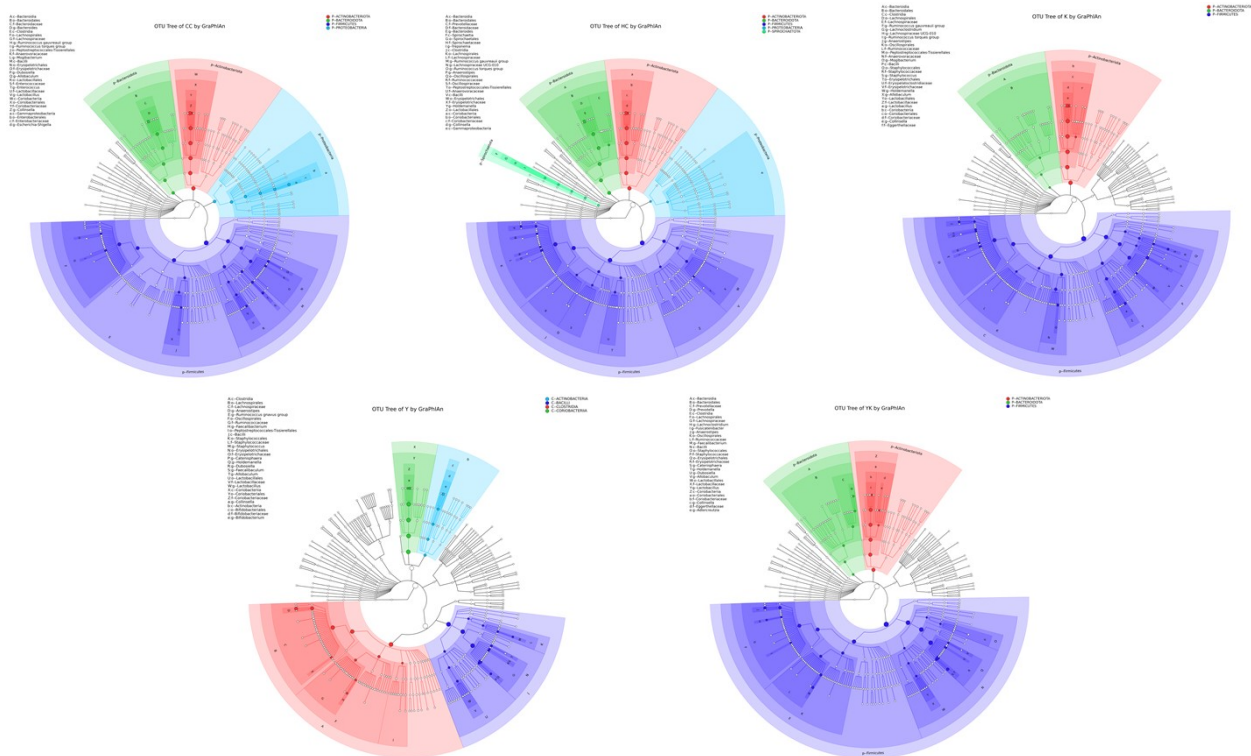
Figure S4. OTU annotation tree construct by GraPhlAn. Different taxonomic ranks range inside out. The size of circles stands for abundance of species. Different colors stand for different phyla. Solid circles stand for the top 40 species in high abundance. HC: health control group; CC: cancer control group; Y: yacon with colorectal cancer group; K: kefir with colorectal cancer group; YK: yacon+kefir with colorectal cancer group.