

Supporting Information

Fraser et al. 10.1073/pnas.1119635109

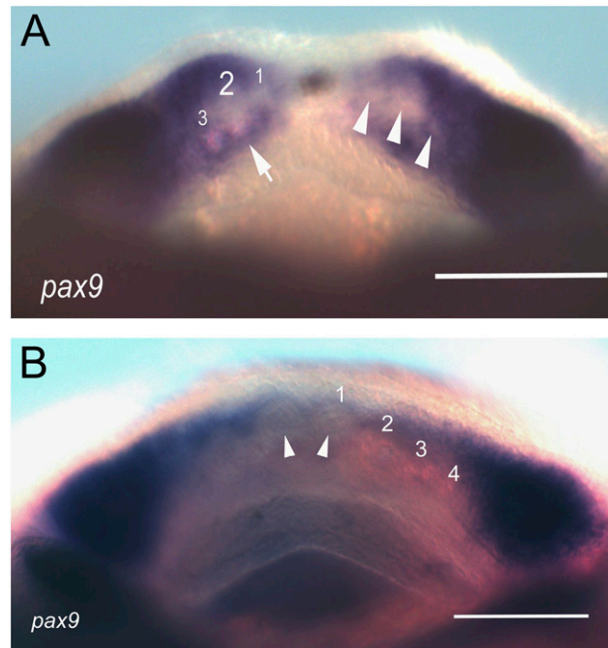


Fig. S1. *pax9* gene expression during development of the first-generation dentition of the pufferfish *Monotretes abei*. Dorsal views of the pufferfish lower jaw are shown. As in all known teleost dentitions, *pax9* is not expressed in cells of the developing teeth. *pax9* expression is observed in the mesenchymal cells surrounding each of the superficial tooth buds. (A) Three initial teeth are developing, with tooth position 2 initiating first, followed by positions 3, 1 (arrowheads in A; tooth position 1 in B indicated by white arrowheads), and 4 (in B). (Scale bars: 50 μm .)

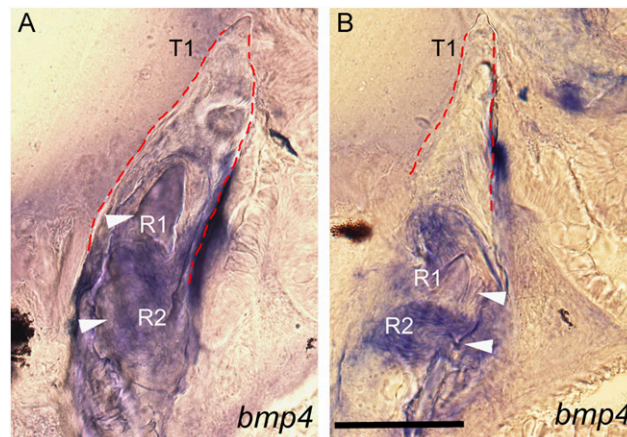


Fig. S2. Expression of *bmp4* during beak morphogenesis in the pufferfish *M. abei*. (A) *bmp4* is expressed in both the epithelium and mesenchyme of the developing dentine bands (white arrowheads). The separate dentine bands are new replacement teeth (R1 and R2) that are compacted to form the beak. The initial teeth (T1; the "first bite") are still present as worn remnants at the beak apex to be replaced by newly developed bands of dentine (R1 and R2). (B) The newly forming second replacement dentine bands (R2) expressing both epithelial and mesenchymal *bmp4*. This expression pattern is identical to that of other known teleost fishes. (Scale bars: 50 μm .)