



PEVIVA

Product Line Overview





PEVIVA *Product Line*

The PEVIVA Product Line is manufactured by VLVbio, a Swedish biotechnology company devoted to the manufacture, R&D and sale of unique biomarker assays and antibodies intended for

- **non-invasive diagnosis as well as treatment follow-up of certain types of liver diseases**
- **preclinical research on drug development**
- **rapid and non-invasive monitoring of anti-cancer drug efficacy in cancer patients**

VLVbio has, since the establishment of the company in 2000 (as Peviva AB), the exclusive rights to the M30 antibody. The M30 is a unique apoptosis marker for cells of epithelial origin, used in the M30 Apoptosense® ELISA and the M30 CytoDeath™ ELISA. The M30 antibody is also available as unlabelled or conjugated M30 CytoDEATH™ antibody intended for use with different biochemical methods like immunocytochemistry (ICC), flow cytometry (FACS), western blot (WB) and immunohistochemistry (IHC). In addition to already mentioned ELISA products, VLVbio offers the M65® ELISA and the M65 EpiDeath® ELISA. These two assays are based on two anti-keratin 18 mouse monoclonal antibodies (M5 and M6) measuring total cell death (apoptosis and necrosis) by quantifying cleaved and intact keratin 18.

ELISA PRODUCTS



Specific
measurement
tool for
apoptosis

M30 Apoptosense® ELISA

(Prod. No 10011)

The M30 Apoptosense® ELISA measures the concentration of caspase-cleaved keratin 18 in human plasma, serum or cell culture supernatants, reflecting the amount of apoptosis. The assay is based on the unique M30 antibody, which recognizes a neo-epitope of keratin 18 formed after caspase cleavage. The assay can be combined with the M65® ELISA for the analysis of cell death mode (necrosis or apoptosis).

The M30 Apoptosense® ELISA is CE marked as a medical device for *in vitro* diagnostic use. All reagents are provided in a convenient ready-to-use format.

Application Fields for M30 Apoptosense® ELISA:

- **Hepatology:** Measures the level of hepatocyte apoptosis in patients with liver diseases, e.g. NASH, AH, HCV and more
- **Oncology:** Measures chemotherapy induced apoptosis in epithelial carcinoma
- **Toxicology:** Suitable when evaluating different pharmaceutical agents' impact on liver cell death, e.g. DILI or acute toxicity

Features of the M30 Apoptosense® ELISA:

- Specific measurement tool for apoptosis quantification in keratin 18 positive cells
- Suitable to use together with M65® ELISA for quantification of apoptosis, necrosis and total cell death
- Sandwich ELISA with a 96-well plate in a convenient ready-to-use format
- Can be split up for use at several occasions



Suitable for
measurement of
apoptosis in cell
cultures

M30 CytoDeath™ ELISA

(Prod. No 10900)

The M30 CytoDeath™ ELISA offers a unique possibility to measure apoptotic cells in multicellular spheroids and organ culture systems. The M30 CytoDeath™ ELISA is a product developed for cell culture applications, with a dynamic range and sensitivity suitable for *in vitro* work, making it a useful drug screening tool.

Similar to the M30 Apoptosense® ELISA, the M30 CytoDeath™ ELISA is based on the M30 antibody, detecting the caspase-cleaved keratin 18. All reagents are provided in a convenient ready-to-use format.

Application Fields for M30 CytoDeath™ ELISA:

- **Oncology:** Measures chemotherapy induced apoptosis in epithelial carcinoma
- **Toxicology:** Suitable for *in vitro* characterization of apoptosis-inducing drugs, including establishment of time course kinetics and dose-response relationships

Features of the M30 CytoDeath™ ELISA:

- Specific measurement tool for apoptosis quantification in keratin 18 positive cells
- Suitable for cell cultures and spheroids
- Sandwich ELISA with a 96-well plate in a convenient ready-to-use format
- Can be split up for use at several occasions

ELISA PRODUCTS



Intended to use together with the M30 Apoptosense® ELISA

M65® ELISA

(Prod. No 10020)

The M65® ELISA measures soluble keratin 18 released from dying cells. It can be used to assess overall cell death, due to apoptosis and necrosis. The M65® ELISA is intended for human serum or plasma, and is CE marked as a medical device for *in vitro* diagnostic use.

The M65® ELISA is primarily intended to be used together with the M30 Apoptosense® ELISA. When used together, the quantification of total cell death, apoptosis and necrosis is possible. As both assays are calibrated against the identical reference, the combination of the M30 Apoptosense® ELISA and the M65® ELISA allows determination of the relative contribution of apoptosis to total cell death. All reagents are provided in a convenient ready-to-use format.

