

**Supplementary Figure 2.** mRNA injection of human *ACVR1* mutant receptors into *bmp7* mutant embryos. Phenotypes of partially rescued mutant embryos to C4, C3, and C2 dorsalized phenotypes or over-activity of BMP signaling to V1 and V2 ventralized phenotypes. Phenotypes were scored at 24 hpf. Not all phenotypes are shown. Graphical data are shown in Figure 2A.