

MULTI-CHANNEL FLUORESCENCE DETECTION DEVICE

ABSTRACT OF THE DISCLOSURE

The multi-channel fluorescence detection device includes an illumination module, plural heating chambers, a detection module and a transmission module. The illumination module includes at least one light source, plural different types of excitation filters and a first rotational drum, wherein the light source provides a broad band illumination, each of the excitation filters passes light at a particular band width for exciting a targeted fluorescent probe, and the first rotational drum carries the excitation filters. The plural heating chambers are adapted for accommodating PCR tubes having samples and the targeted fluorescent probes. The detection module includes plural different types of emission filters, a second rotational drum and at least one photo-detector, wherein each of the emission filters passes light at a particular band width, the second rotational drum carries the emission filters, and the photo-detector receives fluorescent signals and converts the fluorescent signals to electrical signals. The transmission module includes an actuator connecting with the first and the second rotational drums to drive rotations of the first and the second rotational drum simultaneously for switching and synchronizing the excitation filters and the emission filters to match specific wavelengths of the targeted fluorescent probes.

Fig. 3