

RAPID DETECTION OF PCR PRODUCTS BY A MICROFABRICATED DEVICE

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We developed a high-speed electrophoresis device using microfabrication technology. This device consists of disposable channel-contained plastic chip, reagents including polymer matrix and size standards, and EtBr fluorescence detector. This electrophoresis device is computer-controlled and results could be automatically analyzed by provided software. The device is cheaply assembled since the semiconductor element was used in the optical system (illuminant & detector) and the device is totally miniaturized. The available chip is plastic-made (PMMA: polymethyl metacrylate: 70 mm X 50 mm: Hitachi Chemical Co., Ltd made a chip). During analysis, channel (width 0.1 mm, depth 0.04 mm, length 45 mm) is at first filled with hydroxypropyl methyl cellulose of 0.6%. A separation of a DNA size-marker and a PCR product will be finished in 4 minutes. This system is especially applicable for DNA analysis of Multiplex PCR product or for detection of polymorphic region. Beginning in September 2000, we will begin its sales in Japan for a price of ¥ 1,500,000.

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