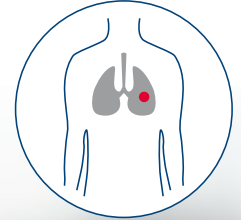# Take lung cancer research to a new molecular dimension

The new AdnaTest LungCancer kits allow molecular characterization of circulating tumor cells (CTCs) by combining AdnaTest CTC-Select with AdnaTest LungCancerDetect using the combination-of-combinations principle.

The AdnaTest LungCancer features:

- Increased sensitivity for lung cancer compared to single-antibody methods
- Detection of EMT key markers
- Minimization of leukocyte bias

Sample to Insight

Increased sensitivity in lung cancer

Improve sensitivity by detecting key EMT markers

AdnaTest CTC-Select provides antibodies against EpCam, Her2 and EGFR to strongly increase performance compared to detection based only on EpCam. EMT and tumor stem-cell metabolism markers are found in approximately 80% of all CTCs from lung cancer samples (Figure 1). Analyzed CTCs were positive for at least one of the following EMT markers: Twist1, Akt2 and PI3KCα. AdnaTest LungCancerDetect contains primer mixes for the qPCR detection of EMT and lung-cancer-associated markers.

Increase analysis sensitivity with AdnaWash

The detection of markers for tumor stem cells, such as ALDH1, and EMT, including Twist1, Akt2 and PI3KCα, requires significantly higher cell-preparation purity to eliminate a bias from contaminating leukocytes. The AdnaWash Leukocyte Reducer is a special buffer developed to reduce leukocyte content during CTC enrichment. CD45-endpoint PCR analysis clearly demonstrates that the number of leukocytes in captured cells is dramatically reduced using AdnaWash compared to phosphate buffered saline (PBS) (Figure 2).

Numbers of positive cases
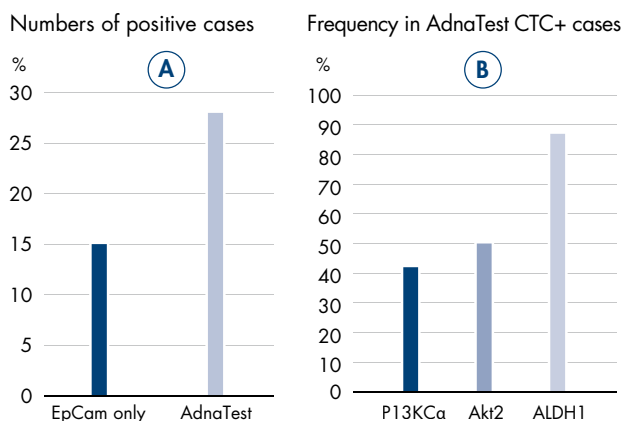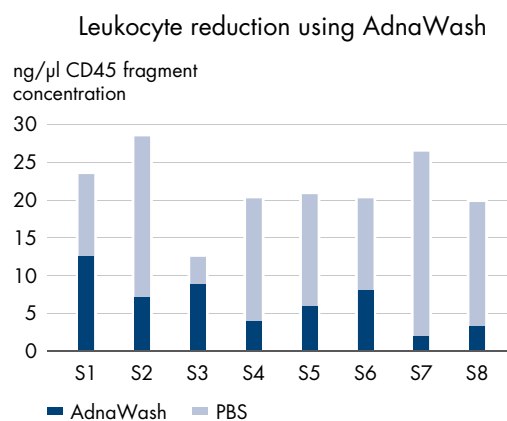
Frequency in AdnaTest CTC+ cases

Figure 1. The use of multiple antibodies and optimized selection of gene targets increases sensitivity. **A:** Comparison of selection using only an antibody to EpCam (single-antibody method) or multiple antibodies in AdnaTest CTC-Select; **B:** Detection using primers to multiple genes in AdnaTest LungCancerDetect.

Leukocyte reduction using AdnaWash

Figure 2. **Reducing leukocytes in captured cells using AdnaWash.** Blood samples from healthy donors were processed using PBS or AdnaWash. (1)

Reference:

1. Hanssen A., et al (2016) Characterization of different CTC subpopulations in non-small cell lung cancer. Nature Sci Rep 6, 28010.

Ordering Information

Product	Contents	Cat. no.
AdnaTest CTC-Select	For immunomagnetic enrichment of circulating tumor cells (CTCs) from human whole blood for 12 preparations.	395092
AdnaTest LungCancerDetect	For 12 mRNA isolation from CTCs, reverse transcription and subsequent detection of epithelial-mesenchymal transition (EMT) and lung cancer-associated gene expression using endpoint PCR	396052

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