

New visible and selective DNA staining method in gels with tetrazolium salts

Paredes, Aaron J.

Naranjo-Palma, Tatiana

Alfaro-Valdés, Hilda M.

Barriga, Andrés

Babul, Jorge

Wilson, Christian A.M.

© 2016 Elsevier Inc. DNA staining in gels has historically been carried out using silver staining and fluorescent dyes like ethidium bromide and SYBR Green I (SGI). Using fluorescent dyes allows recovery of the analyte, but requires instruments such as a transilluminator or fluorimeter to visualize the DNA. Here we described a new and simple method that allows DNA visualization to the naked eye by generating a colored precipitate. It works by soaking the acrylamide or agarose DNA gel in SGI and nitro blue tetrazolium (NBT) solution that, when exposed to sunlight, produces a purple insoluble formazan precipitate that remains in the gel after exposure to light. A calibration curve made with a DNA standard established a detection limit of approximately 180 pg/band at 500 bp. Selectivity of this assay was determined using different biomolecules, demonstrating a high selectivity for DNA. Integrity and functionality of the DNA recovered from gels was determined by enzymatic cutting with a res