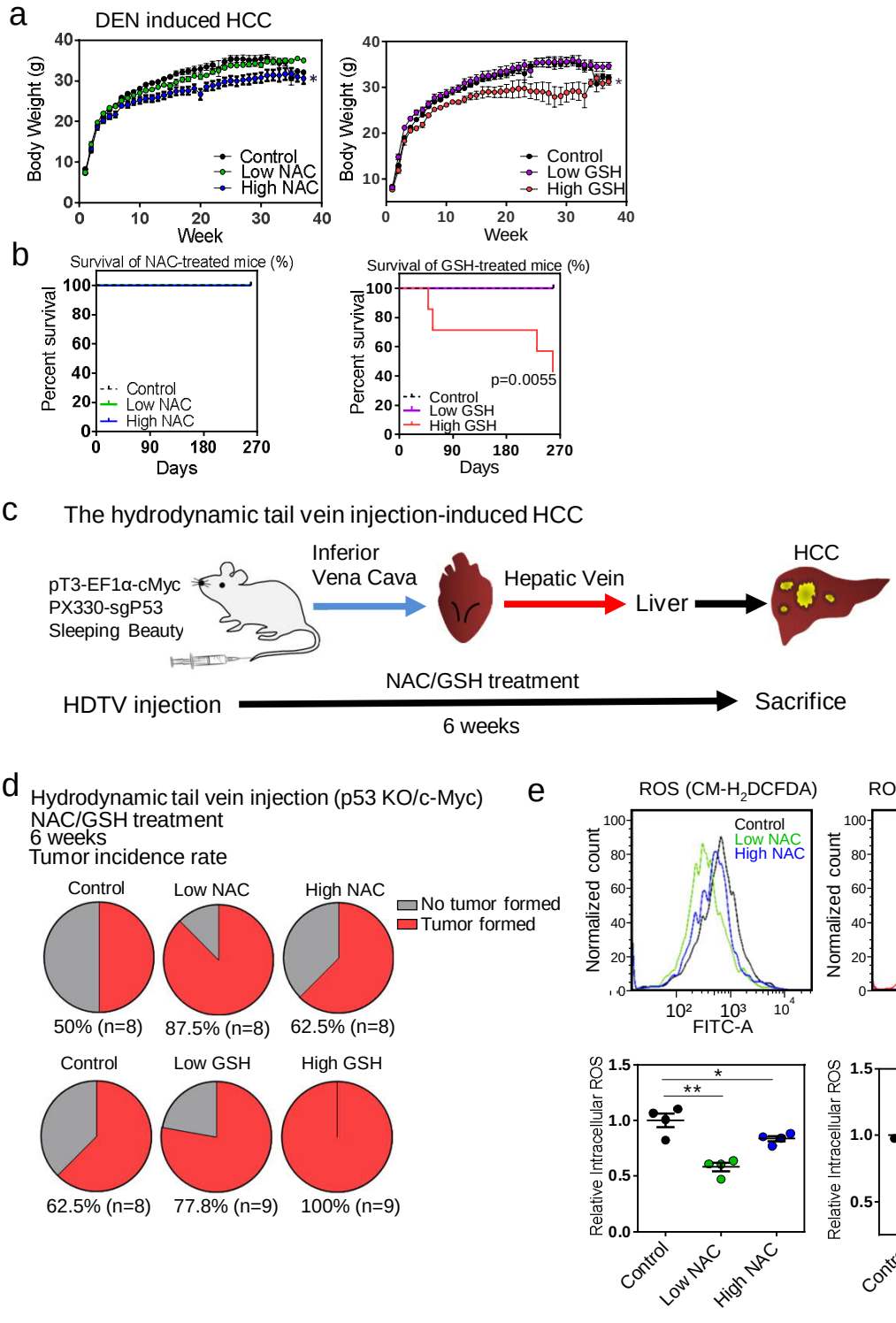
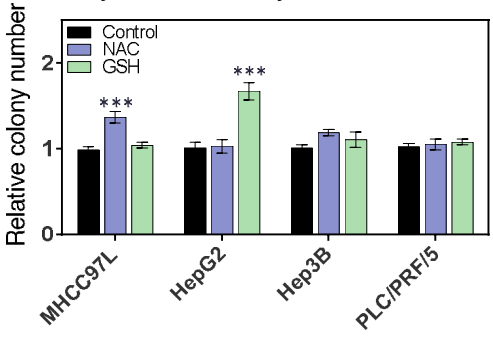
Supplementary Figure 1

