

#### DESCRIPTION

|                                                                                                                                                                                                         |                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Human/Mouse                                                                                |
| <b>Specificity</b>                                                                                                                                                                                      | Detects human Caspase-3.                                                                   |
| <b>Source</b>                                                                                                                                                                                           | Polyclonal Goat IgG                                                                        |
| <b>Purification</b>                                                                                                                                                                                     | Antigen Affinity-purified                                                                  |
| <b>Immunogen</b>                                                                                                                                                                                        | <i>E. coli</i> -derived recombinant human Caspase-3<br>Met1-His277<br>Accession # AAA65015 |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 532<br>Excitation Wavelength: 534 nm<br>Emission Wavelength: 553 nm            |
| <b>Formulation</b>                                                                                                                                                                                      | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide                               |
| *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |                                                                                            |

#### APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

|                            |                                                                        |
|----------------------------|------------------------------------------------------------------------|
| <b>Knockout Validated</b>  | Optimal dilution of this antibody should be experimentally determined. |
| <b>Western Blot</b>        | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunoprecipitation</b> | Optimal dilution of this antibody should be experimentally determined. |

#### PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

#### BACKGROUND

Caspase-3 (Cysteine-aspartic acid protease 3/Casp3; also Yama, apopain and CPP32) is a 29 kDa member of the peptidase C14A family of enzymes (1, 2, 3). It is widely expressed and is an integral component of the apoptotic cascade. Caspase-3 is considered to be the major executioner caspase; that is, the primary downstream mediator of apoptotic-associated proteolysis (2, 3, 4). Active Caspase-3 is known to utilize a Cys residue to cleave multiple substrates, including PARP, proIL-16, PKC-γ & -δ, procaspases 6, 7 and 9, and β-catenin (1). Human procaspase-3 is a 32 kDa, 277 amino acid (aa) protein (5, 6, 7). Normally, it is an inactive, cytosolic homodimer, but following an upstream signal that activates processing proteases, procaspase-3 undergoes proteolytic cleavage (1, 2, 8, 9). This generates an N-terminal 175 aa p20/20 kDa subunit plus a 102 aa C-terminal p12/12 kDa subunit, followed by further processing of the p20 subunit at Asp28 to generate a final p17 subunit (aa 29-175) (9). The p17 and p12 subunits noncovalently heterodimerize, and subsequently associate with another p17/p12 heterodimer to form an active antiparallel homodimer. The p17 subunit contains the enzyme active site (aa 161-165), with an embedded catalytic Cys which is normally nitrosylated and inactive. Full activation requires both proteolytic processing and Cys163 denitrosylation (10). Multiple proteases can use Caspase-3 as a substrate including Caspase-6, -8, and -10, granzyme B, and Caspase-3 itself (9, 11, 12, 13).

#### PRODUCT SPECIFIC NOTICES

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