

Supplementary materials

RAS mutation analysis

DNA was extracted from formalin-fixed paraffin-embedded (FFPE) tumour sections using the QIAamp DNA FFPE Tissue Kit (Qiagen). Mutations of KRAS (exons 2, 3, and 4), NRAS (exons 2, 3, and 4), and BRAF (V600E) were analysed by a next-generation sequencing (NGS) method.