WHAT CLAIMED IS:

1. Use of *Akkermansiamuciniphila* SSYD-3, in combination with an immune checkpoint inhibitor in the manufacture of a medicament for treating tumors in a subject.

2. Use of *Akkermansiamuciniphila* SSYD-3 inhibitor in the manufacture of a medicament for improving the effect of an immune checkpoint inhibitor in suppressing tumors in a subject.

3. The use of claim 1 or 2, further comprises to be administered to the subject other bacteria (such as *Bifidobacterium, Lactobacillus, Clostridium, Enterococcus faecium, Prevotella stercorea, or Ruminococcus*).

4. The use of claim 1 or 2, wherein the *Akkermansiamuciniphila* SSYD-3 is to be administered orally.

5. The use of claim 4, wherein the *Akkermansiamuciniphila* SSYD-3 is in the form of oral liquid, tablet, capsule, or lyophilized powder.

6. The use of claim 1 or 2, wherein *Akkermansiamuciniphila* SSYD-3 is to be administered at a dose range of 10^4-10^{13} CFU/person/day in the medicament.

7. The use of claim 1 or 2, wherein the immune checkpoint inhibitor is PD-1 inhibitor, PD-L1 inhibitor or CTLA-4 inhibitor.

8. The use of claim 1 or 2, wherein the immune checkpoint inhibitor is Keytruda, Tecentriq, Nivolumab, Avelumab or Toripalimab.

9. The use of claim 1 or 2, wherein the tumor is selected from colon cancer, lung cancer, gastric cancer, liver cancer, head and neck cancer, cervical cancer, breast cancer, lymphoma, melanoma, kidney cancer or urothelial cancer.

10. The use of claim 1 or 2, wherein the *Akkermansiamuciniphila* SSYD-3 is to be administered before the immune checkpoint inhibitor.