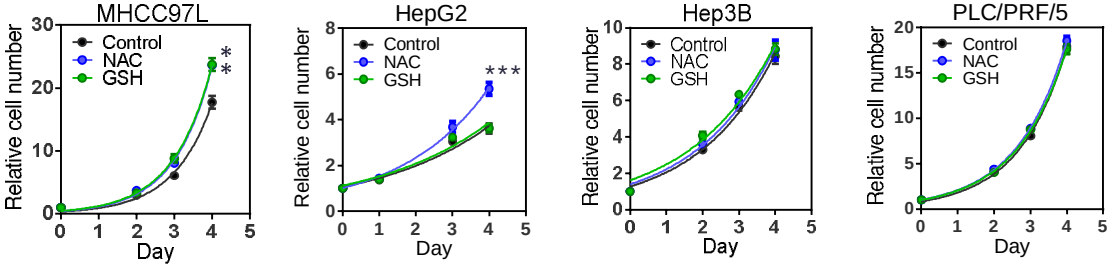


Supplementary Figure 2

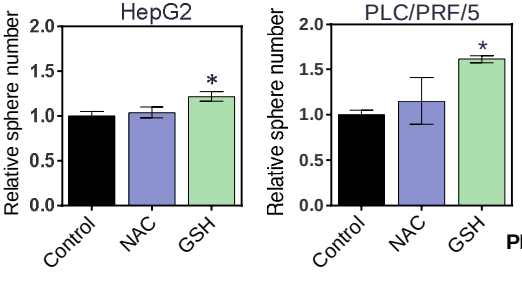
a Colony formation assay



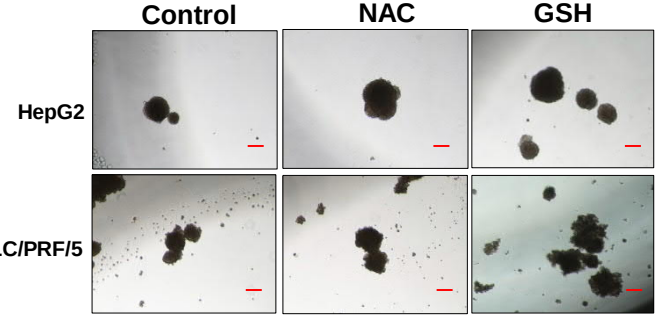
b Cell proliferation assay



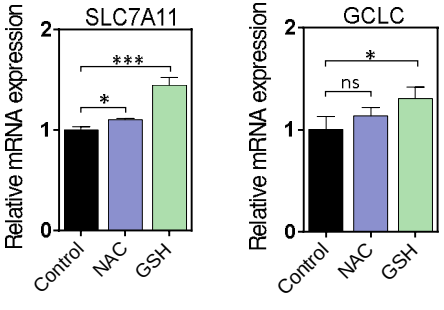
c Sphere formation assay



d Sphere formation assay



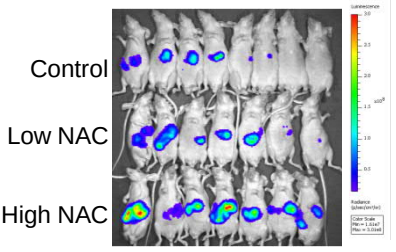
e qPCR MHCC97L cells



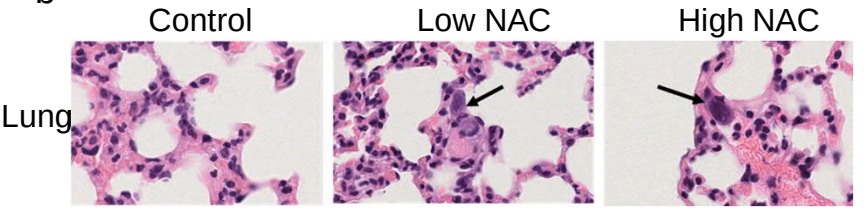
Supplementary Figure 3

a

Orthotopic liver injection
NAC treatment



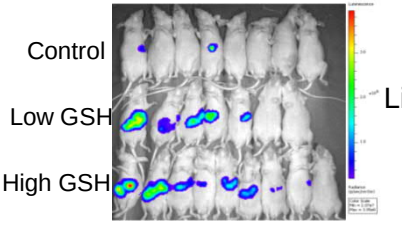
b



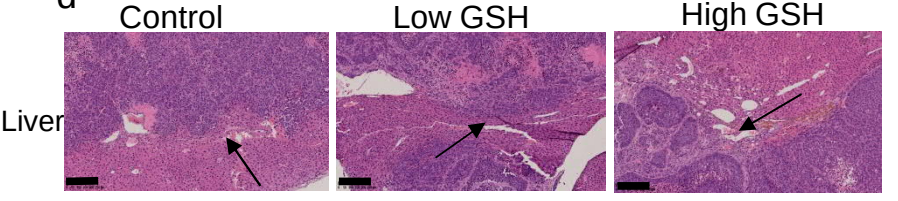
