**ALTERNATIVES TO ALT**

Is your research misled by your liver marker?

**M30 AND M65 - NEXT GENERATION DILI Markers**

**Ultimate Readout: Cell Death**
(Cyto)keratin 18 Safety Biomarkers for Drug Development

For use in serum/plasma or cell culture applications

**Stop**
Avoid unwarranted progression of Phase 1 compounds destined to fail

**DILI**

**GO**
Prevent unwarranted discontinuation of drug development due to benign ALT elevations

**Necrosis**
Leakage of full-length K18 only intact K18

M65 EpiDeath® ELISA
Measurement of intact and cleaved K18
M65 EpiDeath® ELISA measures total cell death (necrosis and apoptosis)

**Apoptosis**
Caspase cleavage of K18 caspase-cleaved K18

**Asp396-Neoepitope**

M30 Apoptosense® ELISA
Measurement of cleaved K18 only
M30 Apoptosense® ELISA measures only apoptosis

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**M30 Apoptosense® ELISA (Research use only)**  
CAT# P10011

The M30 Apoptosense® ELISA is a unique biomarker assay that allows determination of epithelial cell apoptosis in blood samples. The assay is based on the unique M30 antibody which recognizes a neo-epitope of CK18 formed after caspase cleavage.

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**M65 EpiDeath® ELISA (Research use only)**  
CAT# P10040

The M65 EpiDeath® ELISA is an updated version of the M65® ELISA and measures total CK18 in serum/plasma or cell culture samples. CK18 concentrations reflect total epithelial cell death (regardless of death mode).

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**M65® ELISA (Research use only)**  
CAT# P10020

The M65® ELISA is the forerunner to the M65 EpiDeath® ELISA and is used to determine total epithelial cell death. Cell death mode (apoptosis or necrosis) can be determined by the combined use of the M65® ELISA and the M30 Apoptosense® ELISA. It is a biomarker for in vitro and in vivo studies using cell supernatant, serum or plasma samples.

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**M30 CytoDeath™ ELISA (Research use only)**  
CAT# P10900

The M30 CytoDeath™ ELISA is intended for cell culture applications. Similar to the M30 Apoptosense® ELISA, this assay is based on the unique M30 antibody. The sensitivity and range of the assay have been optimized for in vitro applications (the assay is not suitable for serum/plasma samples). The M30 CytoDeath™ ELISA is a versatile tool to determine apoptosis in in vitro studies using monolayer cell cultures, multicellular spheroids or organ cultures. The ELISA is a powerful drug screening tool through its measurement of an accumulated-apoptosis product.

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**M30 CytoDeath™ Antibodies (Research use only)**  
CAT# P10700, P10750, P10800, and P10830

The M30 CytoDEATH™ antibody is used for the detection of epithelial cell apoptosis by immunohistochemistry in formalin-fixed paraffin-embedded or frozen tissue, flow cytometry or Western blotting. It detects caspase-cleaved human, monkey and bovine CK18 (but not the mouse, rat or canine protein). The M30 CytoDEATH™ mouse monoclonal antibody is available unlabeled, conjugated with biotin or fluorescein, or with orange dye.

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**M5 and M6 Antibodies (Research use only)**  
CAT# P10600, P10650, P10800, and P10830

The M5 and M6 Keratin 18 mouse monoclonal antibodies bind to conventional epitopes on Keratin 18 (CK18) between the caspase-cleavage sites aa238 and aa396. The antibodies are used for staining of epithelial cells by immunohistochemistry and for Western blotting. M5 Keratin 18 is specific for the human and monkey protein, whereas M6 Keratin 18 also binds to mouse, rat and dog CK18.