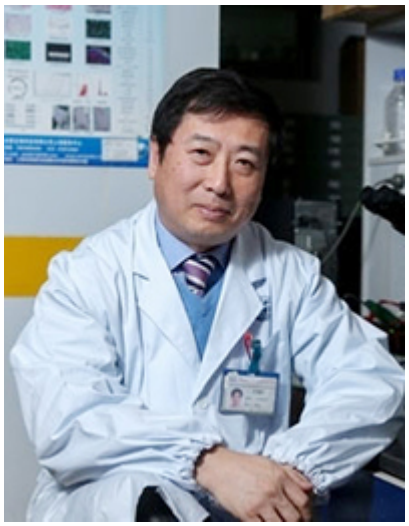
中国科学家发现一种肠道细菌能抑制癌细胞死亡

Chinese Scientists Have Discovered That a Kind of Intestinal Bacteria Can Inhibit the Death of Cancer Cell

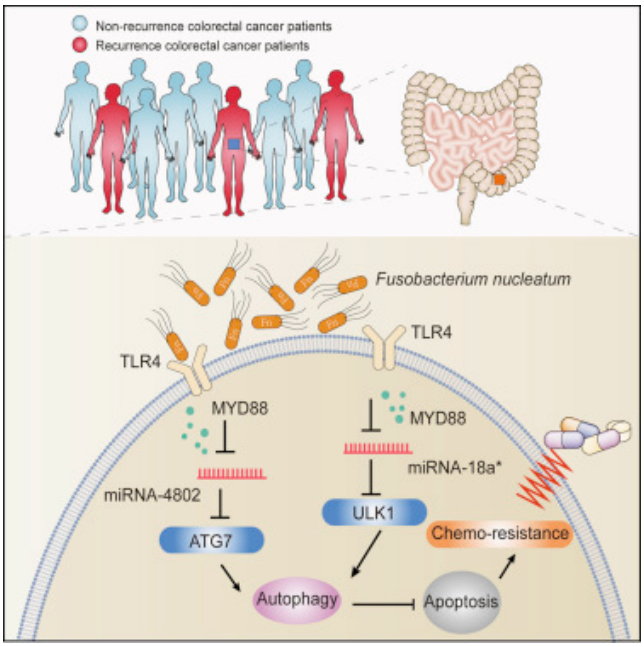


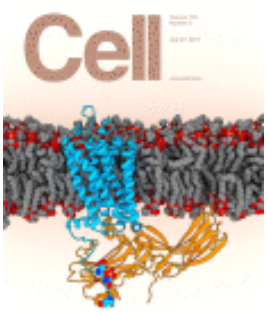
房静远教授

【Cell 系列】学医学院附属仁济医院消化科的房静远教授、陈萦晅副教授、洪洁和陈豪燕副研究员以及美国密西根大学邹伟平教授在 Cell 期刊上联合发表了一项研究。研究表明，一种细菌与结肠直肠癌的复发和预后不良有关。他们发现，肠道中的具核梭杆菌可以阻止化疗引起的癌细胞凋亡过程。

结肠直肠癌是全球发病率第三的常见癌症，也是导致癌症相关死亡的第二大原因。最常用于治疗结肠直肠癌的两种药物通过抑制癌细胞的酶活性或阻止肿瘤细胞生长发挥作用。但细菌能够使癌症对这些药物产生耐受性。

通常情况下，化疗会诱导肿瘤细胞凋亡，但有些癌细胞能通过激活一种名为自噬的细胞存活机制，避免化疗引起的细胞凋亡。自噬活跃使癌症对化疗产生耐受性。具核梭杆菌能够靶向作用于 TLR4 和 MYD88 天然免疫信号并抑制两种 microRNAs 的表达，这些 microRNAs 的丧失会激活自噬，从而使肿瘤细胞能够避免化疗诱导的细胞凋亡。测量和靶向具核梭杆菌及其相关途径将为临床管理提供有价值的见解，并可改善结肠直肠癌患者的预后。





Fusobacterium nucleatum Promotes Chemoresistance to Colorectal Cancer by Modulating Autophagy

具核梭杆菌通过调节自噬促进结直肠癌的化学抗性

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Gut microbiota are linked to chronic inflammation and carcinogenesis. Chemotherapy failure is the major cause of recurrence and poor prognosis in colorectal cancer patients. Here, we investigated the contribution of gut microbiota to chemoresistance in patients with colorectal cancer. We found that Fusobacterium (F.) nucleatum was abundant in colorectal cancer tissues in patients with recurrence post chemotherapy, and was associated with patient clinicopathological characterisitcs. Furthermore, our bioinformatic and functional studies demonstrated that F. nucleatum promoted colorectal cancer resistance to chemotherapy. Mechanistically, F. nucleatum targeted TLR4 and MYD88 innate immune signaling and specific microRNAs to activate the autophagy pathway and alter colorectal cancer chemotherapeutic response. Thus, F. nucleatum orchestrates a molecular network of the Toll-like receptor, microRNAs, and autophagy to clinically, biologically, and mechanistically control colorectal cancer chemoresistance. Measuring and targeting F. nucleatum and its associated pathway will yield valuable insight into clinical management and may ameliorate colorectal cancer patient outcomes.