



**Supplementary Figure 1** Generation of biotin presenting GSCs. **a** GSC spheres expressed green (BAP-TM vectors) and red (sshBirA vectors) fluorescence efficiently. Bar=250 $\mu$ m (original magnification  $\times$ 100). **b** Positive SA–Alexa647 staining (blue curve) from cells transfected with BAP-TM-IGFP, while not from cells transfected with GFP only (red curve), confirming expression of reporter biotin on cell surface. **c** Higher G-luciferase concentration was detected from medium of transduced GSCs ( $n=6$ ) than from control GSCs ( $n=6$ ). \*\* =  $P<0.01$