WHAT IS CLAIMED IS:

1. Use of an anti-human progastrin (hPG) monoclonal antibody for the manufacture of a medicament for treating and preventing recurrence of liver cancer wherein said anti-hPG monoclonal antibody ~~has neutralizing activity~~ does not bind to C-terminal flanking peptide (CTFP) consisting of SEQ ID NO:106, to amidated gastrin 17 (G17) consisting of SEQ ID NO:104, or to glycine-extended gastrin 17 (G17-Gly) consisting of SEQ ID NO:105.

2. The use according to claim 1, wherein the anti-progastrin antibody has neutralizing activity.

~~2~~3. The use according to **claim 1**, wherein the anti-progastrin antibody is a humanized monoclonal antibody.

~~3~~4. The use according to **claim 1**, wherein the anti-hPG monoclonal antibody is an N-terminal anti-hPG monoclonal antibody.

~~4~~5. The use according to **claim ~~3~~4**, wherein the N-terminal anti-hPG monoclonal antibody binds an epitope comprising a sequence selected from the group consisting of DAPLG (SEQ ID NO:28), PDAPLG (SEQ ID NO:29), PRSQQPD (SEQ ID NO:30), WKPRSQQPD (SEQ ID NO:31) and WKPRSQQPDAPLG (SEQ ID NO:32).

~~5~~6. The use according to **claim ~~3~~4**, wherein the N-terminal anti-hPG monoclonal antibody is raised against an immunogen comprising a peptide having the sequence SWKPRSQQPDAPLG (SEQ ID NO:25).

~~6~~7. The use according to **claim ~~3~~4**, wherein the N-terminal anti-hPG monoclonal antibody comprises:

a. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.3 (SEQ ID NO:1), CDR2 comprises the amino acid sequence of VH CDR 2.3 (SEQ ID NO:2), and CDR3 comprises the amino acid sequence of VH CDR 3.3 (SEQ ID NO:3), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.3 (SEQ ID NO:4), CDR2 comprises the amino acid sequence of VL CDR 2.3 (SEQ ID NO:5), and CDR3 comprises the amino acid sequence of VL CDR 3.3 (SEQ ID NO:6);

b. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.4 (SEQ ID NO:7), CDR2 comprises the amino acid sequence of VH

CDR 2.4 (SEQ ID NO:8), and CDR3 comprises the amino acid sequence of VH CDR 3.4 (SEQ ID NO:9), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.4 (SEQ ID NO:10), CDR2 comprises the amino acid sequence of VL CDR 2.4 (SEQ ID NO:5), and CDR3 comprises the amino acid sequence of VL CDR 3.4 (SEQ ID NO:11);

c. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.16 (SEQ ID NO:39), CDR2 comprises the amino acid sequence of VH CDR 2.16 (SEQ ID NO:43), and CDR3 comprises the amino acid sequence of VH CDR 3.16 (SEQ ID NO:47), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.16 (SEQ ID NO:50), CDR2 comprises the amino acid sequence of VL CDR 2.16 (SEQ ID NO:53), and CDR3 comprises the amino acid sequence of VL CDR 3.16 (SEQ ID NO:57); or

d. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.19 (SEQ ID NO:40), CDR2 comprises the amino acid sequence of VH CDR 2.19 (SEQ ID NO:44), and CDR3 comprises the amino acid sequence of VH CDR 3.19 (SEQ ID NO:48), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.19 (SEQ ID NO:51), CDR2 comprises the amino acid sequence of VL CDR 2.19 (SEQ ID NO:54), and CDR3 comprises the amino acid sequence of VL CDR 3.19 (SEQ ID NO:58).

~~7~~8. The use according to **claim ~~3~~4**, wherein the anti-hPG monoclonal antibody competes for binding hPG with a reference antibody selected from the group consisting of:

a. a monoclonal antibody comprising a heavy variable domain sequence of SEQ ID NO:12 and a light chain variable domain sequence of SEQ ID NO:13;

b. a monoclonal antibody comprising a heavy variable domain sequence of SEQ ID NO:14 and a light chain variable domain sequence of SEQ ID NO:15;

c. a monoclonal antibody comprising a heavy variable domain sequence of SEQ ID NO:61 and a light chain variable domain sequence of SEQ ID NO:65; and

d. a monoclonal antibody comprising a heavy variable domain sequence of SEQ ID NO:62 and a light chain variable domain sequence of SEQ ID NO:66.

~~8~~9. The use according to **claim 1**, wherein the anti-hPG monoclonal antibody is a C-terminal anti-hPG monoclonal antibody.

~~9~~10. The use according to **claim ~~8~~9**, wherein the C-terminal anti-hPG monoclonal antibody binds an epitope comprising a sequence selected from the group consisting of FGRR (SEQ ID NO:33), MDFGR (SEQ ID NO:34) and GWMDFGRR (SEQ ID NO:36).

