**Supplementary File S1**

**Reagents**

* NaCl (Sigma, CAS-No. 7647-14-5)
* NaH2PO4·2H2O (Sigma, CAS-No. 13472-35-0)
* Na2HPO4·12H2O (Sigma, CAS-No. 10039-32-4)
* Ethanol (Sigma, CAS-No. 64-17-5)
* Acetic acid (Sigma, CAS-No. 64-19-7)
* Formaldehyde (Sigma, CAS-No. 50-00-0)
* Tris-Cl (Sigma, CAS-No. 1185-53-1)
* EDTA ·2Na (Sigma, CAS-No. 6381-92-6)
* BSA (BioFroxx, CAS-No. 9048-46-8)
* Skim milk (Wako, Cat. No. 190-12865)
* Agarose, low gelling temperature
* Sample protector for RNA/DNA (TAKARA, Cat. No. 9750)
* Proteinase K (Thermo Fisher, Cat. No. 4333793)
* RNase-Free DNase I (TIANGEN, Cat. No. RT411)
* 10× Tag DNA polymerase Buffer (NEB, Cat. No. B9004S)
* Tag DNA polymerase (NEB, Cat. No. M0267V)
* dNTP (TAKARA, Cat. No. 4030)
* DIG-11-dUTP (Sigma, Cat. No. 11093088910)
* Anti-Digoxigenin-AP, Fab fragments (Sigma, Cat. No. 11093274910)
* MgCl2 (Thermo Fisher, Cat. No. R0971)
* PrimeScript II 1st Strand Cdna Synthesis Kit (TAKARA, Cat. No. 6210A)
* BM Purple AP Substrate, precipitating (Roche, Cat. No. 11442074001)
* DEPC ddH2O

**Equipment**

* Scalpel
* Tweezers
* 0.2 ml, 1.5 ml, 10 ml, 50 ml eppendorf tubes
* Single-edge blade
* Microscope slides
* Coverslips
* Embedding cassettes
* Constant temperature water bath
* Vacuum infiltrator
* S1000 Thermal cycler (Bio-rad,)
* Leica RM2255 microtome (Leica, Nussloch, Germany)
* Microscope

**Reagent setup**

**10× PBS, pH 7.4 (40 ml)** 1.30 M NaCl, 0.03 M NaH2PO4·2H2O and 0.07 M Na2HPO4·12H2O. Dissolve 3.038 g NaCl, 0.187 g NaH2PO4·2H2O and 1.002 g Na2HPO4·12H2O in 40 ml ddH2O. Adjust to the required pH 7.4.

**1× PBS, pH 7.4 (40 ml)** Dilute the stock 10× PBS at 1:10 ratio.

**15 mM EDTA, pH 8.0 (8 ml)** Take 0.0446 g EDTA ·2Na (MV：372.24) and add to 8 ml ddH2O. Adjust to the required pH 8.0.

**Formaldehyde-acetic acid-ethanol Fixative (FAA Fixative)** 2 % Formaldehyde, 5 % Acetic acid, 63 % Ethanol. Prepare fresh and keep on ice.

**Caution** ​The reagent contains volatile hazardous chemicals and should be handled in a fume cabinet with personal protective equipment.

**Block solution (8 ml)** 0.1% BSA, 5% milk. Dissolve 0.008 g BSA and 0.04 g skim milk and add to 8 ml ddH2O.

**Washing buffer 1** 5 % Acetic acid and 63 % Ethanol. Prepare fresh and keep on ice.

**Caution** ​The reagent contains volatile hazardous chemicals and should be handled in a fume cabinet with personal protective equipment.

**Washing buffer 2, pH 9.5 (8 ml)** Take 0.0969 g Tris and 0.07 g NaCl and dissolve in 8 ml ddH2O. Final concentration of buffer should be 0.1 M Tris and 0.15 M NaCl. Adjust to the required pH 9.5. Prepare fresh.

**5% Agarose or 5% Ultra-low gelling agarose** Dissolve 2.5 Agarose or ultra-low gelling agarose in 50 mL 1× PBS.