

Fig. S1. Osteogenic cell dynamics in the *Tcf12*^{-/-} coronal suture. (A, B) Sections of E14.5 embryonic heads stained with antibodies against Sp7 and BrdU, after injecting BrdU into pregnant females two hours prior to harvesting embryos. Counts were performed in the boxed areas, which include the osteogenic fronts of the frontal and parietal bones and the interposed mesenchyme. Wild type: *n* = 5; *Tcf12*^{-/-}: *n* = 6; 5-6 sections each embryo. (C-E) Quantification of Sp7+ osteolineage cells, proliferative Sp7-/BrdU+ cells, and proliferative Sp7+/BrdU+ cells in the boxed regions. Error bars represent the standard error of the mean. P values were calculated using an unpaired two-tailed Student's t-test. Scale bars = 50 μ m.

Table S1. Bone size quantification of conditional *Tcf12^{flox/flox}* mice with *Mesp1:Cre* or *Wnt1:Cre*.

[Click here to download Table S1](#)

Table S2. Sp7 and BrdU⁺ cell count at wild-type and *Tcf12^{-/-}* coronal sutures.

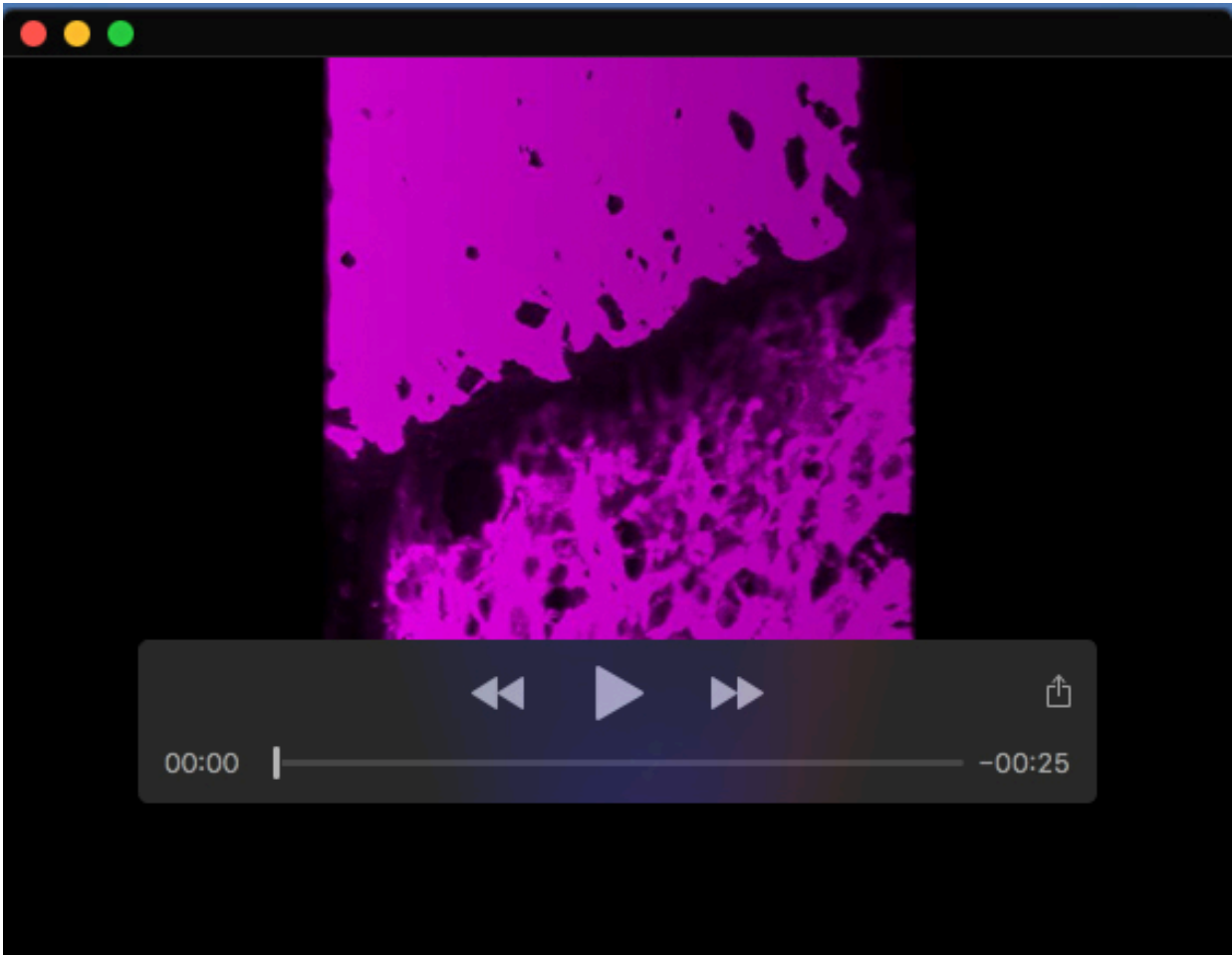
[Click here to download Table S2](#)

Table S3. Gem1⁺ cell count in wild-type and *Tcf12^{-/-}* coronal sutures.

