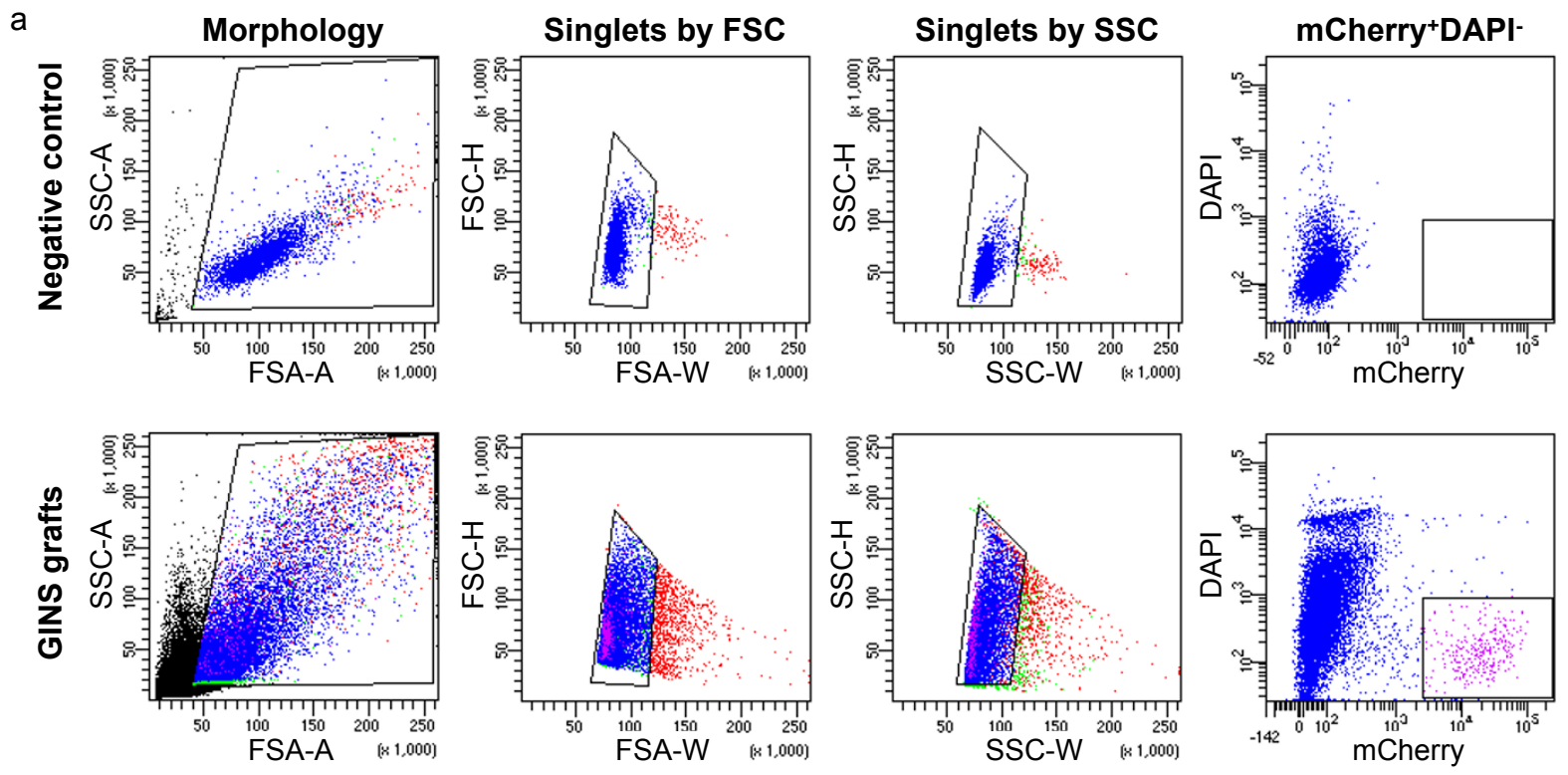


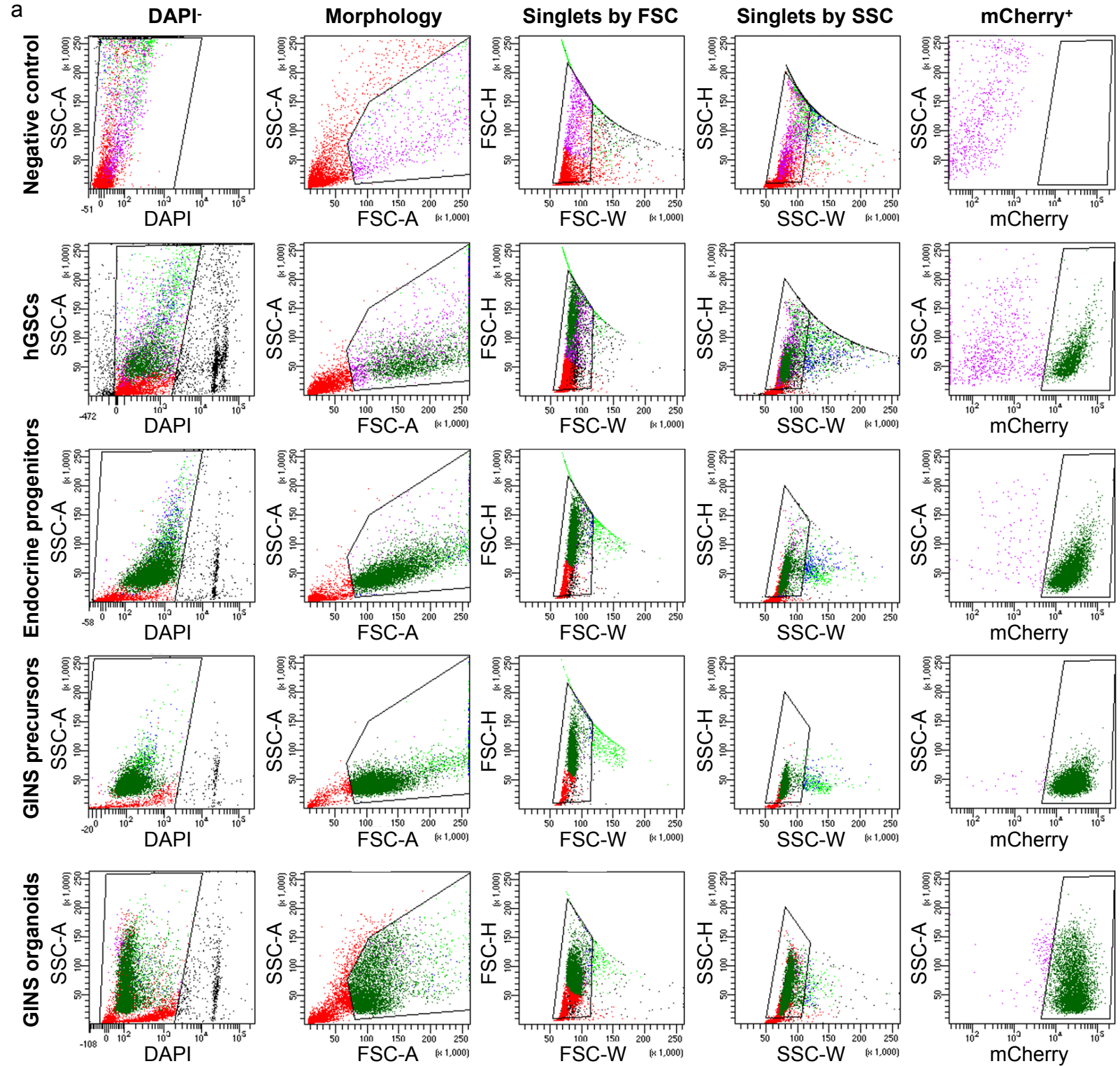
Supplementary Fig. 1 | Flow cytometry gating strategy for GINS organoids.



b GINS grafts statistics

Population	%Parent	%Total
All Events	####	100.0
Morphology	22.2	22.2
Singlets FSC	93.8	20.8
Singlets SSC	89.7	18.7
DAPI- mCherry+	2.1	0.4

Supplementary Fig. 2 | Flow cytometry gating strategy for GINS grafts. a, Sorting for mCherry+DAPI- cells. **b**, Percentage of cell populations.