The metastatic foci		
Control	Low NAC	High NAC
0.23 (0-1)	0.37 (0-1.8)	0.22 (0-1.1)

c

Orthotopic liver injection
GSH treatment



d

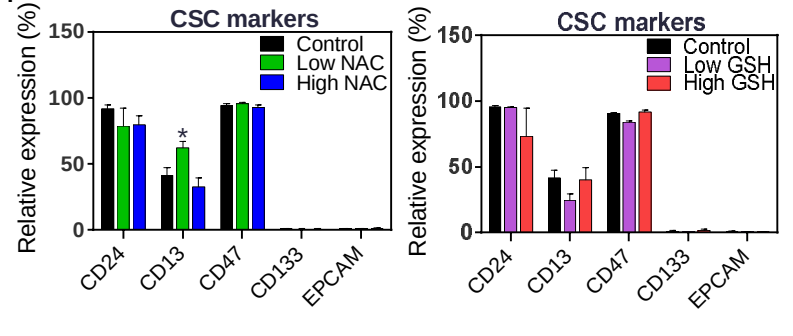


e

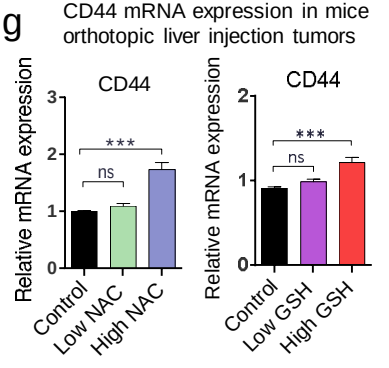
Tumor incidence rate				
MHCC97L cells	Number of cells injected	Control	Low NAC	High NAC
Frequency	2,000	4/8	6/8	4/8
	20,000	4/8	6/8	7/8
	200,000	7/8	8/8	8/8

Tumor incidence rate				
MHCC97L cells	Number of cells injected	Control	Low GSH	High GSH
Frequency	2,000	4/8	5/8	7/8
	20,000	6/8	7/8	8/8
	200,000	7/8	7/8	8/8

