

Supplemental Fig. S1 hRGC differentiation from the H9-ESCs. (A) Images shown are representative of different time points for RGC differentiation; tdTomato positive cells at day 20, 26 and 43 indicates successful RGC differentiation. (B) Images shown are the H9-RGCs immunopurified against the surface antigen Thy1.2 and grown on matrigel coated tissue culture dishes. The high overlap between the brightfield and the tdTomato channel indicates highly pure RGC culture. (C) Shown are the confocal immunofluorescence images of H9-RGCs against RGC specific marker RBPMS and neuronal marker TUBB3. Scale bars,  $400 \mu m$  (A, B) and  $20 \mu m$  (C).