CLAIMS

What is claimed is:

1. A pharmaceutical composition ~~method~~ for preventing or delaying the onset of hepatocellular cancer in a subject, the pharmaceutical composition ~~method comprising administering to the subject a therapeutically effective amount of a composition~~ comprising at least ~~one~~ two short chain fatty acids and/or salts thereof selected from the group consisting of: acetic acid, propionic acid, butyric acid, and a pharmaceutically-acceptable salt thereof.

2. The pharmaceutical composition ~~method~~ of claim 1, wherein the short chain fatty acids and/or salts thereof~~is selected from the group consisting of: formic acid, acetic acid, propionic acid, isobutyric acid, butyric acid, isovaleric acid, valeric acid, isocaproic acid, caproic acid, lactic acid, succinic acid, and pyruvic acid~~ comprise acetic acid or a pharmaceutically acceptable salt thereof, propionic acid or a pharmaceutically acceptable salt thereof, and butyric acid or a pharmaceutically acceptable salt thereof.

3. The pharmaceutical composition ~~method~~ of claim 1 or 2, ~~wherein said composition~~ which further comprises a pharmaceutically acceptable excipient.

4. The pharmaceutical composition ~~method~~ of claim 1-3, ~~wherein said composition~~which is administered in combination with another therapeutic agent.

5. The pharmaceutical composition ~~method~~ of claim 1-4, ~~wherein the composition~~ which is administered orally.

6. The pharmaceutical composition ~~method~~ of claim 5, ~~wherein the composition~~ which is administered with food or drink.

7. A ~~method~~ pharmaceutical composition for the treatment of liver disease in a subject, ~~preventing or delaying the onset of hepatocellular cancer in a subject, the method comprising administering to the subject a therapeutically effective~~

~~amount of a composition comprising at least one probiotic bacteria~~the pharmaceutical composition comprising at least two short chain fatty acids and/or salts thereof selected from the group consisting of: acetic acid, propionic acid, butyric acid, and a pharmaceutically acceptable salt thereof.

8. The ~~method~~ pharmaceutical composition of claim 7, wherein the short chain fatty acids and/or salts thereof comprise acetic acid or a pharmaceutically acceptable salt thereof, propionic acid or a pharmaceutically acceptable salt thereof, and butyric acid or a pharmaceutically acceptable salt thereof~~probiotic bacteria is selected from the group consisting of: *Lactobacillus plantarum*, *Lactobacillus acidophilus, Lactobacillus paracasei*, *Leuconostoc mesenteroides*, *Lactobacillus bulgaricus*, *Lactobacillus sasei*, *Lactobacillus salivarius, Pediococcus pentosaceus, Streptococcus thermophiles, Bacillus subtilis, Bacillus coagulans, Enteroccous faecium, Bifidobacterium bifidum*, *Bifidobacterium lactis, Bifidobacterium longum,* and *Bifidobacterium infantis*~~.

9. The pharmaceutical composition ~~method~~ of claim 7 or 8, ~~wherein said composition~~ which further comprises a pharmaceutically acceptable excipient.

~~10. The method of claim 9, wherein said excipient comprises at least one prebiotic.~~

~~11.~~10. The ~~method~~ pharmaceutical composition of claim 7-9, ~~wherein said composition~~which is administered in combination with another therapeutic agent.

~~12.~~11. The method of claim 7-10, ~~wherein the composition~~which is administered orally.

~~13.~~12. The method of claim 1~~1~~2, ~~wherein the composition~~which is administered with food or drink.

~~14.~~13. A kit for preventing or delaying the onset of hepatocellular cancer in a subject, said kit containing a composition comprising at least two~~one~~ short

chain fatty acids and/or salts thereof selected from the group consisting of: acetic acid, propionic acid, butyric acid, and a pharmaceutically acceptable salt thereof.

14. A kit of claim 13, wherein the short chain fatty acids and/or salts thereof comprise acetic acid or a pharmaceutically acceptable salt thereof, propionic acid or a pharmaceutically acceptable salt thereof, and butyric acid or a pharmaceutically acceptable salt thereof~~for preventing or delaying the onset of hepatocellular cancer in a subject, said kit containing a composition comprising at least one probiotic bacteria~~.

15. A kit for preventing or delaying the onset of liver disease in a subject, said kit containing a composition comprising at least two short chain fatty acids and/or salts thereof selected from the group consisting of: acetic acid, propionic acid, butyric acid, and a pharmaceutically acceptable salt thereof.

16. The kit of claim 15, wherein the short chain fatty acids and/or salts thereof comprise acetic acid or a pharmaceutically acceptable salt thereof, propionic acid or a pharmaceutically acceptable salt thereof, and butyric acid or a pharmaceutically acceptable salt thereof.

17. The pharmaceutical composition of any one of claim 7-12, wherein the liver disease is liver cancer.

~~15.~~18. The kit of any one of claim 15 or 16, wherein the liver disease is liver cancer.