

Fig. S1

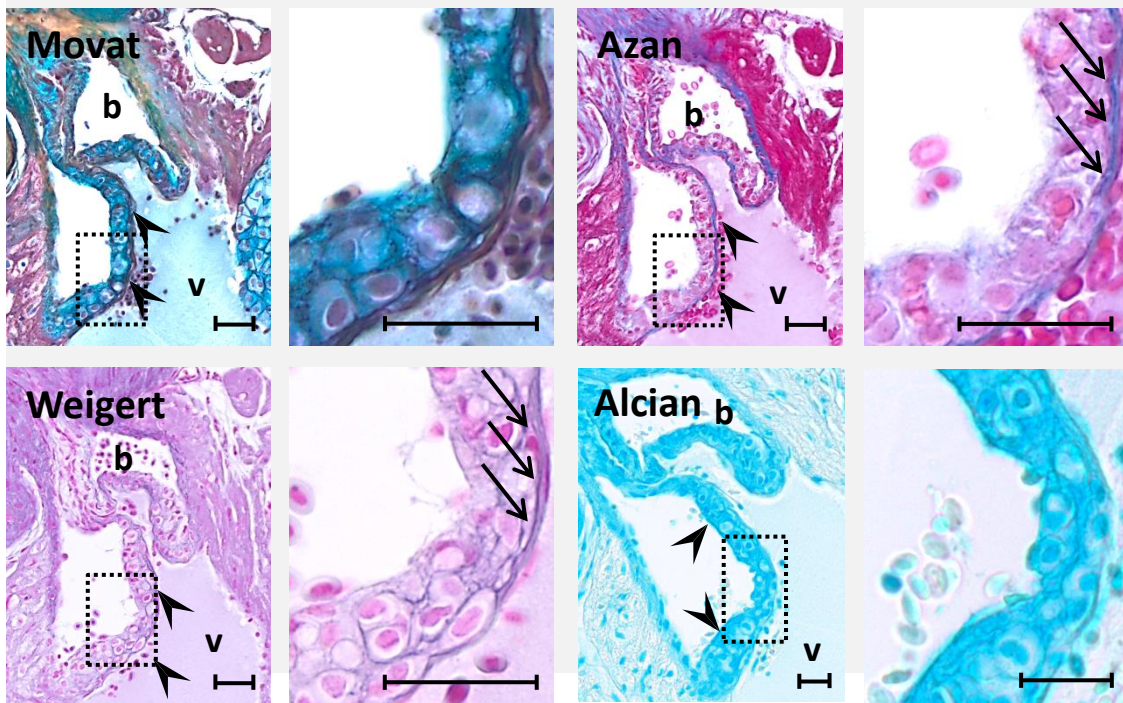


Figure S1: Bulbo-ventricular (BV) valves of adult (2.5-year old) ZF. Leaflets are outlined by arrow heads. Parts of the bulbus are marked by a 'b', while the ventricle is marked by a 'v'. Comparable to the findings in atrio-ventricular valves (Figure 1) large polygonal-shaped cells are found as central element in the base and mid-region of BV valves in ZF. A marginal layer (arrows) of collagen and elastic material locates at the ventricular (inflow) aspect of the BV valves. Strong Alcian blue staining demonstrates presence of a cartilage-like matrix. Squares indicate the regions magnified on the further right photographs. Scale bar equals 25 μm in each photograph. Russel-Movat's pentachrome stain (Movat), Azan stain, Weigert's resorcin-fuchsin stain and Alcian blue stain.