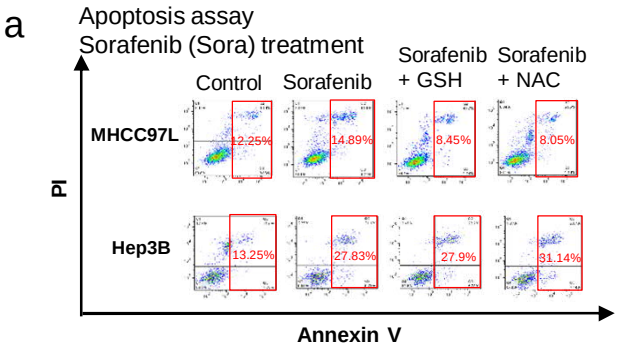
f

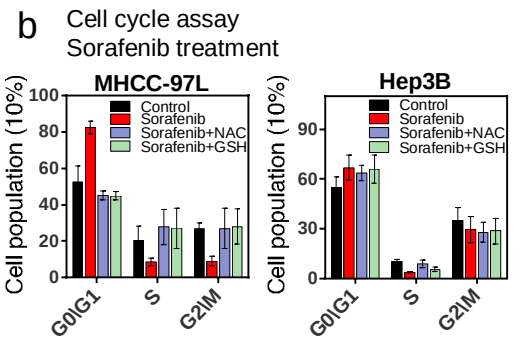


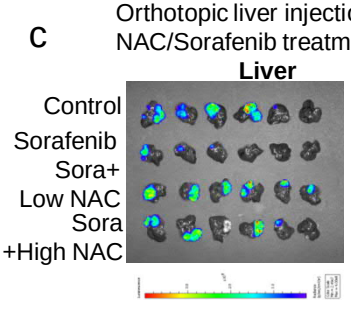
g

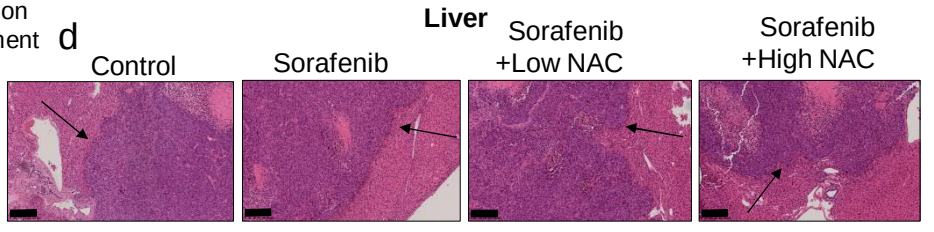


Supplementary Figure 4



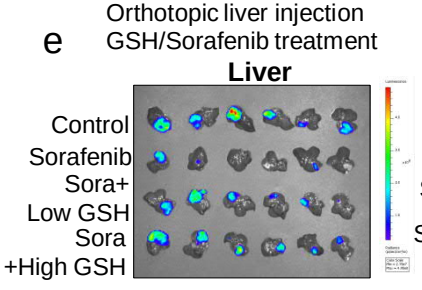


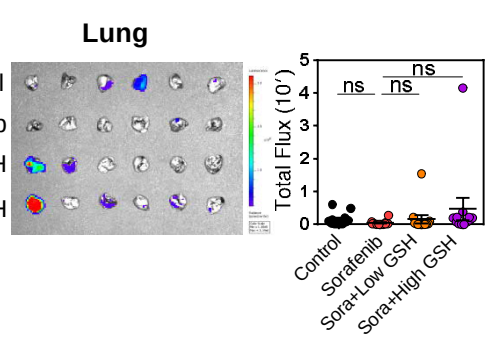


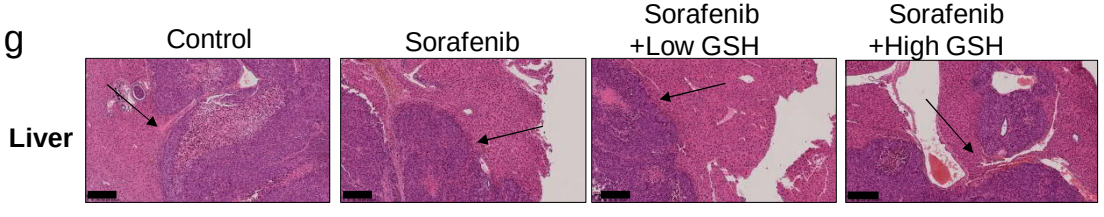


Lung

The metastatic foci in lung			
Control	Sorafenib	Sorafenib +Low NAC	Sorafenib +High NAC
0.03(0-0.1)	0	0.43* (0.2-0.7)	0.77 (0-2.1)





