

**Figure S1: Known regulatory interactions within SOM clusters.** Graph of interactions found in the GEA\_CLR database from the UCSC Interaction Browser between two genes within a single cluster. Orange lines indicate an activating interaction, blue lines are repressing interaction and grey lines are unknown.

## Distance between duplicated gene pairs when both genes are in the SOM

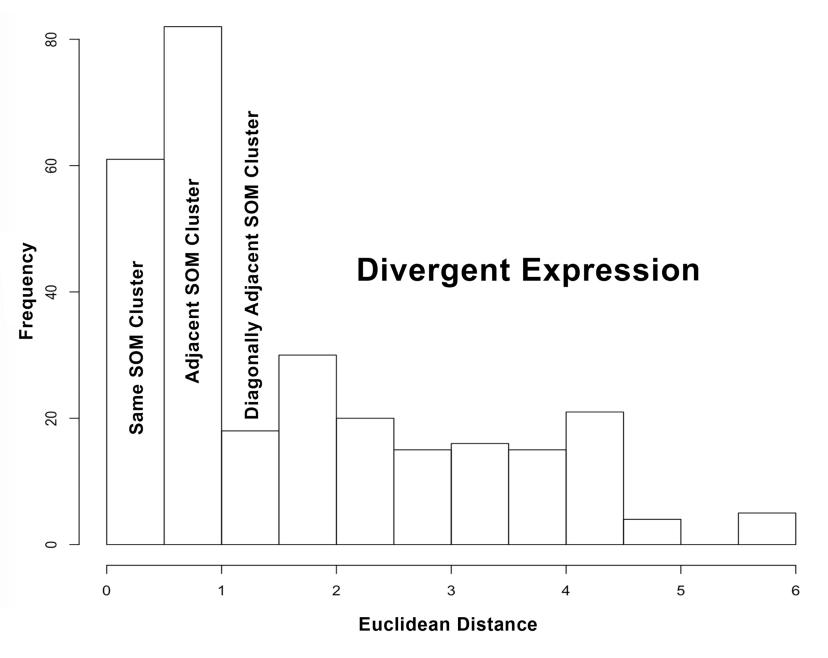


Figure S2: Distance between pairs of duplicated genes in the SOM. A histogram showing the distance between SOM clusters containing duplicate gene pairs arising from the teleost-specific genome duplication event. Distances were calculated using the Euclidean distance between clusters on the SOM grid. Therefore, a distance of 1 indicates that the two genes in the pair were in adjacent clusters, and a distance of 1.4 indicates that the two genes were in diagonally adjacent clusters. Any larger distances indicate that the genes were at least 2 clusters apart.

Table S1. RNAseq data and differential gene expression analysis

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Table S2. SOM clustering analysis

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Table S3. SOM cluster motif enrichment analysis

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Table S4. SOM assignment of Nkx2.5 differentially expressed genes

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Table S5. Hand-curated list of heart markers

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Table S6. SOM cluster assignment of duplicated zebrafish genes

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