E-Gel® *48* Agarose Gels

Cat. nos. G8008-01, G8008-02, G8008-04

Rev. Date: 21 February 2011 Part no. 25-0626 MAN0001550

QUICK REFERENCE CARD

Follow these instructions to use E-Gel® *48* Gels with the E-Base™ device. For more details, refer to the E-Gel® Technical Guide available at www.invitrogen.com or contact Technical Support.

Prepare Samples

Use 20–100 ng DNA per band for samples containing one unique band or up to 500 ng per lane for samples containing multiple bands.

Prepare DNA samples in a total sample volume of 15 µL for E-Gel® *48* Gels in de-ionized water or loading buffer (recommended final loading buffer concentration is 10 mM Tris-HCl; 1 mM EDTA, pH 7.5; 0.005% bromophenol blue; and 0.005% xylene cyanol FF).

Dilute high salt samples (samples containing >50 mM NaCl, >100 mM KCl, >10 mM acetate ions, >10 mM EDTA), 2- to 20-fold in deionized water, TE, or loading buffer in a final volume of 15 µL.

Select Program on E-Base™ Device

1. Plug the Mother E-Base™ device to an electrical outlet. Connect a Daughter E-Base™ device to a Mother E-Base™ device or another Daughter E-Base™ device.
2. Select program EG by pressing and releasing the pwr/prg (power/program) button on the base. Change the default run time of 12 minutes to 17 minutes (E-Gel® *48* 4% gels) or 20 minutes (for E-Gel® *48* 1% and 2% gels) by pressing and holding the time button until the time is displayed.

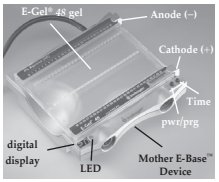
Load E-Gel® Agarose Gels

Load each gel within 30 min of removing gel from the pouch and run within 15 min of loading.

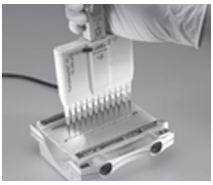
1. Remove the gel from the pouch. Remove the comb from the gel.
2. Slide gel into the two electrode connections on the Mother E-Base™ or Daughter E-Base™. If gel is properly inserted, a fan in the base begins to run, a red light illuminates, and digital display shows 20 minutes.
3. Load 15 µL DNA sample into each well of an E-Gel® *48* gel. Keep all sample volumes uniform. Load samples manually or with a multichannel pipettor.
4. Load DNA markers in marker wells. Ensure the marker salt concentration is similar to that of adjacent samples.
   - For 1% gels, use E-Gel® High Range, 1 Kb Plus, or 500 bp DNA Ladders.
   - For 2% gels, use E-Gel® Low Range Quantitative, 100 bp, or 50 bp DNA Ladders.
   - For 4% gels, use E-Gel® Low Range Quantitative, 50 bp, or 25 bp DNA Ladders.
5. Load 15 µL of sample buffer containing the same salt concentration as the sample into any empty wells.

Step 1

Steps 2



Steps 3–5



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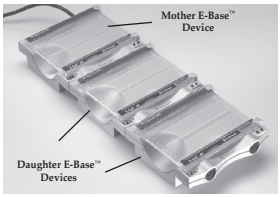
For technical support, email tech_support@invitrogen.com.
For country-specific contact information, visit www.invitrogen.com.

Run Conditions



1. To begin electrophoresis, press and release the pwr/prg button on the Mother E-Base™ and Daughter E-Base™ device. The red light changes to green.
2. At the end of the run (signaled by a flashing red light and rapid beeping), press and release the pwr/prg button to stop the beeping and flashing red light.
3. Remove gel cassette from the base and analyze results.
4. To capture a digital image of the gel, scan the gel on a flatbed scanner or use a UV transilluminator equipped with a digital camera.
5. Analyze the image and align or arrange lanes in the image using the E-Editor™ 2.0 software available for free at www.invitrogen.com/egels

Trouble-shooting

Observation	Cause	Solution
No current	Cassette improperly inserted or is defective/expired	Remove the gel cassette and re-insert the cassette correctly. Use a fresh cassette.
	Only Daughter E-Base™ device used	Daughter E-Base™ device cannot connect to an outlet. Always use it with a Mother E-Base™ device.
Poor resolution or smearing of bands	Sample overloaded	Do not load more than 20–100 ng of DNA per band in a volume of 15 µL.
	High salt samples	Dilute your samples 2- to 20-fold as described in the E-Gel® Technical Guide.
	Sample not loaded properly or low sample volume loaded	Do not introduce bubbles while loading samples. For proper resolution, keep all sample volumes uniform and load water into empty wells.
Sample leaking from wells	Sample overloaded	Load 15 µL of sample per well. Use the Two-Step Loading method (refer to the E-Gel® Technical Guide).
Slanted bands in marker lanes	Differential salt concentration in adjacent lanes	Prepare the marker in a buffer containing the same salt concentration as the samples.
Wavy bands	Differential salt concentration or empty wells in adjacent lanes	Load 15 µL of sample buffer into any empty wells. Salt concentrations and volumes should be uniform in all wells.

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