

Table S2. Improvements of current mRNA-based mutation assay in comparison to the original assay of Extendable blocking probe – reverse transcription (ExBP-RT).

	Current mRNA-based mutation assay (1)	Original ExBP-RT (2)	Advantages of (1) compared to (2)
Reverse enzyme	Warm-start reverse transcriptase that enables the manipulation of closed tube reverse transcription reactions	Manual hot-start reverse transcriptase via opening the tube on the heating block	More convenient for assay handling in routine clinical settings
Design of the mutation-specific primer	A new design of the mutation-specific primer with a shorter 5'-tail sequence (10 nucleotides in length)	The mutation-specific primer with a long 5'-tail sequence (24 nucleotides in length)	For higher sensitivity and improved specificity
Sensitivity (%)	0.005	0.017	More sensitive in detection of <i>BRAF</i> ^{V600E} mRNA