Application Fields for M65® ELISA:

- **Hepatology:** Measures the level of total hepatocyte cell death in patients with liver diseases, e.g. NASH, AH, HCV and more
- **Oncology:** Measures chemotherapy induced cell death in epithelial carcinoma
- **Toxicology:** Suitable for evaluation of cell death mode of hepatocytes due to pharmaceutical agents' impact

Features of the M65® ELISA:

- Specific measurement tool for total cell death quantification in keratin 18 positive cells
- Optimized for use together with the M30 Apoptosense® ELISA for quantification of apoptosis, necrosis and total cell death
- Sandwich ELISA with a 96-well plate in a convenient ready-to-use format
- Can be split up for use at several occasions



The preferable stand-alone kit for measurement of total cell death

M65 EpiDeath® ELISA

(Prod. No 10040)

The M65 EpiDeath® ELISA measures the concentration of soluble keratin 18 in human plasma, serum and cell culture supernatants. The keratin 18 levels reflect the amount of total cell death, due to apoptosis or necrosis.

The M65 EpiDeath® ELISA represents the next generation of keratin 18 positive biomarkers. The assay is CE marked as a medical device for *in vitro* diagnostic use. All reagents are provided in a convenient ready-to-use format.

Application Fields for M65 EpiDeath® ELISA:

- **Hepatology:** Measures the level of total hepatocyte cell death in patients with liver damage
- **Toxicology:** Suitable for evaluating different chemical or pharmaceutical agents' impact on hepatocyte cell death

Features of the M65 EpiDeath® ELISA:

- Specific measurement tool for total cell death quantification in keratin 18 positive cells
- Optimized for identification of patients with liver damage
- Sandwich ELISA with a 96-well plate in a convenient ready-to-use format
- Can be split up for use at several occasions

The **PEVIVA Product Line** can be used with blood samples, samples from cell cultures and spheroids or on xenografts to measure apoptosis, total cell death and the ratio between apoptosis and necrosis.

Product	Apoptosis	Total Cell Death	Cell Cultures	Spheroids	Xenografts	Blood / Plasma Samples
M30 Apoptosense® ELISA	✓	—	✓	✓	✓	✓
M30 CytoDeath™ ELISA	✓	—	✓	✓	—	—
M65® ELISA	—	✓	✓	✓	✓	✓
M65 EpiDeath® ELISA	—	✓	✓	✓	✓	✓

M30:M65 ratios indicate Cell Death Mode

The ratios between the M30 Apoptosense® ELISA (measuring caspase-cleaved keratin 18 [ccK18]) and the M65® ELISA (measuring total keratin 18) reflect the cell death mode. The amount of apoptosis (M30) is compared to the amount of total cell death (M65) by calculating the M30:M65 ratio. High M30:M65 ratios indicate that the cell death is mainly due to apoptosis. In contrast, low M30:M65 ratios suggest necrosis is the predominant cause of cell death.

MONOCLONAL ANTIBODY PRODUCTS



M30 CytoDEATH™ Antibody (Unlabelled, Biotin, Fluorescein, Orange)

The M30 CytoDEATH™ antibody is used for the detection of apoptosis in keratin 18 positive cells by immunohistochemistry (in formalin-fixed paraffin-embedded or frozen tissue), flow cytometry or western blotting. It detects caspase-cleaved human, monkey and bovine keratin 18. The M30 CytoDEATH™ mouse monoclonal antibody is available unlabelled or conjugated with different fluorescent molecular probe dyes.

M5 and M6 Keratin 18 Antibodies

The M5 and M6 Keratin 18 mouse monoclonal antibodies bind to conventional epitopes on keratin 18 between the caspase-cleavage sites aa238 and aa396. The antibodies can be used for different biochemical assays like immunocytochemistry, flow cytometry, western blot, immunoprecipitation and immunohistochemistry. The M5 Keratin 18 is specific for the human and monkey protein, whereas the M6 Keratin 18 also binds to mouse, rat and dog keratin 18.



PEVIVA ELISA kits

PEVIVA Product Line

ELISA Products	Prod. No
M30 Apoptosense® ELISA	10011
M30 CytoDeath™ ELISA	10900
M65® ELISA	10020
M65 EpiDeath® ELISA	10040
Monoclonal Antibody Products	Prod. No
M5 Keratin 18 mAb	10600
M6 Keratin 18 mAb	10650
M30 CytoDEATH™ mAb (unlabelled)	10700
M30 CytoDEATH™ mAb Biotin	10750
M30 CytoDEATH™ mAb Fluorescein	10800
M30 CytoDEATH™ mAb Orange	10830



HOW TO ORDER

VLVbio is collaborating with distributors all around the world to provide fast, reliable and convenient service for you. Please contact your local distributor, visit www.vlvbio.com/distributors/ or e-mail VLVbio directly at marketing@vlvbio.com

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