



**Figure S3** Spatial expression analysis of *fgf8*, *wnt11* and *foxD3* genes. These genes were downregulated in qPCR analysis of *kcnh1* morphants when compared with controls (Fig. 5b). Representative ISH expression patterns for the corresponding genes in *p53* and *kcnh1* morphant embryos at gastrula stage (80-90% epiboly) (**A**) and early somitogenesis (2-3 somite stage) (**B**) are shown. (**A**) Side view of the embryos with the dorsal side of the embryo facing to the frontal plane. (**B**) The left panel shows a lateral view (anterior to the left, dorsal to the top) of representative ISH expression patterns of the corresponding genes in whole mounted *p53*-MO embryos. Right panels show flat-mount images (anterior to the left). >= ventral neuroectoderm; M=margin cells; T= telencephalon; R2/4= rhombomere 2 and 4; S=somites; PNP= posterior neural plate; ANP= anterior neural plate, N= notochord and TB= tail bud; PCNC= presumptive cranial neural crest; ANP= adaxial neural plate.