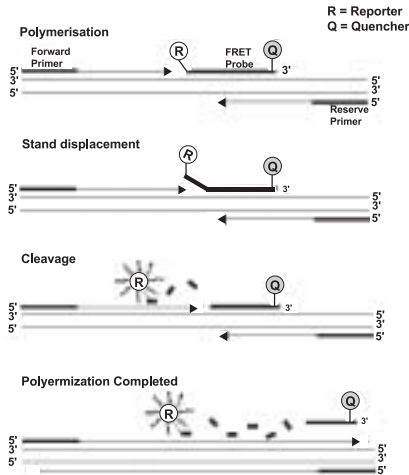


# Amplification Products for PCR and RT-PCR

## Real-Time PCR Applications

### Primers and FRET probes



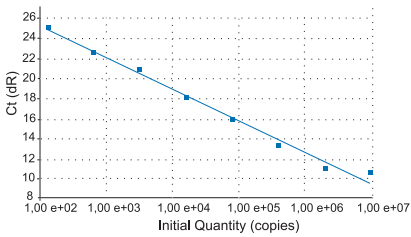
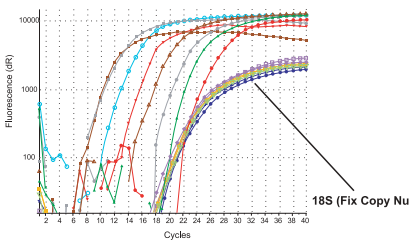
This section includes FRET probes, primers and positive controls for quantitative Real Time PCR.

Pre-qualified Real Time PCR FRET probes are double HPLC purified oligonucleotides, containing a reporter dye at 5' end and a quencher dye at the 3' end. The quencher dye, Black Hole Quencher™ has no native fluorescence, and can efficiently quench fluorescence over the entire visible spectrum. The FRET probes have been fully quality controlled tested with corresponding primer set and positive controls. The primer/positive control set Real Time PCR has a specially formulated noise to signal ratio to give the optimized fluorescence with minimized background.

The PCR reaction acts on the 5'-nuclease activity of *Taq* DNA Polymerase to cleave a FRET probe during PCR.

The FRET probe contains a reporter dye at its 5'-end and a quencher dye at its 3'-end. During the course of the Real Time PCR reaction, cleavage of the probe separates the reporter dye from the quencher dye and results in increased fluorescence of the reporter dye. The increase in PCR products can thereby be detected by observing the increase in fluorescence of the reporter dye, as illustrated below. When the probe has not been cleaved, the proximity of the reporter dye to the quencher dye effectively suppresses the reporter fluorescence primarily by Forster-type energy transfer (Forster, 1948; Lakowicz, 1983).

If the target gene of interest is present during PCR, the probe will specifically anneal between the forward and reverse primer sites. The *Taq* Polymerase will cleave the probe between the reporter and quencher sites in every cycle only if the probe has hybridized to the target gene.



See more information about Black Hole Quenchers in section Biochemistry/Labeling

Kits Component :

**Primer/Positive control kit**  
 Optimized buffer (chemicals, enhancer, dNTPs)  
 Primers  
 Positive control  
 ddH<sub>2</sub>O

**FRET probe kit**  
 FRET probe

**Multiplex Primer/Positive control kit**  
 Optimized buffer  
 Specific primers  
 HKG primers  
 Specific positive control  
 HKG positive control  
 ddH<sub>2</sub>O

**Multiplex FRET probe kit**  
 Specific FRET probe  
 HCK FRET probe

D.64



For order of Virus/bacteria Multiplex kit, please precise the housekeeping gene "internal control" (internal control is a short synthetic oligo fragment to be used for real time PCR quality control. With a pre-defined copy number, this internal control ensures no PCR inhibition during amplification.

Gene description	Primer/Positive Control Kit Cat.#	FRET Probe Kit Cat.#
<b>Virus/Bacteria</b>		
CMV	FL2550	FL2770
CTR	FL2710	FL2930
HHV6	FL2490	T67230
HBV	FL2670	FL2890
HCV	FL2690	FL2910