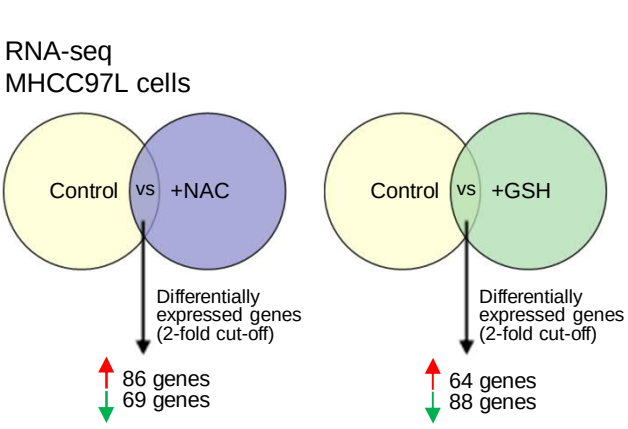


Lung

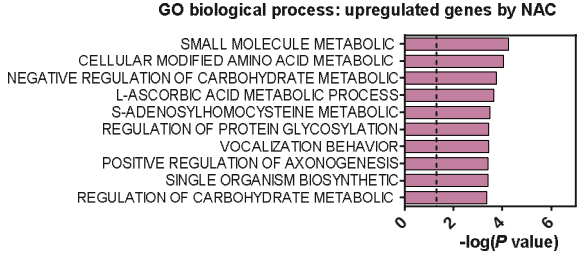
The metastatic foci in lung			
Control	Sorafenib	Sorafenib +Low NAC	Sorafenib +High NAC
0.03(0-0.1)	0	0.03 (0-0.1)	1.87 (0-0.9)

