6. The method of any one of claims 1 to 5, wherein said activating step comprises contacting said definitive endoderm with both Wnt3a and FGF4 or CHIR99021 and FGF4 over a specified activation period.

7. The method of any one of claims 1 to 6, wherein said definitive endoderm is contacted with a BMP inhibitor at a concentration between about 50 to about 1500 ng/ml.

8. The method of any one of claims 1 to 7, wherein the retinoic acid of step c) is administered in an amount of between about 0.2 uM to about 20 uM, preferably about 2.0 uM, preferably wherein step c) is carried out until expression of Pdx1/Sox1 is detected in said foregut spheroids.

9. The method of any one of claims 1 to 8, wherein said exposure to EGF is at a concentration and length of time sufficient to increase said gastric spheroids to greater than 1 mm in diameter, or greater than 2 mm in diameter, or greater than 3 mm in diameter, or greater than 4 mm in diameter.

10. The method of any one of claims 1 to 9, further comprising the step of culturing said activated definitive endoderm *in vitro* to form a 3-dimensional tissue structure.

11. The method of any one of claims 1 to 10, wherein said activating and inhibiting steps are conducted *in vitro*.

12. The method of any one of claims 1 to 11, wherein said activation period and said inhibition period overlap.

13. The method of any one of claims 1 to 11, wherein said activation period and said inhibition period do not overlap.

14. The method of any one of claims 1 to 13, wherein said activation period is between about 24 and about 120 hours.

15. A method of generating a gastric organoid comprising fundus tissue comprising the steps of

a) generating a definitive endoderm (DE) from a pluripotent stem cell;

b) contacting said definitive endoderm with an agent that activates the FGF pathway as defined in claim 1, an agent that activates the WNT pathway as defined in claim 1 or claim 3, an agent that inhibits the BMP pathway as defined in claim 1, and retinoic acid to generate a posterior foregut; and

c) contacting said posterior foregut with EGF, retinoic acid, an agent that activates the WNT pathway as defined in claim 1 or claim 3, and an agent that inhibits the BMP pathway as defined in claim 1, to generate a fundus tissue.