

Supplementary Table 1: Summary of studies investigating the role of the gut microbiome in ICI therapy

ICI Therapy	Tumour	Model	Relevant Intestinal Microbes in Responders	Relevant Intestinal Microbes in Non-Responders	Relevant Intestinal Microbes: Side effects	Publication Author, Year and Reference
Anti-PD-L1 mAbs	Melanoma	Mouse	<i>Bifidobacterium breve</i> , <i>Bifidobacterium longum</i>			Sivan, 2015 PMID: 26541606
Anti-CTLA-4 mAbs (ipilimumab)	Melanoma, MM, NSCLC	Mouse	<i>Bacteroides thetaiotamicron</i> , <i>Bacteroides fragilis</i> , <i>Burkholderiales</i>		Reduced Colitis: <i>Bacteroides fragilis</i> , <i>Burkholderia cepacia</i>	Vétizou, 2015 [77]
Anti-CTLA-4 mAbs (ipilimumab) and/or anti-PD-1 (nivolumab) mAbs	Melanoma	Human	Firmicutes phylum: Ruminococcus and Lachnospiraceae genus (relatives of <i>Faecalibacterium prausnitzii</i> L2-6, <i>Gemmiger formicilis</i> , butyrate-producing bacterium L2-21)	<i>Bacteroides</i>	Induced Colitis: Firmicutes (<i>Faecalibacterium prausnitzii</i> , <i>Gemmiger formicilis</i>) Reduced colitis: <i>Bacteroidetes</i>	Chaput, 2017 PMID: 28368458
Anti-CTLA-4 mAbs (ipilimumab) and/or anti-PD-1 (nivolumab or pembrolizumab) mAbs	Melanoma	Human	<i>Faecalibacterium prausnitzii</i> , <i>Bacteroides thetaiotamicron</i> , <i>Holdemania filiformis</i> , <i>Dorea formicogenerans</i> , <i>Bacteroides caccae</i>			Frankel, 2017 [76]
Anti-PD-1 or anti-PD-L1 mAbs	NSCLC, renal cell carcinoma, urothelial carcinoma	Human/mouse	<i>Akkermansia muciniphilia</i> , <i>Alistipes indistinctus</i>			Routy, 2018 [75]
Anti-PD-1 or anti-CTLA-4 mAbs	Melanoma	Human/mouse	<i>Enterococcus faecium</i> , <i>Collinsella aerofaciens</i> , <i>Bifidobacterium adolescentis</i> , <i>Klebsiella pneumoniae</i> , <i>Veillonella parvula</i> , <i>Parabacteroides merdae</i> , <i>Lactobacillus sp.</i> , <i>Bifidobacterium longum</i>	<i>Ruminococcus obeum</i> , <i>Roseburia intestinalis</i>		Matson, 2018 PMID: 29302014
Anti-PD-1 (pembrolizumab) mAbs	Melanoma	Human/mouse	<i>Ruminococcaceae</i>	<i>Bacteriodales</i>		Gopalakrishnan, 2018 PMID: 29097493