**Supplementary data**

**Modified alkaline lysis protocol**

The following modifications were made to the classical pDNA miniprep protocol described by Green and Sambrook 2016 [8]: Glycose was omitted from the alkaline lysis solution I; NaOH concentration in alkaline lysis solution II was reduced to 0.1 N to prevent formation of dpDNA; DH5α cells (1.5 ml ON culture) containing pmaxGFP (3.5 kb, Lonza) and pB1AS (5.8 kb, derived from pGL3 basic containing a promoter fragment of BACE1 noncoding RNA) were pelleted by centrifugation and resuspended at room temperature (RT). The amounts of alkaline solutions I-III were doubled. All centrifugation steps were performed at RT. After centrifugation step 7, purification of pDNA was performed with FPI. **Composition of the alkaline lysis solutions: I - 25 mM Tris-HCl, pH 7.5, 10 mM EDTA-Na2, pH 8.0; II - 0.1N NaOH, 1% SDS; III - 3M KOAc, pH 5.5.**

**Fractional precipitation with isopropanol (FPI)**

Eight hundred seventy five microliters of bacterial lysate, obtained after successive addition of alkaline lysis solutions I-III, i. e., supernatant of centrifugation step 7 [8], was transferred to a fresh 1.5 ml tube containing 290 µl of isopropanol (0.33 volume) and mixed immediately by vortexing. To guarantee rapid mixing, and avoid oversaturation and/or precipitation at the interphase between alcohol and aqueous solution, it is important to add the aqueous solution to the isopropanol, not vice versa. The mix was centrifuged at maximum speed (12,100 x ***g***) for 5 minutes at RT in an Eppendorf MiniSpin microcentrifuge. The supernatant (1150 µl) containing pDNA was carefully removed to avoid touching the RNA and polysaccharide pellet, transferred to a fresh tube containing 30 µl of isopropanol (final volume 0.36 of initial solution) and mixed immediately. After incubation for 2-3 min at RT, pDNA was pelleted by centrifugation at maximum speed for 8 minutes at RT. Subsequently, most of the supernatant, except the last 100 µl, was removed by vacuum suction pump. To collect the supernatant drops adhered to the tube wall, quick spin was used, and the remaining supernatant was carefully removed from the opposite side of the pellet with the pipette. After washing with 70% ethanol and air drying for 2-3 min at RT, the pDNA pellet was dissolved in 50 µl sterile water. About 0.3 µg of pDNA was further analysed by gel electrophoresis on a Tris-borate-EDTA (pH 8.3) 1 % agarose gel run at 100V for 1 hr. For analysis purposes, the first pellet, containing RNA was treated similarly, as the second (pDNA) pellet.

**Cell culture and pDNA transfection**

HEK293, a human embryonic kidney cell line (ATCC CRL-1573) and Huh7, a human hepatocarcinoma cell line (RRID:CVCL\_0336) were grown at 37˚C in an atmosphere containing 5% carbon dioxide in Dulbecco’s modified Eagle medium (DMEM) supplemented with 10% fetal bovine calf serum, penicillin (100 µg/ml) and streptomycin (100 μg/ml) (Invitrogen). Cells were plated in 12-well tissue culture dishes with appropriate density 24 hours before transfection. Transient transfection was carried out with Lipofectamine 3000 Reagent according to the manufacturer’s protocol (Thermo Fisher Scientific) for 48 hrs. All transfections were made in triplicate.