

CK-18/M30 Fragment Asp 396

Analyte: Cytokeratin 18 Fragments (Asp 396)

Specimen Type: EDTA Plasma

Optimum Volume: 0.5 mL

2-8°C

-20°C

-70°C

Unstable

6 months

9 months

Reporting units: U/L*

Method: ELISA

Biological or Clinical Significance:

Caspases cleave various cellular proteins during apoptosis. In epithelial cells, one of those substrates is the intermediate filament protein keratin 18 (K18). The M30 antibody recognizes a neo-epitope exposed after caspase cleavage of K18 after the aspartic acid residue 396. Cleavage at this position occurs during early apoptosis by caspase 9 and during the execution phase by caspase 3 and caspase 7.

The M30 Apoptosense[®] ELISA measures the level of soluble caspase-cleaved K18 (ccK18) fragments containing the K18Asp396 neo-epitope. After induction of apoptosis of epithelial cells, ccK18 increases are first observed in cell extracts. Release of antigen into the extracellular compartment occurs later and is due to secondary necrosis of apoptotic bodies. The ccK18 increase during apoptosis is inhibited by the caspase-inhibitor zVAD-fmk.

The M30 Apoptosense[®] ELISA can be used in combination with the M65[®] ELISA (also from Peviva) which measures total K18. Combining the two assays is useful for assessment of cell death mode.

The M30 Apoptosense[®] ELISA detects human caspase-cleaved K18, but does not detect caspase-cleaved mouse, rat, or canine K18. The M30 Apoptosense[®] ELISA will specifically detect tumor apoptosis in mice or rats carrying human tumor xenografts.

M30 Apoptosense[®] ELISA is used for research and clinical trials in the fields of oncology, hepatology, transplantation, and sepsis.

Principle of Test Method:

T M30 Apoptosense[®] ELISA is a solid-phase sandwich enzyme immunoassay. *Note: 1 U/L = 1.24 pM defined against a synthetic peptide standard.

References:

1. Cumming J, Ranson M, LaCasse E, Ganganagari J R, St. Jean M, Jayson G, Durkin J, and Dive C. Method Validation and Preliminary Qualification of Pharmacodynamic Biomarkers Employed to Evaluate the Clinical Efficacy of an Antisense Compound (AEG35156) Targeted to the X-linked Inhibitor of Apoptosis Protein XIAP. Br J Cancer. 2006; 95: 42-48.
2. Cummings J., Ranson M., Butt F., Moore D., Dive C. Qualification of M30 and M65 ELISAs as surrogate biomarkers of cell death: long term antigen stability in cancer patient plasma. Cancer Chemother. Pharmacol. 2007; 60:921-924.