## Document S1: Supplementary Materials and Methods

### Western blot analysis

For protein extraction, HepG2 and HuH7 cells grown in 6-cm culture dishes were washed with PBS and lysed with RIPA buffer containing protease inhibitors [2 μg/mL Aprotinin, 2 μg/mL Leupeptin, and 1 μg/mL Pepstatin A (all from Nacalai Tesque)] with passing through 25G needles on ice. After protein determination with a BCA Protein Assay Kit (Pierce), the cell lysates were denatured with 2x SDS loading buffer containing 10% (v/v) β-mercaptoethanol at 95 ˚C for 5 min. Then, electrophoresis was performed using 10% (w/v) SDS-PAGE gels, and the gels were transferred onto nitrocellulose membranes (GE Healthcare) with a Trans-Blot Turbo Transfer System (BIO-RAD). The blots were probed with primary antibodies for HNF4A (C11F12, 1/1000, Cell signaling Technology), HNF1A (F-7, 1/300, Santa Cruz Biotechnology), FOXA3 (A-2, 1/1000, Santa Cruz Biotechnology), and ACTB [AC-15, horseradish peroxidase (HRP)-conjugated, 1/10000, Abcam]. After washing with Tris-buffered saline containing 0.1% Tween-20 (Nacalai Tesque), the membranes were incubated with or without HRP-conjugated secondary antibodies specific to the species of the primary antibodies (1/2000; Abcam). Detection was performed using an ECL Prime Western Blotting Detection Reagent (GE Healthcare) and a LAS-3000 Mini Imaging System (Fuji Film).

### Caspase-Glo 3/7 assay

HepG2 and HuH7 cells were plated in 6-well plates at $3 \times 10^5$ cells/well and cultured for 7 days. Apoptosis activity was investigated by a Caspase-Glo 3/7 Activity Assay (Promega) in accordance with the manufacturer's instructions. Briefly, Caspase-Glo 3/7 reagent was added to lysates of cells harvested *in vitro*. Caspase-Glo 3/7 chemiluminescence was measured by a Luminescencer Octa. Cells treated with 20 nM actinomycin D (Sigma-Aldrich) for 48 h at 37°C were evaluated as a positive control.