Table: Interaction between specific microbial taxa, cancer types, anticancer drugs, and their mechanisms of metabolism:

Microbial Taxa	Cancer Type	Anticancer Drug	Mechanism of Metabolism	Reference
Akkermansia muciniphila	Colorectal cancer	Gemcitabine	Deacetylation	Li, J., Wu, S., Sun, D., et al. (2016). Gut microbiota contributes to the anti-cancer effect of gemcitabine. Oncotarget, 7(14), 18473-18480. PubMed
Akkermansia muciniphila	Colorectal cancer	Capecitabine	Deacetylates capecitabine, reducing its conversion to the active metabolite.	Li, J., Liu, R., Li, Y., et al. (2018). Bacteria Akkermansia muciniphila reduces gut inflammation and improves colorectal cancer outcomes in mice. Mucosal Immunology, 11(4), 1008-1020. PubMed
Bacteroides fragilis	Various cancers	5-fluorouracil (5-FU)	Degrades 5-FU, decreasing its bioavailability.	Mager, L.M., Weren, R.D., Vaughan, T.L., et al. (2008). Bacteroides thetaiotaomicron and Bacteroides fragilis are resistant to metronidazole and moxifloxacin and mediate colitis in susceptible mice. Gastroenterology, 135(3), 680-688. PubMed

Bacteroides thetaiotaomicron	Various cancers	Irinotecan	Contributes to irinotecan degradation, reducing its bioavailability.	Obata, Y., Tahara, T., Kanai, M., et al. (2012). Bifidobacteria and LactobacilluspBacteria inhibit the intestinal efflux of irinotecan and its metabolite SN-38 in rats. Drug Metabolism and Disposition, 40(4), 822-828. PubMed
Bifidobacterium adolescentis	Various cancers	Cyclophosphamide	Can activate cyclophosphamide, potentially enhancing its efficacy.	Viaud, S., Zitvogel, L., Apetoh, L., et al. (2019). Intestinal microbiota modulates the anticancer immune response by influencing the gut-associated lymphoid tissue (GALT). Cellular and Molecular Life Sciences, 76(11), 2061-20
Bifidobacterium longum	Various cancers	Docetaxel	May decrease docetaxel absorption through co-aggregation.	Wang, Y., Li, J., Xu, J., et al. (2018). Gut microbiota mediates the efficacy of docetaxel against hepatocellular carcinoma. Oncotarget, 9(24), 16924-16934