Check the product label for actual catalog number, lot and expiry date.

PCRbeam™ Fast PCR Detection Kit

CAT.#	SIZE	COMPONENTS	COMPONENT COMPOSITION
PDK0101	50 tests	50x 1 - PCRbeam™ Membrane Strips 10 ml - PCRbeam™ Detection Buffer	PCRbeam™ Membrane Strips are coated with biotin-ligand (for test band) and anti-FITC antibody in gold conjugate. PCRbeam™ Detection Buffer is Tris-buffered saline.

Storage *In the dark dry place at +4°C. Container with membrane sticks shall be always closed to protect from humidity.*

APPLICATIONS

- Low throughput PCR, LAMP, RPA based tests
- Sensitive detection of specific amplification products
- Fast and 20x more sensitive alternative to EtBr stained gels
- Economical alternative to qPCR-based detection

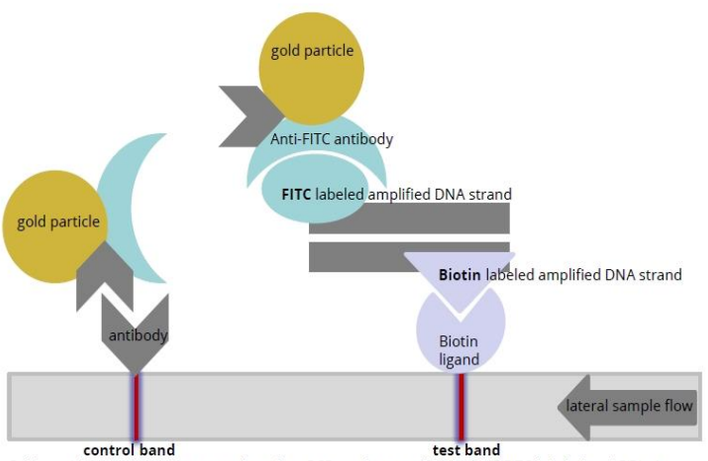
BENEFITS

- Sensitive detection of PCR, LAMP, RPA gene-specific products
- No gel loading after PCR, no ethidium bromide handling
- Saved costs compared to qPCR-based detection methods
- Fast and easy procedure with little hands on time

PRODUCT DETAILS

highQu PCRbeam™ Fast PCR Detection Kit is a convenient tool for fast detection of gene-specific amplification products obtained by PCR, LAMP or RPA. The detection is based on immunological reaction driven by Biotin and FITC (fluorescein isothiocyanate), thus the amplified DNA shall include Biotin and FITC labels. The PCR amplification has to be performed with one primer labeled with FITC at 5'-end and one primer labeled with Biotin at 5'-end. Alternatively the use of one of the labeled primers can be replaced by gene-specific FITC or Biotin labeled probe. Kit includes PCRbeam™ Membrane Strips that are coated with biotin-ligand on the test band and an anti-rabbit antibody on the control band. The bottom part of the strip which is used for sample application contains an anti-FITC antibody attached to gold particles. PCRbeam™ Detection Buffer is Tris-buffered saline enabling the detection.
The PCRbeam™ Fast PCR Detection Kit can be applied for established tests or home-brew assays as a fast and sensitive yes/no detection method. The detection sensitivity is up to 100 fold higher than the one achievable with ethidium bromide stained gels what provides an environment friendly save and economical alternative to the use of mutagen stains.
For establishing sensitive PCR-based tests before PCRbeam™ detection we recommend the use of hot-start PCR enzymes or master mixes, like highQu ALLin™ Hot Start Taq Mastermix or ALLin™ Hot Start Taq DNA Polymerase.

PRINCIPLE



The membrane strip is soaked for 10 minutes into the vial with the detection buffer mixed with PCR product. The lateral sample flow driven by gold particles moves the solution up the strip. FITC labeled DNA strand binds with the anti-FITC antibody on the gold particle and Biotin labeled DNA strand is caught by Biotin ligand attached to the test band. As both DNA strands remain hybridized at room temperature, the test band builds an aggregate that develops red-blue color. Excess gold particles that were not caught by FITC move up the strip and the anti-FITC antibody binds to the anti-rabbit antibody to develop the red-blue colored control band.
If there is no PCR product in the reaction, then only the control band will be visible. If there is a specific product, the test band will be colored as well.

NOTES

- Optimize and perform PCR with one primer labeled with FITC at 5'-end and one primer labeled with Biotin at 5'-end.
- Apply the PCRbeam™ Fast PCR Detection Kit only for well-established PCR assays, as a yes/no detection tool.
- Up to 5 pg DNA can be detected using PCRbeam™ Kit.
- Before starting detection procedure warm the PCRbeam™ Membrane Strips and PCRbeam™ Detection Buffer at room temperature for 5 minutes.
- Avoid carrying over the mineral oil when pipetting the PCR products for detection. Oil interferes with detection as it affects the lateral flow of the sample.

PROTOCOL

- Pipet 100 µl of the PCRbeam™ Detection Buffer into the plate or into the marked empty PCR vials.
- Add 5-10 µl of PCR product into each vial with detection buffer. Mix by gentle pipetting. Use up to 20 µl of the PCR mixture in case low yield is suspected.
- Insert the PCRbeam™ Membrane Strip into each vial so that the indicated spot for sample is soaked in the liquid.
- Incubate at room temperature for 2-10 min until the control band (if positive, the test band as well) gets red-blue color.
- Interpret the results immediately as yes (2 bands: control and test) or no (1 control band), independently on the intensity of the color of the bands.

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