



## PentaBase—Innovative solutions for probes and primers

Your supplier of a proprietary technology that easily substitutes TaqMan®MGB, Molecular Beacons and other DNA based probes. We also supply our own modified primers, SuPrimers™, that ensure less primer-dimer and higher working temperatures. Standard probes and primers of a high quality are also supplied. PentaBase™ is an active player in developing new diagnostic products and procedures.

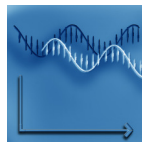
### EasyBeacons™

EasyBeacons™ are nuclease resistant probes developed by PentaBase™ to be used in 3-step Real Time PCR and *in situ* hybridizations. Like Molecular Beacons, EasyBeacons™ are quenched when the probes are unbound, but fluoresce at hybridization to a target sequence. However, unlike Molecular Beacons, EasyBeacons do not require an internal stem to be quenched efficiently and are quenched at all temperatures when not bound to its target. The hydrophobic modifications of EasyBeacons™ will, by having hydrophobic interactions with each other in the unbound probe, ensure that the quencher and the fluorophore are kept in close proximity and hence resulting in an efficiently quenched probe with a low background fluorescence. Due to EasyBeacon's nuclease resistance, they can also be used for end-point detection or verification of your amplicon. This is a valuable feature, especially if you want to discriminate between almost similar genetic sequences like SNPs, alleles or if you want quality control on your quantification assay.

### HydroEasy™ Probes

HydroEasy™ Probes are developed by PentaBase™ to provide TaqMan® users, TaqMan®MGB users and users of *all* other hydrolysis probes with a probe giving them an improved assay with a significantly better signal-to-noise ratio, a higher specificity and a higher sensitivity. A HydroEasy™ Probe is just like your standard probe, labeled with a fluorophore and a quencher of your choice, and it can substitute *all* hydrolysis probes.

OBS! Use of Rox combined with PentaBase's probes is not recommended.

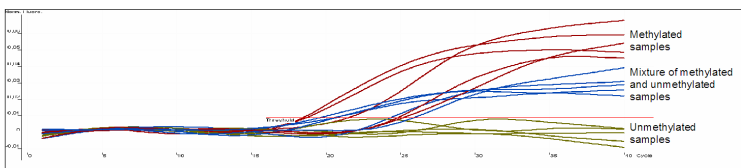


### SuPrimers™

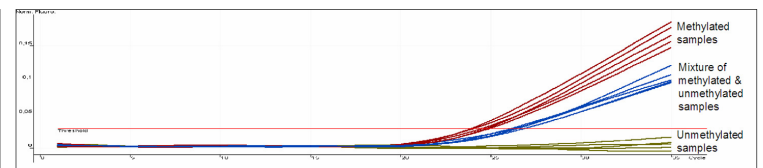
SuPrimers™ are developed in order to give our customers the very best conditions for obtaining a perfect PCR or Real Time PCR assay, PentaBase™ has developed a primer technology completely compatible with all applications of your standard primers. SuPrimers™ are also based on the HyNA™ technology, and reduces or eliminates primer-dimer formation and gives you an even higher sensitivity, specificity and a much better and more applicable temperature range of *all* your assays!

### Examples

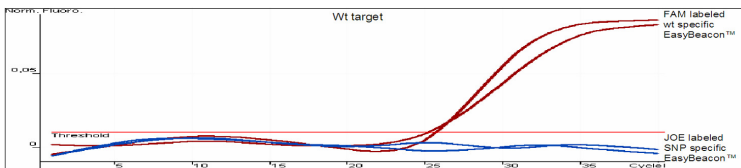
PentaBase's Real-Time PCR technologies are excellent for detections of SNPs, mutants, methylations (<sup>Me</sup>CpG), alleles, consensus sequences, expression etc. Below are some examples where PentaBase's technology has been applied:



Real-Time detection of methylation status of a single CpG using EasyBeacons™



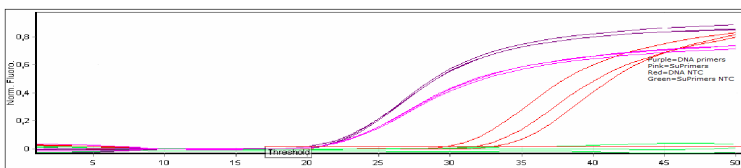
End-point detection/verification of the methylation status of a single CpG using EasyBeacons™



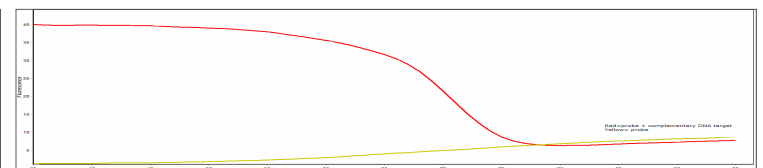
Allele specific detection with HydroEasy™ probes



SNP detection with HydroEasy™ probes. Duo-plex reaction with probes for both the wild type and the Single Nucleotide Polymorphism



By changing the DNA primer sequence into SuPrimers the primer-dimer problem has been removed



Above is shown an example of data obtained from an affinity study. PentaBase make such a study on every probe. The height of the signal indicates the potential of the fluorophore. The temperature where a drop in fluorescence is observed is related to the affinity of the probe