

# nPAC™ AMYLOplex CTC-p53 Kit

OL50110

## “p53 prions” in CTCs - A new promising cancer biomarker meets two disruptive technologies

The nPAC™ AMYLOplex CTC-p53 Kit is a combination of the AMYLOplex p53 Kit and the nPAC™ CTC IF Kit to specifically detect and quantify the amount of p53 aggregates in circulating tumor cells (CTCs). Preferably, the nPAC™ AMYLOplex CTC-p53 Kit is used in combination with the “Blood Collection Kit” and the nCyte Dx® platform (Axon Dx®) for detection and enumeration of CK+ and/or amyloid p53+ cells. The tumor suppressor protein p53, known as the “guardian of the genome”, plays an essential role in the body’s anticancer defence mechanism.

However, with more than 50% of all cancers carrying a mutation in the *TP53* gene, it is the most

frequently mutated gene in cancer. Mutated p53 can lose its tumor-suppressive function but can acquire new characteristics such as misfolding and accumulation into amyloid aggregates in addition. Amyloids are characterized by an enriched  $\beta$ -sheet secondary structure leading to a pathogenic fibrillary morphology.

They are wellknown from neurodegenerative diseases like Alzheimer’s disease. The enumeration of CTCs, cells shed by the tumor into the blood stream, is a useful tool to monitor treatment response and/or disease progression. The detection of amyloid p53 adds valuable information for CK+ CTCs and aids in the identification of CK- CTCs.

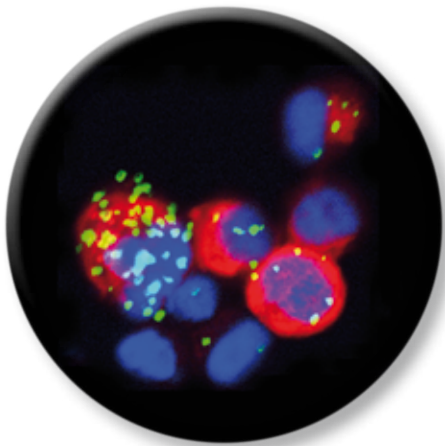
### MATERIALS PROVIDED

nPAC™ Fixative	Probe diluent	nPAC™ CTC Antibody Mix
nPAC™ Permeabilization Buffer	Enzyme A	DAPI
Blocking buffer	Buffer A	Wash Buffer A and B
p53 antibodies	Enzyme B	nPAC™ Washing Buffer (2x)
Amyloid-specific antibodies	Buffer B	Mounting Medium
Primary antibody diluent	Enzyme C	Filter Tubes
Probe A and B	Buffer C	Low-retention Tubes

The nPAC™ AMYLOplex CTC-p53 Kit is based on an amyloid p53-specific proximity ligation assay (PLA) combined with immunofluorescence staining. Amyloid p53 is detected using the proprietary PLA technology from Navinci Diagnostics. Two primary antibodies targeting p53 and amyloid structures are recognized by secondary antibodies that are conjugated to oligonucleotides, which form a DNA circle when present in close proximity. After enzymatic activation and ligation, the DNA is amplified by rolling circle ampli-

fication. The amplification product is detected by fluorophore-labeled detection probes, which hybridize to the complementary sequence. After the detection of amyloid p53, antibodies directed against various cytokeratins, CD45 and other propriety markers that are specific for leukocytes are added for identification and enumeration of CTCs. DAPI is used to stain cell nuclei. The nCyte Dx® system automatically scans the sample, acquires images and presents them to the user in a gallery format for final classification.

## ADDITIONAL MATERIALS REQUIRED



### Required Consumables

- Blood Collection Kit (OL6010012)
- CRC IF Materials Kit (OL5090012)
- PBS (without Ca<sup>++</sup> and Mg<sup>++</sup>)
- High purity water

### Required Equipment

- Hydrophobic pen
- Humidity chamber
- 37°C incubator
- Cell Counting Device
- Tube Rotator (360°)
- Vacuum pump
- Vacuum sampling manifold (e.g. OL90300)
- Standard laboratory equipment
- Fluorescence Microscope (e.g. nCyte Dx® OL90100)

The nPAC™ AMYLOplex CTC-p53 Kit was developed by using the technology from  Navinci

This kit is offered in cooperation with 

**This product is not for diagnostic use.**

### Order Information:

nPAC™ AMYLOplex CTC-p53 Kit (12 tests)	OL5011012
Blood Collection Kit	OL6010012
CRC IF Materials Kit	OL5090012
Vacuum Sampling Manifold	OL90300
nCyte Dx® Advanced Optical Scanner (incl. nCyte Dx nAble® software)	OL90100

 Manufacturer:

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