Supplementary Table S1 Details of primary antibodies used for IHC staining

Antibody Name	Manufacturer	Dilution	Reagent Kit
Cytokeratin AE1/AE3	BioCare Medical, United States	1:300	Ultra View Universal DAB Detection Kit, Ventana Medical systems, USA.
S100protein	Cell Marque, United States	1:1000	
Melan A	DAKO, Denmark	1:200	
Melanosome (HMB45)	DAKO, Denmark	1:300	

Abbreviation: IHC, immunohistochemistry.

Supplementary Table S2 The primer sequences used for *BRAF*&*NRAS* analysis (sequencing method) along with the sequence for *BRAF* probe (RT-PCR method)

Method	Gene of interest	Primer sequence	Annealing temp
Sanger sequencing method	*NRAS* Exon 2 forward primer	5′ACAGGTTCTTGCTGGTGTGA3′	62°C
	NRAS Exon 2 reverse primer	5′CACTGGGCCTCACCTCTATG3′	
	NRAS Exon 3 forward primer	5′GTGGTTATAGATGGTGAAACCTGT3′	60°C
	NRAS Exon 3 reverse primer	5′TGGCAAATACACAGAGGAAGC3′	
	NRAS Exon 4 forward primer	5′TTCCCGTTTTTAGGGAGCAGA3′	62°C
	NRAS Exon 4 reverse primer	5′TGCAAACTCTTGCACAAATGC3′	
	BRAF forward primer	5′AGACCTCACAGTAAAAATAGGTGATTTTGG 3′	54°C
	BRAF reverse primer	5′GATGGGACCCACTCCATCG 3′	
BRAF V600E RT-PCR	*BRAF* V600E mutant specific probe	6FAM-TAGCTACAGAGAAATC-MG-BNFQ	64°C
	BRAF wildtype probe	VIC-CTAGCTACAGTGAAATC-MGB-NFQ	

Abbreviation: RT-PCR, real-time polymerase chain reaction.

Supplementary Table S3 PCR cycling conditions for NRAS gene

Stages	Cycles	Temperature	Time
Initial denaturation		95°C	15 minutes
Denaturation	35 cycles	95 °C	45 seconds
Annealing		62 °C	45 seconds
extension		72 °C	30 seconds
Final extension		72 °C	10 minutes
		4 °C	∞

Abbreviation: PCR, polymerase chain reaction.

Supplementary Table S4 Cycle conditions for real-time PCR

Stages	Temperature	Time
Stage 1	95°C	10 minutes
Stage 2 (40 Cycles)	95°C	15 seconds
	64°C	1 minutes

Abbreviation: PCR, polymerase chain reaction.

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