Fig. S2

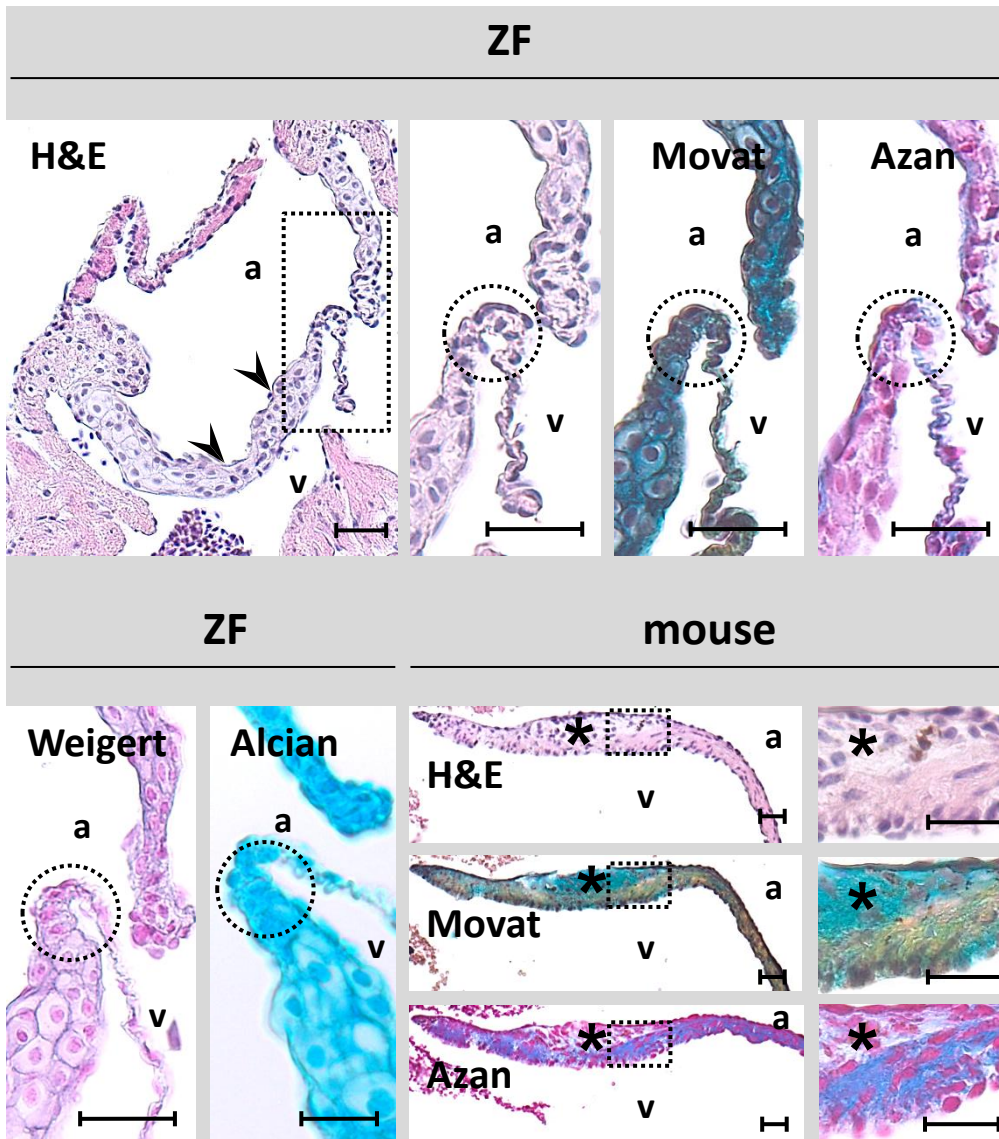


Figure S2: Atrio-ventricular (AV) valves of young adult (1-year old) ZF and mice. Leaflets are outlined by arrow heads. Parts of the atrium are marked by an 'a', while the ventricle is marked by a 'v'. Compared to the large polygonal-shaped cells in the proteoglycan-rich base and mid-region of the AV leaflets (Figure 1) the tip region (circles) characterizes high cellularity of small sized cells. High cellularity is also seen in collagen-free, proteoglycan/ glycosaminoglycan-rich myxomatous changes (asterisks) frequently found in the tips region of murine heart valves. Squares indicate the regions magnified on the further right photographs. Scale bar equals 25 μm in each photograph. Russel-Movat's pentachrome stain, Azan stain, Weigert's resorcin-fuchsin stain and Alcian blue stain.

