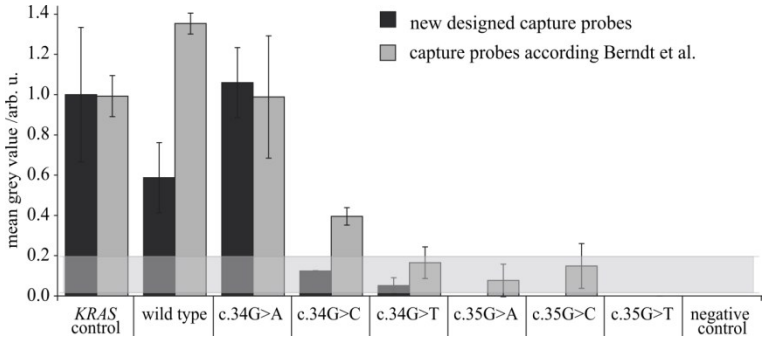
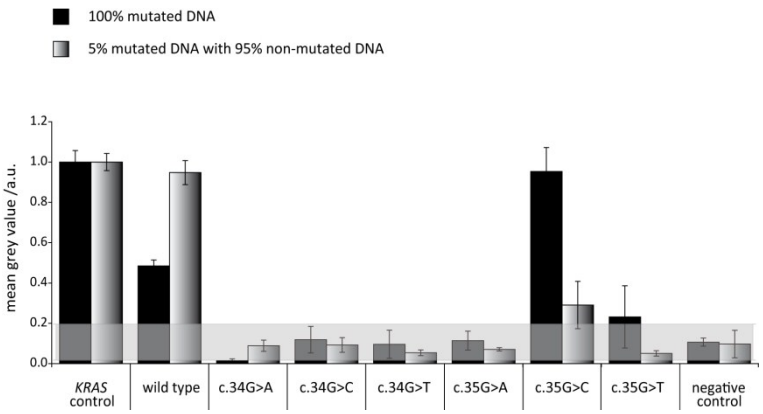
Supplements

Suppl. S1: *KRAS* codon 12 specific capture and target probes adapted from Berndt et al., 1996.[31]

KRAS mutation	**Description**	**Sequence 5'- 3'**	**Modification**
wild type	capture probe target probe	TACGCCACCAGCTCCAAC GTTGGAGCTGGTGGCGTA	5'-NH_2-C6 5'-biotin
c.34G>A (p.G12S)	capture probe target probe	TACGCCACTAGCTCCAAC GTTGGAGCTAGTGGCGTA	5'-NH_2-C6 5'-biotin
c.34G>C (p.G12R)	capture probe target probe	TACGCCACGAGCTCCAAC GTTGGAGCTCGTGGCGTA	5'-NH_2-C6 5'-biotin
c.34G>T (p.G12C)	capture probe target probe	TACGCCACAAGCTCCAAC GTTGGAGCTTGTGGCGTA	5'-NH_2-C6 5'-biotin
c.35G>A (p.G12D)	capture probe target probe	TACGCCATCAGCTCCAAC GTTGGAGCTGATGGCGTA	5'-NH_2-C6 5'-biotin
c.35G>C (p.G12A)	capture probe target probe	TACGCCAGCAGCTCCAAC GTTGGAGCTGCTGGCGTA	5'-NH_2-C6 5'-biotin
c.35G>T (p.G12V)	capture probe target probe	TACGCCAACAGCTCCAAC GTTGGAGCTGTTGGCGTA	5'-NH_2-C6 5'-biotin

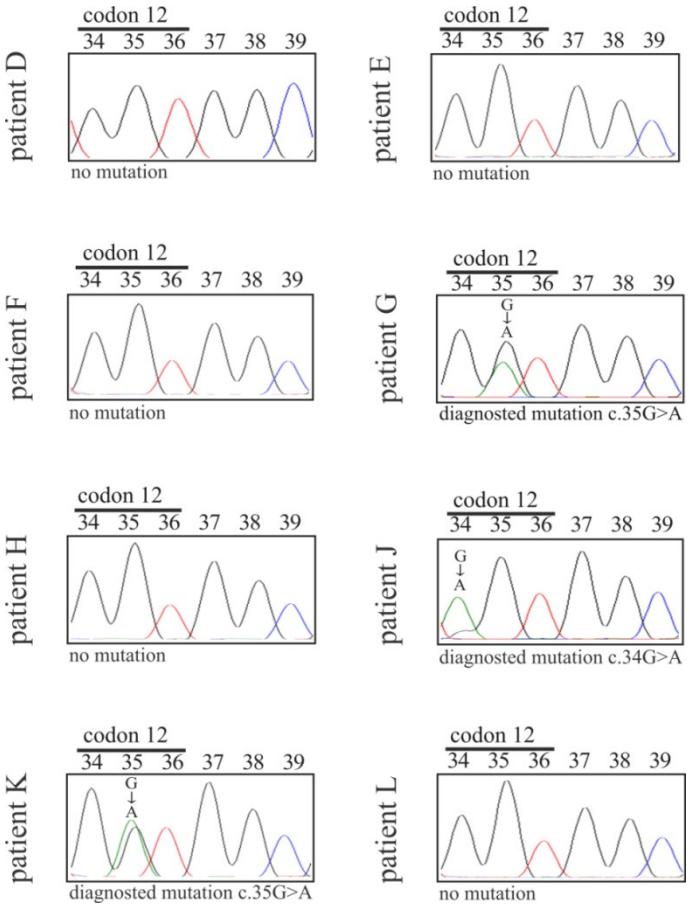


Suppl. S2: Comparison of *KRAS* codon 12 mutation position within the capture probe sequence.
Exemplary, the hybridization signals of amplified *KRAS* fragment from genomic DNA of A549 cells (c.34G>A, homozygous) are depicted. When the codon 12 SNP is located in the middle of the capture probe sequence, as it is the case for the new designed capture probes (black bars), the discrimination of the c.34G>A mutation is better than with the capture probes according to Berndt et al. 1996 (grey highlighted bars).



Suppl. S3: Assay results of cell line RPMI-8226 (heterozygous for *KRAS* c.35G>T).

The comparison of 100% mutated DNA with a blend of 5% mutated DNA indicates that the detection of particular *KRAS* codon 12 mutation is possible on the chip assay, even against the high wild type background.



Suppl. S4: Sequencing image details of investigated tissue samples from colon cancer patients.