

Cell Type Plant, protoplast

**Molecules Electroported** DNA: plasmids with VP1 maize gene, supercoiled; several promoter / GUS fusions that are activated by VP1.

Species Used Maize cell protoplast, DeKalb XL82 (scutellum), Mpp

**Before the Pulse**

Cell Growth Medium N6 medium

**Growth Phase at Harvest** Mid-log, three days after transfer**Pre-pulse Incubation** DNA plus cells held on ice for 10 minutes prior to electroporation**Wash Solution** Protoplasts made by digesting with enzymes, then washed.**The Pulse****Instruments Used** Gene Pulser® apparatus & Capacitance**Electroporation Temperature** 25 °C, but sample pre-chilled**Electroporation Medium** Not given**Cuvette Gap** 0.4 cm**Cell Density** 4 x 10 (6) cells / ml**Voltage** 0.2 kV**Volume of Cells** 1 ml \*\* (SEE NOTES)**Field Strength** 0.5 kV/cm**DNA Concentration** 20 to 50 µg / pulse**DNA Resuspension Buffer** TE (10 mM Tris, 1 mM EDTA, pH 8.0)**Capacitor** 960 µF**Volume of DNA** 20 to 50 µl / pulse**Resistor** (Pulse Controller) none**After the Pulse****Time Constant** 14 to 16 msec, average**Outgrowth Medium** KMØ medium**Relevant Publications and/or Comments****Note:** exponential values designated in parentheses.  
\*\*Maximum volume for 0.4 cm cuvettes is 0.8 ml; greater volumes will deliver a non-uniform pulse to sample.  
Ref: McCarty, *et al.*, *Cell*, **66**:895-905(1991).**Outgrowth Temperature** 25 °C**Length of Incubation** 40 hours**Selection Method or Assay Used** Fluorescence assay for GUS, luminescence for luciferase**Electroporation Efficiency** Not done**Per Cent Survival** 70 to 80%**Name of Submitter** Leonard Rosenkrans/ Dr. Don McCarty**Institution Address** University of Florida  
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