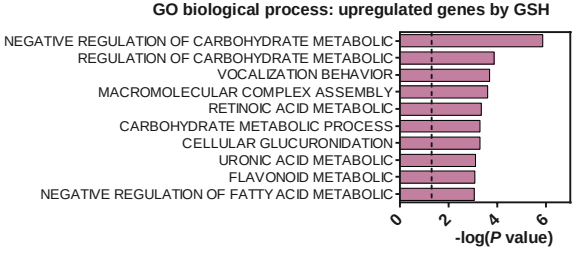
Supplementary Figure 5

a

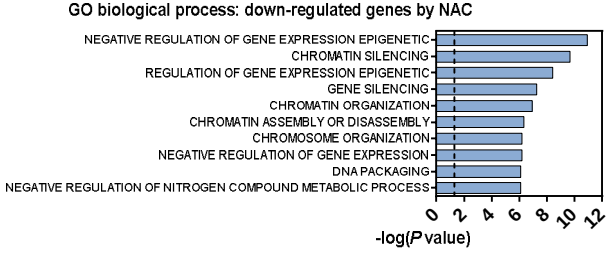


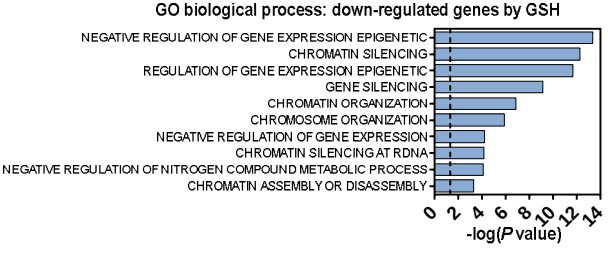
b RNA-seq
MHCC97L cells



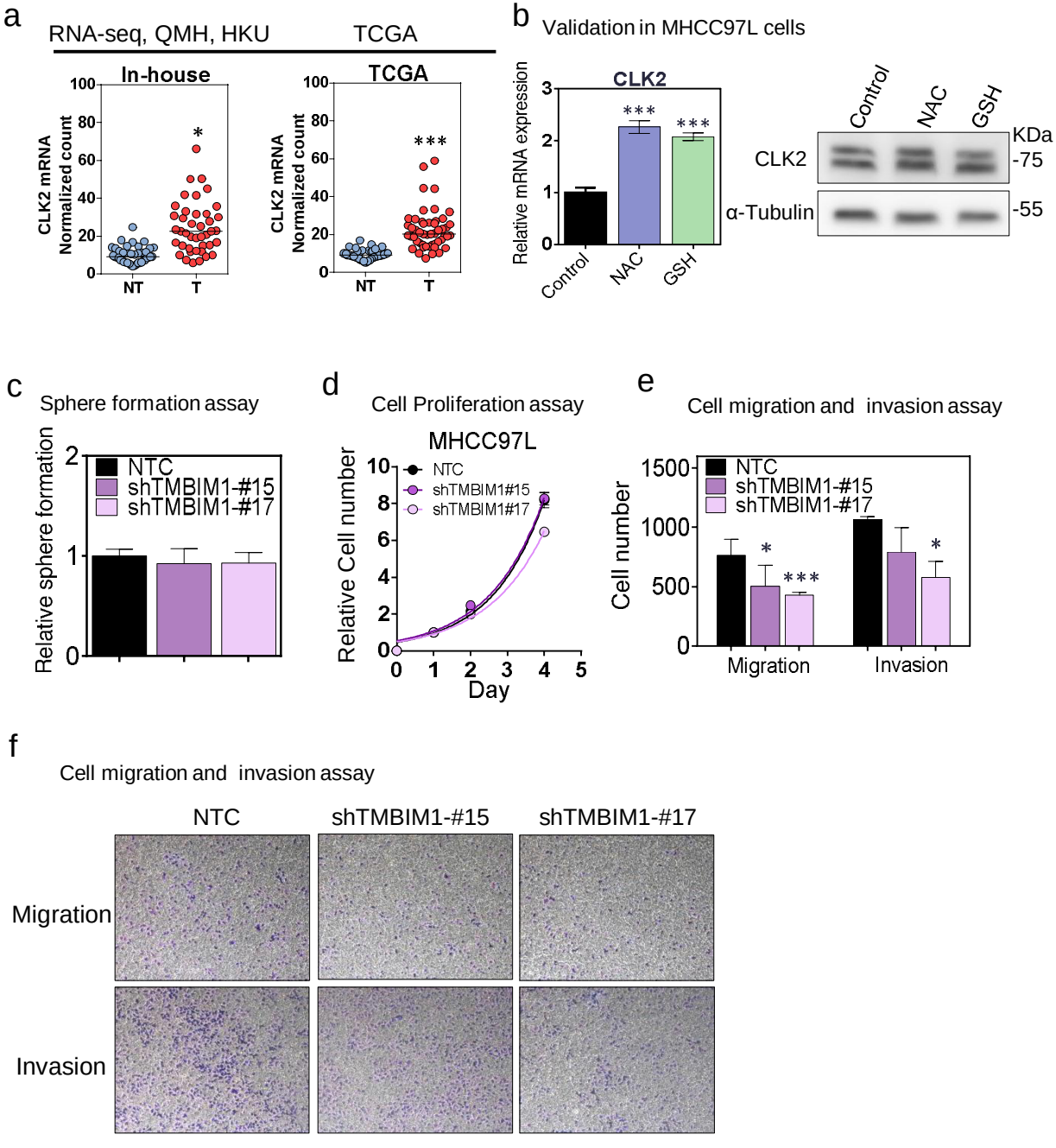


c

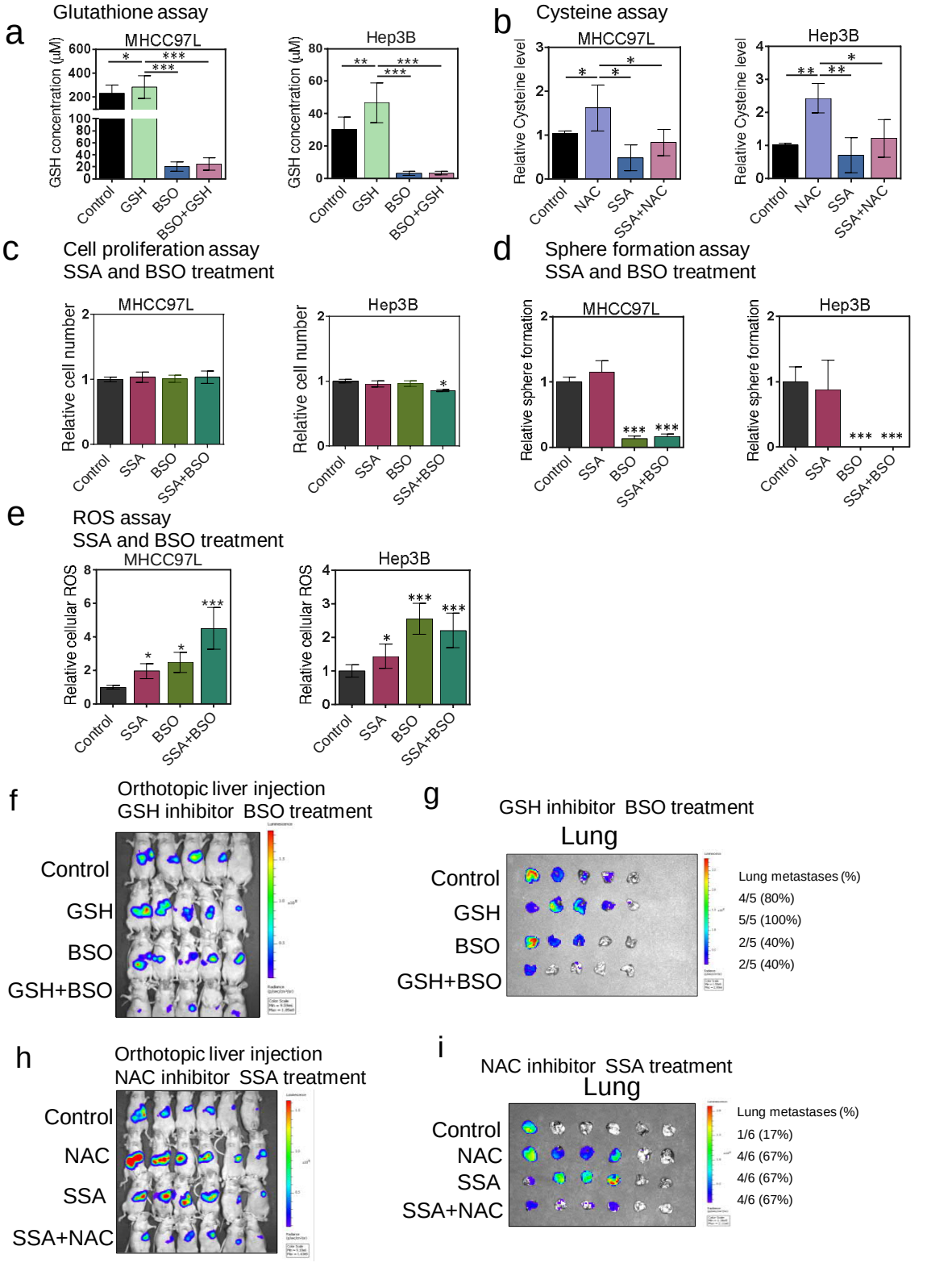




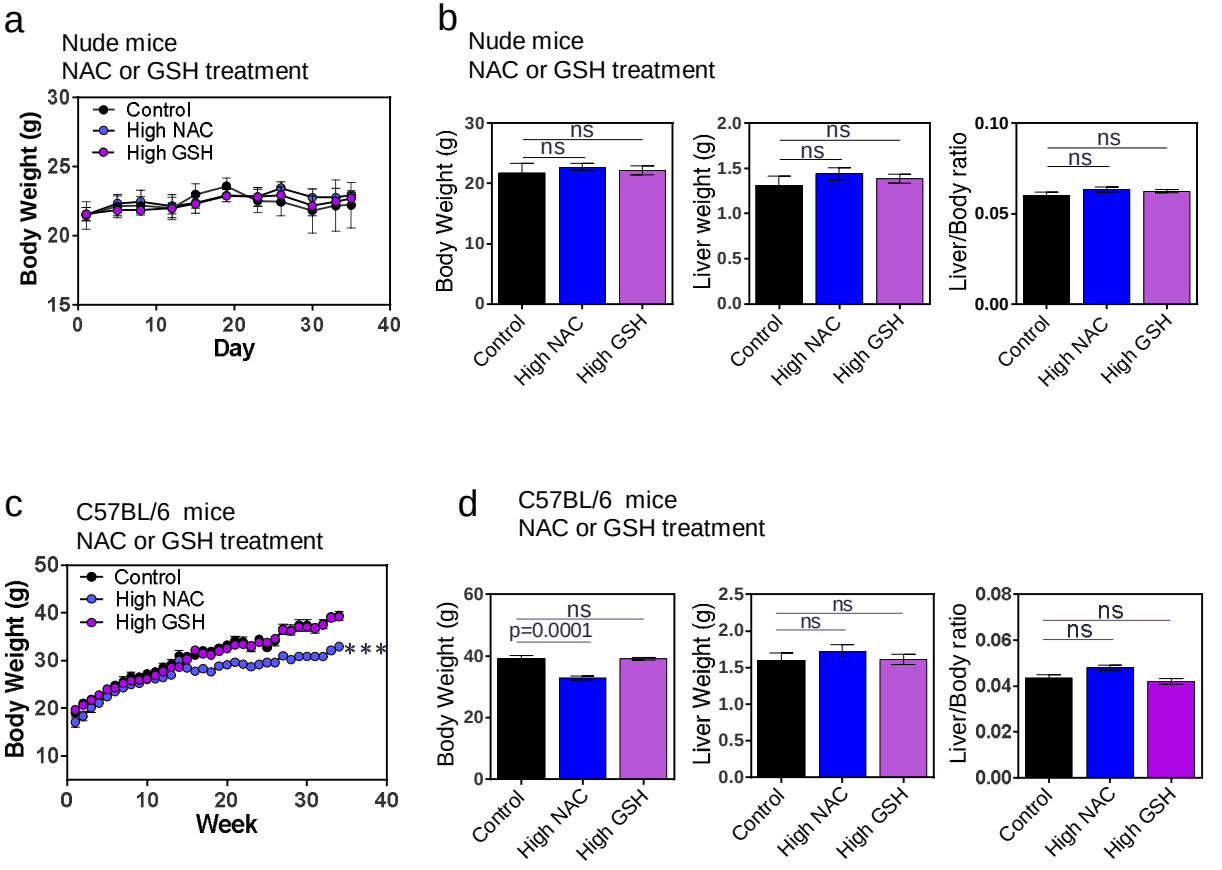
Supplementary Figure 6



Supplementary Figure 7



Supplementary Figure 8



Supplementary Figure 9

Test Results:

DNA Marker	MHCC97L[4]	MHCC97L (L-171218744P)
AMEL	X, Y	X, Y
CSF1PO	11, 13	11, 13
D13S317	8	8
D16S539	12	12
D5S818	12,13	12,13
D7S820	10	10
TH01	9	9
TPOX	8	8
vWA	14	14
D18S51	--	13, 22
D21S11	--	31.2
D3S1358	--	15, 16
D8S1179	--	12, 13
FGA	--	21, 24
Penta D	--	8, 9
Penta E	--	11, 17
Number of shared alleles		12
Total number of alleles in the reference profile		12
Percent match		100%

Comment: The tested cell line has 100% match with MHCC97L. Therefore, they are considered to be related from a common ancestry.

Figure S9. STR authentication of MHCC-97L cells.

Supplementary Figure 10

a

Cell proliferation assay
Sorafenib, SSA and BSO treatment