~~10~~11. The use according to **claim ~~8~~9**, wherein the C-terminal anti hPG monoclonal antibody is raised against an immunogen comprising a peptide having the sequence QGPWLEEEEEAYGWMDFGRRSAEDEN (SEQ ID NO:27).

~~11~~12. The use according to **claim ~~8~~9**, wherein the C-terminal anti-hPG monoclonal antibody comprises

a. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.8 (SEQ ID NO:37), CDR2 comprises the amino acid sequence of VH CDR 2.8 (SEQ ID NO:41), and CDR3 comprises the amino acid sequence of VH CDR 3.8 (SEQ ID NO:45), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.8 (SEQ ID NO:49), CDR2 comprises the amino acid sequence of VL CDR 2.8 (SEQ ID NO:52), and CDR3 comprises the amino acid sequence of VL CDR 3.8 (SEQ ID NO:55);

b. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.13 (SEQ ID NO:38), CDR2 comprises the amino acid sequence of VH CDR 2.13 (SEQ ID NO:42), and CDR3 comprises the amino acid sequence of VH CDR 3.13 (SEQ ID NO:46), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.13 (SEQ ID NO:50), CDR2 comprises the amino acid sequence of VL CDR 2.13 (SEQ ID NO:53), and CDR3 comprises the amino acid sequence of VL CDR 3.13 (SEQ ID NO:56).

~~12~~13. The use according to **claim ~~8~~9**, wherein the C-terminal anti-hPG monoclonal antibody competes for binding hPG with a reference antibody selected from the group consisting of

a. a monoclonal antibody comprising a heavy chain variable domain sequence of SEQ ID NO:59 and a light chain variable domain sequence of SEQ ID NO:63; and

b. a monoclonal antibody comprising a heavy chain variable domain sequence of SEQ ID NO:60 and a light chain variable domain sequence of SEQ ID NO:64.

~~13~~14. The method of **claim 1**, in which the anti-progastrin antibody is administered adjunctive to surgical resection, chemotherapy or radiation therapy.

~~14~~15. A method of inhibiting proliferation of a liver tumor cell or a liver cancer stem cell *in vitro*, comprising exposing the cell to an amount of an anti-progastrin antibody according to **claim 1** sufficient to inhibit its proliferation.

~~15. The use according to **claim 1** for the manufacture of a medicament for use in preventing recurrence of liver cancer in a subject comprising:~~

~~administering to a subject who has been treated for liver cancer and who has measured serum progastrin level of about 500 pM or greater, an amount of an anti-progastrin effective to lower the subject's serum PG level to about 50 pM or lower.~~

~~16. The use according to **claim 1** for monitoring the effectiveness of a liver cancer treatment, comprising:~~

~~monitoring *in vitro* the blood progastrin level of a subject who is being treated for liver cancer, as a function of time, where a time-dependent decrease in the subject's serum progastrin level indicates the treatment is effective.~~

WHAT IS CLAIMED IS:

1. Use of an anti-human progastrin (hPG) monoclonal antibody for the manufacture of a medicament for treating and preventing recurrence of liver cancer wherein said anti-hPG monoclonal antibody does not bind to C-terminal flanking peptide (CTFP) consisting of SEQ ID NO:106, to amidated gastrin 17 (G17) consisting of SEQ ID NO:104, or to glycine-extended gastrin 17 (G17-Gly) consisting of SEQ ID NO:105.

2. The use according to claim 1, wherein the anti-progastrin antibody has neutralizing activity.

3. The use according to **claim 1**, wherein the anti-progastrin antibody is a humanized monoclonal antibody.

4. The use according to **claim 1**, wherein the anti-hPG monoclonal antibody is an N-terminal anti-hPG monoclonal antibody.

5. The use according to **claim 4**, wherein the N-terminal anti-hPG monoclonal antibody binds an epitope comprising a sequence selected from the group consisting of DAPLG (SEQ ID NO:28), PDAPLG (SEQ ID NO:29), PRSQQPD (SEQ ID NO:30), WKPRSQQPD (SEQ ID NO:31) and WKPRSQQPDAPLG (SEQ ID NO:32).

6. The use according to **claim 4**, wherein the N-terminal anti-hPG monoclonal antibody is raised against an immunogen comprising a peptide having the sequence SWKPRSQQPDAPLG (SEQ ID NO:25).

