

ClearBand 6x DNA Loading Dye Green

Troubleshooting Guide

5 x 1 mL, 5 x 5 mL

Cat No: DLD-6xG, DLD-6xG5

Use this guide for common sample-loading and migration-tracking problems encountered with ClearBand 6x DNA Loading Dye Green. The premixed dye contains Xylene Cyanol FF and Orange G; Orange G migrates around the 50 bp region in agarose gels and is intended to avoid the dark shadow around the 400 bp region associated with Bromophenol Blue.

Before You Start - Quick Checks

1. Use 1 volume of 6x Loading Dye Green with 5 volumes of DNA sample.
2. Mix the dye and DNA sample thoroughly but gently before loading.
3. Load the prepared sample directly into the gel well.
4. Use Orange G migration around ~50 bp as an approximate tracking reference in agarose gels.
5. The Green formulation is useful when a Bromophenol Blue shadow near ~400 bp would interfere with PCR-fragment visualization.
6. Store at 4-8°C or room temperature; the datasheet states stability for 1 year.

Problem	Most likely cause	Recommended action
Sample does not sink or is difficult to load	The loading dye may be under-dosed, over-diluted, or incompletely mixed with the DNA sample.	Use the specified 1 volume dye to 5 volumes DNA sample and mix evenly before loading.
Orange G front is difficult to see	Too little dye may have been added or the tracking front may already have migrated close to or beyond the gel edge.	Recheck the 1:5 ratio and monitor the run with the approximate ~50 bp migration behavior of Orange G in mind.
Tracking dye is excessively intense	The 6x dye may have been added at greater than the specified ratio.	Maintain a 1:5 dye-to-sample ratio so the loading dye is used at its intended final concentration.
Small DNA fragments are close to the Orange G front	Orange G migrates around the 50 bp region in agarose gels.	Interpret very small fragments with the Orange G migration position in mind and stop electrophoresis before the region of interest runs off the gel.
A dark shadow near ~400 bp was expected but is absent	The Green formulation uses Orange G rather than Bromophenol Blue and is designed to avoid the dark shadow near the ~400 bp region.	This is expected behavior and is useful for PCR products that migrate near the Bromophenol Blue region.
DNA migration varies between samples	Sample preparation or dye-to-sample ratios may differ between tubes.	Use the same 1:5 ratio for all samples, mix consistently, and load comparable volumes into intact wells.
Tracking dyes run at positions different from expected	Tracking-dye positions are approximate and can vary with gel matrix and electrophoresis conditions.	Treat the ~50 bp Orange G position as a tracking reference rather than a molecular-size standard.
Sample spills from the well	The well may have been damaged or the sample dispensed too rapidly.	Load slowly into the center of the well and avoid piercing the gel with the pipette tip.
Cross-contamination between samples	Pipette tips or handling surfaces may have contacted more than one DNA sample.	Use a fresh sterile tip for each sample and maintain a clean loading area.
Performance changes after storage	The stock may have been stored beyond the stated stability period or under inconsistent conditions.	Store at 4-8°C or room temperature and use within the stated 1-year stability period.

Still having trouble? Recheck the 1:5 loading ratio and confirm that Orange G, rather than Bromophenol Blue, is the intended tracking dye for the assay. Prepare a fresh sample/dye mixture and monitor the low-molecular-weight tracking front during electrophoresis.