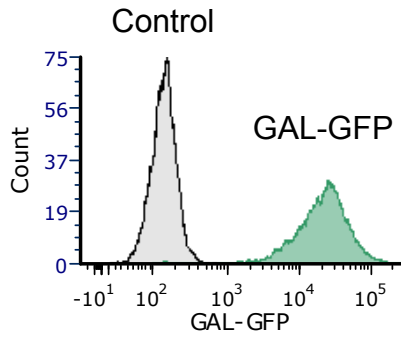
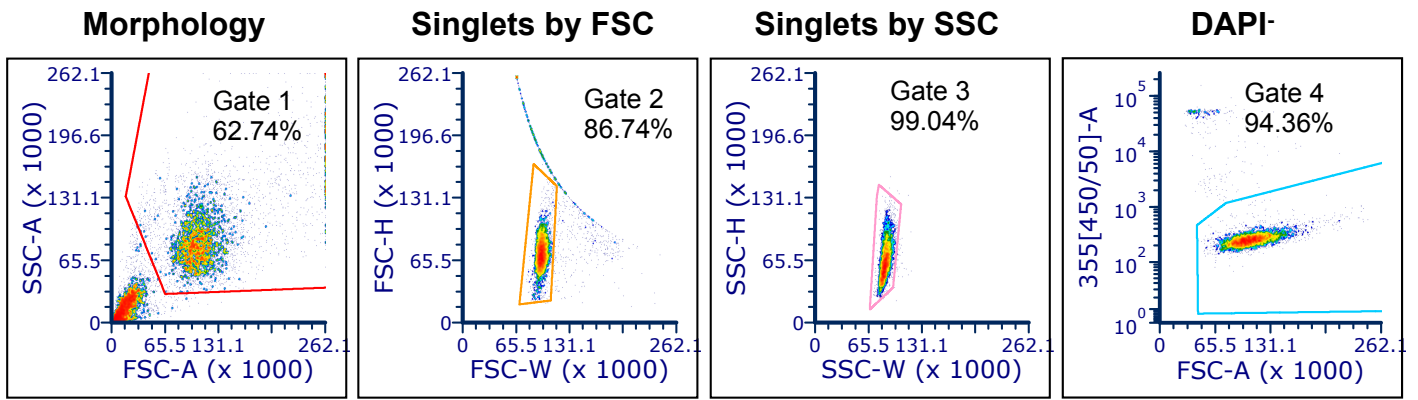


b

hGSC			Endocrine progenitors		
Population	%Parent	%Total	Population	%Parent	%Total
All Events	####	100.0	All Events	####	100.0
Live	77.4	77.4	Live	94.8	94.8
Morphology	47.3	36.6	Morphology	73.9	70.0
Singlet FSC	83.9	30.7	Singlet FSC	95.1	66.6
Singlet SSC	92.7	28.5	Singlet SSC	96.8	64.4
mCherry+	67.6	19.3	mCherry+	98.0	63.1

GINS precursors			GINS organoids		
Population	%Parent	%Total	Population	%Parent	%Total
All Events	####	100.0	All Events	####	100.0
Live	98.0	98.0	Live	94.1	94.1
Morphology	91.7	89.9	Morphology	56.2	52.9
Singlet FSC	96.5	86.8	Singlet FSC	97.0	51.3
Singlet SSC	99.0	85.9	Singlet SSC	99.1	50.8
mCherry+	99.7	85.6	mCherry+	97.2	49.4

Supplementary Fig. 3 | Flow cytometry gating strategy for hGSCs, endocrine progenitors, GINS precursors and GINS organoids. a, Sorting for mCherry⁺DAPI⁻ cells. b, Percentage of cell populations.



Supplementary Fig. 4 | Flow cytometry gating strategy for GINS organoids with GAL-GFP reporter.