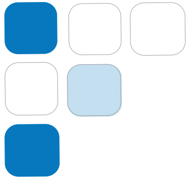

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Short Technical Manual: Running ready-to-use gels in ORIGINS at 55 °C

1. *Prepare 30 mM TAE buffer *(Fig. 1)*
2. *Fill the apparatus with 30 mM TAE buffer 2-3 mm above the upper electrode*
3. *Switch the ORIGINS ON by ON/OFF button. Set the Temperature to 55°C. Set Pump Delay to 1.5 min. Set the Time. Every value has to be confirmed by pressing SET button.*
4. *Pre-heat the gel for 20-25 min *(Fig. 2b)*
5. *Prepare the samples with Elchrom loading buffer*
6. *When samples are ready and temperature reached 47 °C - 48 °C, place the gel in the buffer and fix it with the catamaran frame *(Fig. 3, 4)*
7. *Switch the Pump and the Time OFF. Load the samples quickly and close the lid*
8. *Start Power Supply and Time on ORIGINS ON*
9. *When electrophoresis is completed, take the gel out using the forceps *(Fig.5) and the needle*
10. *Place the gel on the Peel-IT™ and detach it from the plastic backing with nylon string, for faster staining or blotting *(Fig. 6)*
11. *Stain the gel in the Easy Staining tray on the shaker *(Fig. 7)*

**Additional information on the*

40x CONC. TAE BUFFER

Components	*Amount for 1 liter*
Tris (hydroxymethyl) aminomethane	*145.37 g*
$Na_2EDTA \cdot 2\ H_2O$	*11.16 g*
Acetic Acid (glacial)	*34.4 ml*

Fig. 1a

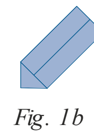

Fig. 1b

1. Dilute 50 ml of 40xTAE stock solution (PIN 3031) to 2 l with dH_2O. *(Fig. 1a)*

2. The level is marked on the left side of the ORIGINS. *(Fig. 1b)*

3. Set temperature to 55°C.
1. Move the cursor to set temperature value
2. With up and down arrows choose the temperature of 55°C.
3. Press SET button to confirm settings.

Settings are saved for subsequent runs!

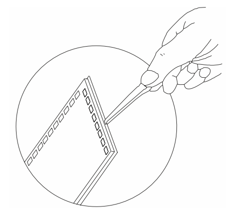

Fig.2a

Correct Position of the gel

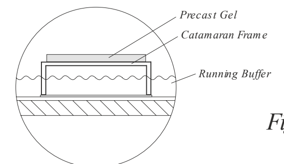

Fig. 2b

4. Cut the alu bag on one side. Take the plastic bag with the gel out, and cut the plastic bag on 3 sides. Peel the plastic off. Grip the gel with forceps at the plastic backing overhang *(Fig. 2)*. Place the gel ON THE CATAMARAN FRAME IN the ORIGINS and close the lid. *(Fig. 2b)* Gels should not be placed in the buffer to avoid equilibration between special buffer in the gel and the running buffer.

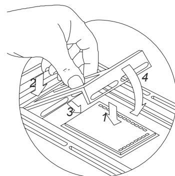

Fig. 3

5. 1 ml of 5x conc sample. Loading buffer (LB) is provided in every box of gels. It should be diluted with the sample 4 to 5 times. E.g. for EtBr staining 4µl of PCR is mixed with 1µl of conc. LB. For SYBR staining 1µl of PCR is mixed with 3µl of ddH_2O and 1µl conc. LB. Special Loading buffer: PCR Loading buffer, (P/N 3032) can be added to the PCR master mix. After the PCR, samples are directly loaded to the gel.

Correct Position of the catamaran

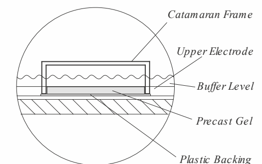

Fig. 4

6. Catamaran frame should be placed on the plastic backing overhang, not on the gel *(Fig. 3, 4).* A needle can be used to move the gel. Rinse the sample wells with TAE buffer with pipettor if air bubbles are present.

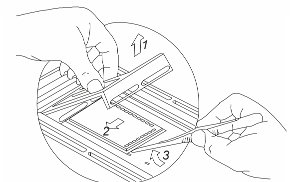

Fig. 5

7. Switch the Pump and Time OFF before loading the gel. For loading Wide Mini gels, a Multichannel pipettor is recommended. Optimal loading volume is between 4-8 µl; Minimum is 4µl; Maximum loading volume for Minigels is 18 µl; 14 µl for Wide Mini S-2x25; S-4x25; S-2x104L; S-2x200 and 25 µl for S-2x13; S-4x13 and S-2x 104 gels.

8. Recommended voltage is 120 V (10 V/cm, cm = Distance between the electrodes). Amperage is always set to 2 A (maximum). Time is calculated with EL Quant program:
www.elchrom.com/programs/elquant_parameters.php

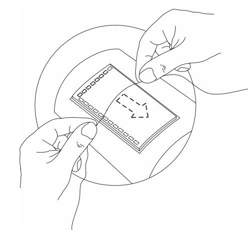

Fig. 6

9. To remove the gel use a needle to lift the edge of the gel. To avoid damage of the electrodes always move the gel parallel to the long axis of the apparatus.

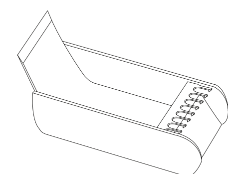

Fig. 7

10. Nylon string is provided in every box of gels, Instead of Peel-IT™ *(Fig. 6),* any 1 or 2 l glass bottle can be used. Bottle need to be fixed to stay in place.

11. It is recommended to cover the Easy staining tray *(Fig. 7)* to protect the gel from light during staining (15 - 40 min) and destaining (optional).

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