Fig. S3

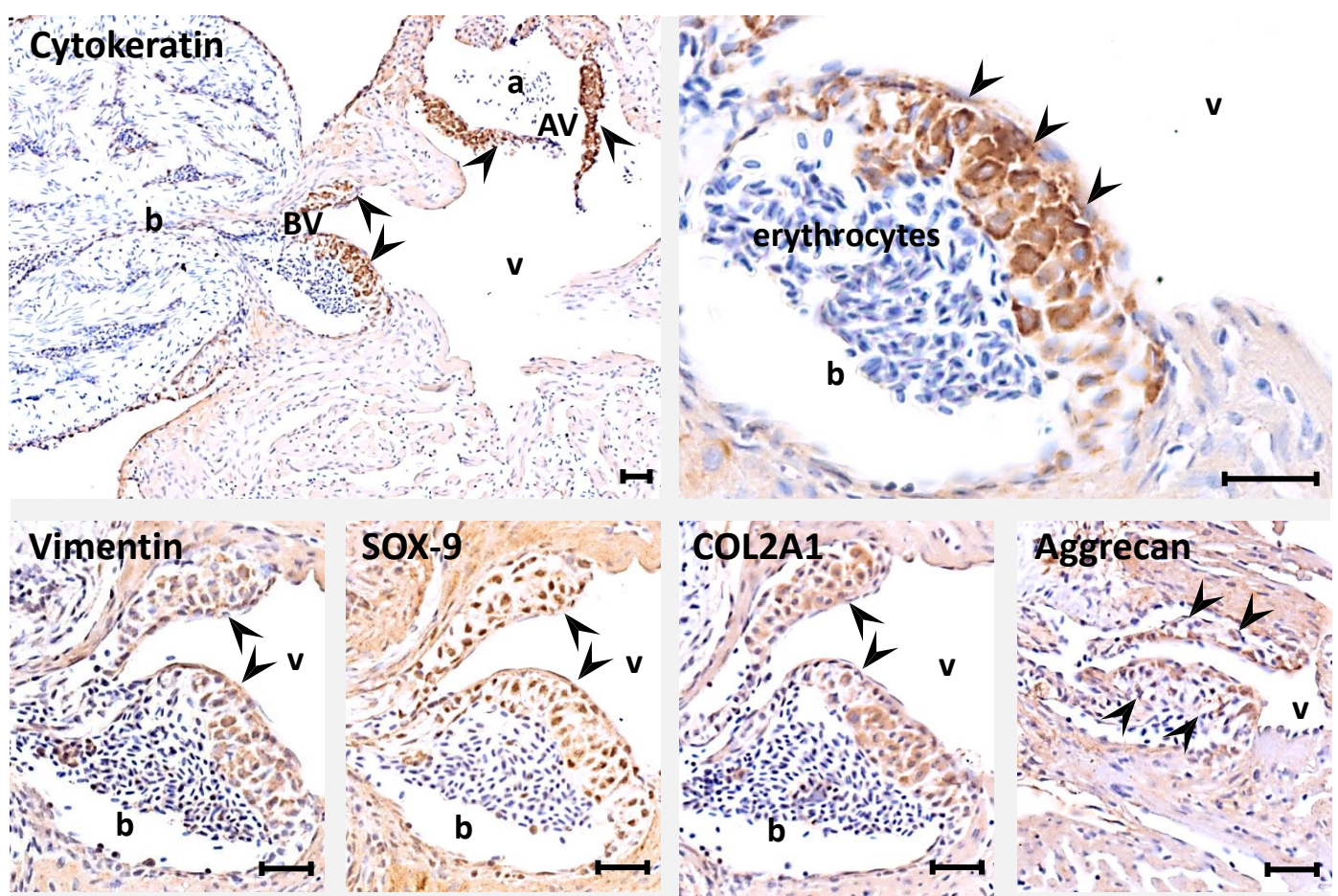


Figure S3: Immunohistochemical staining of bulbo-ventricular (BV) valves in young adult (1-year old) zebrafish (ZF). Leaflets are outlined by arrow heads. Parts of the bulbus are marked by a 'b', the atrium is marked by 'a', while the ventricle is marked by a 'v'. Comparable results are obtained in the central cell sheet to those from atrio-ventricular valves (AV, Figure 2) i.e. co-expression of epithelial (cytokeratin) and mesenchymal (vimentin) markers, SOX-9 staining in the nuclei (circles) and aggrecan and type 2a1 collagen based matrix formation. COL2A1 = type 2a1 collagen. Scale bar equals 25 μ m in each photograph.