7. The use according to **claim 4**, wherein the N-terminal anti-hPG monoclonal antibody comprises:

a. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.3 (SEQ ID NO:1), CDR2 comprises the amino acid sequence of VH CDR 2.3 (SEQ ID NO:2), and CDR3 comprises the amino acid sequence of VH CDR 3.3 (SEQ ID NO:3), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.3 (SEQ ID NO:4), CDR2 comprises the amino acid sequence of VL CDR 2.3 (SEQ ID NO:5), and CDR3 comprises the amino acid sequence of VL CDR 3.3 (SEQ ID NO:6);

b. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.4 (SEQ ID NO:7), CDR2 comprises the amino acid sequence of VH

CDR 2.4 (SEQ ID NO:8), and CDR3 comprises the amino acid sequence of VH CDR 3.4 (SEQ ID NO:9), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.4 (SEQ ID NO:10), CDR2 comprises the amino acid sequence of VL CDR 2.4 (SEQ ID NO:5), and CDR3 comprises the amino acid sequence of VL CDR 3.4 (SEQ ID NO:11);

c. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.16 (SEQ ID NO:39), CDR2 comprises the amino acid sequence of VH CDR 2.16 (SEQ ID NO:43), and CDR3 comprises the amino acid sequence of VH CDR 3.16 (SEQ ID NO:47), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.16 (SEQ ID NO:50), CDR2 comprises the amino acid sequence of VL CDR 2.16 (SEQ ID NO:53), and CDR3 comprises the amino acid sequence of VL CDR 3.16 (SEQ ID NO:57); or

d. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.19 (SEQ ID NO:40), CDR2 comprises the amino acid sequence of VH CDR 2.19 (SEQ ID NO:44), and CDR3 comprises the amino acid sequence of VH CDR 3.19 (SEQ ID NO:48), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.19 (SEQ ID NO:51), CDR2 comprises the amino acid sequence of VL CDR 2.19 (SEQ ID NO:54), and CDR3 comprises the amino acid sequence of VL CDR 3.19 (SEQ ID NO:58).

8. The use according to **claim 4**, wherein the anti-hPG monoclonal antibody competes for binding hPG with a reference antibody selected from the group consisting of:

a. a monoclonal antibody comprising a heavy variable domain sequence of SEQ ID NO:12 and a light chain variable domain sequence of SEQ ID NO:13;

b. a monoclonal antibody comprising a heavy variable domain sequence of SEQ ID NO:14 and a light chain variable domain sequence of SEQ ID NO:15;

c. a monoclonal antibody comprising a heavy variable domain sequence of SEQ ID NO:61 and a light chain variable domain sequence of SEQ ID NO:65; and

d. a monoclonal antibody comprising a heavy variable domain sequence of SEQ ID NO:62 and a light chain variable domain sequence of SEQ ID NO:66.

9. The use according to **claim 1**, wherein the anti-hPG monoclonal antibody is a C-terminal anti-hPG monoclonal antibody.

10. The use according to **claim 9**, wherein the C-terminal anti-hPG monoclonal antibody binds an epitope comprising a sequence selected from the group consisting of FGRR (SEQ ID NO:33), MDFGR (SEQ ID NO:34) and GWMDFGRR (SEQ ID NO:36).

11. The use according to **claim 9**, wherein the C-terminal anti hPG monoclonal antibody is raised against an immunogen comprising a peptide having the sequence QGPWLEEEEEAYGWMDFGRRSAEDEN (SEQ ID NO:27).

12. The use according to **claim 9**, wherein the C-terminal anti-hPG monoclonal antibody comprises

a. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.8 (SEQ ID NO:37), CDR2 comprises the amino acid sequence of VH CDR 2.8 (SEQ ID NO:41), and CDR3 comprises the amino acid sequence of VH CDR 3.8 (SEQ ID NO:45), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.8 (SEQ ID NO:49), CDR2 comprises the amino acid sequence of VL CDR 2.8 (SEQ ID NO:52), and CDR3 comprises the amino acid sequence of VL CDR 3.8 (SEQ ID NO:55);

b. a heavy chain variable region in which CDR1 comprises the amino acid sequence of VH CDR 1.13 (SEQ ID NO:38), CDR2 comprises the amino acid sequence of VH CDR 2.13 (SEQ ID NO:42), and CDR3 comprises the amino acid sequence of VH CDR 3.13 (SEQ ID NO:46), and a light chain variable region in which CDR1 comprises the amino acid sequence of VL CDR 1.13 (SEQ ID NO:50), CDR2 comprises the amino acid sequence of VL CDR 2.13 (SEQ ID NO:53), and CDR3 comprises the amino acid sequence of VL CDR 3.13 (SEQ ID NO:56).

13. The use according to **claim 9**, wherein the C-terminal anti-hPG monoclonal antibody competes for binding hPG with a reference antibody selected from the group consisting of

a. a monoclonal antibody comprising a heavy chain variable domain sequence of SEQ ID NO:59 and a light chain variable domain sequence of SEQ ID NO:63; and

b. a monoclonal antibody comprising a heavy chain variable domain sequence of SEQ ID NO:60 and a light chain variable domain sequence of SEQ ID NO:64.

14. The method of **claim 1**, in which the anti-progastrin antibody is administered adjunctive to surgical resection, chemotherapy or radiation therapy.

15. A method of inhibiting proliferation of a liver tumor cell or a liver cancer stem cell *in vitro*, comprising exposing the cell to an amount of an anti-progastrin antibody according to **claim 1** sufficient to inhibit its proliferation.