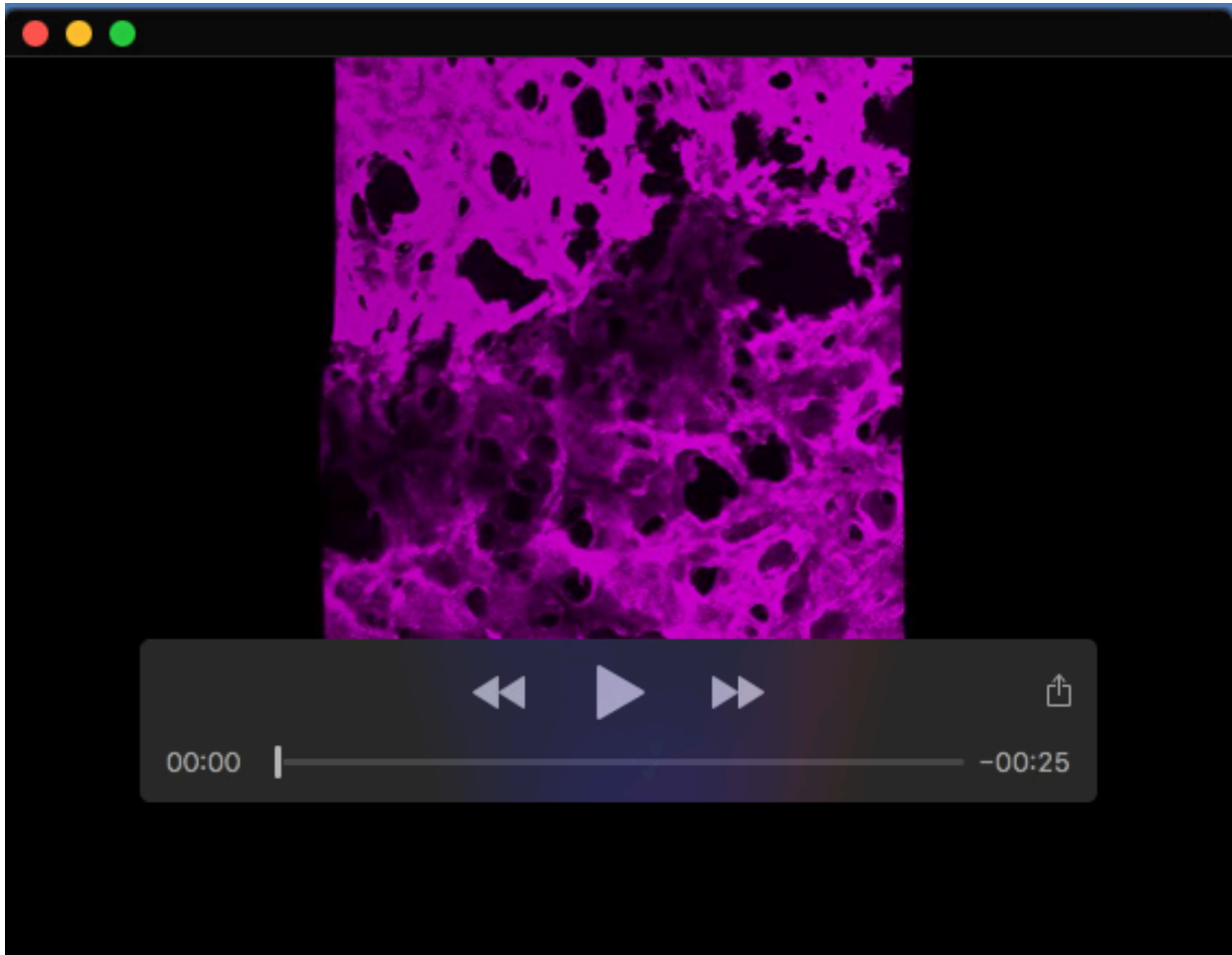
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Table S4. Manual count of Transcript number/nucleus in *Gli1-CreERT2* (*n*=2) and *Tcf12^{flox/flox}; Gli1-CreERT2* for *n*=2.

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Movie 1. Projection of patent region of coronal suture from a $Tcf12^{+/-}$ mouse. 3D Confocal projection of an Alizarin Red-stained $Tcf12^{+/-}$ skull at the coronal suture. The frontal (bottom) and parietal bone (top) is separated by the Alizarin Red-negative zone of suture mesenchyme.



Movie 2. Projection of fused region of coronal suture from a $Tcf12^{-/-}$ mouse. 3D Confocal projection of an Alizarin Red-stained $Tcf12^{-/-}$ skull at the coronal suture. The frontal bone (bottom) and parietal bone (top) is fused together by calcified bone.