

● [Xenopus Embryo] Electroporation of Xenopus embryo: Gene Delivery into the Eye Primordium at the Neural Plate Stage

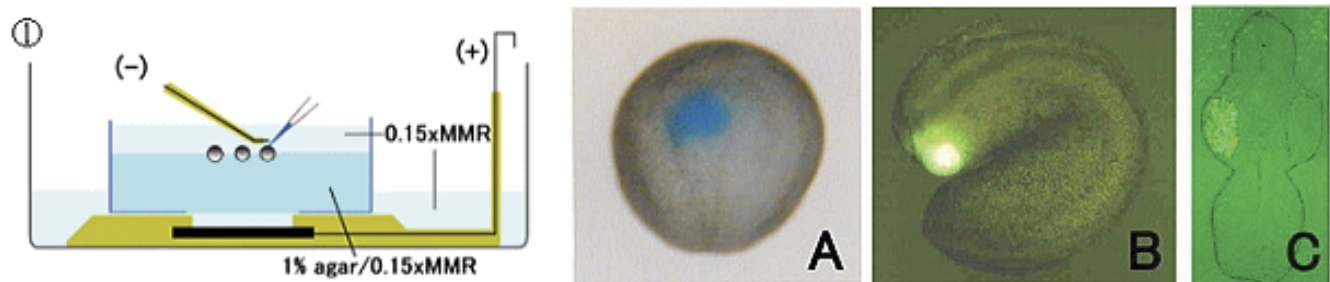


Fig.(1) shows the general setting of the electroporation. Vitelline membrane of the embryo(st.12-13) is usually kept intact. Inject 5-10nl of GFP-mRNA($1 \mu\text{g}/\mu\text{l}$, 0.05% Fast Green) into intercellular space of upper-few epithelial layers of the neural plate, and immediately after injection (leaving the needle in the embryo) the electric shock (20-22V, 5msecON, 95msecOFF, 10 shocks) is given by the micro-electrode.

A: Recognition of the target site by Fast Green just after electroporation. This dye fades away 10-15min later.

B: Expression of GFP at the eye 15-20 hours later.

C: Detection of GFP protein in the eye vesicle by FITC-conjugated immuno-staining of thin section. The local deliveries of mRNAs such as BMP and Shh result in the perturbation of eye development in addition to the up/down regulation of the eye-marker genes.

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