

Ac-DEVD-AFC

ALX-260-032

Caspase-3 substrate

Product Number/Sizes

ALX-260-032-M001	1 mg
ALX-260-032-M005	5 mg

Replaces Prod. #: **BML-P409**

Fluorogenic substrate for caspase-3 (CPP32), with a $K_m=9.7\mu M$ and related cysteine proteases. Sequence is based on PARP cleavage at Asp²¹⁶ for caspase-3. Similar to Ac-DEVD-AMC (Prod. No. ALX-260-031) but the AFC fluorophore has a greater Stokes' shift upon cleavage than AMC. Reaction can be monitored quantitatively or visually using a hand-held long-UV lamp and visualizing a blue to green shift in fluorescence upon cleavage. Ex.: 400nm, Em.: 505nm.

Product Details

ALTERNATIVE NAME:	Caspase-3 substrate (fluorogenic)
SEQUENCE:	Ac-Asp-Glu-Val-Asp-AFC (AFC = 7-Amino-4-trifluoromethylcoumarin)
FORMULA:	$C_{30}H_{34}F_3N_5O_{13}$
MW:	729.6
CAS:	201608-14-2
PEPTIDE CONTENT:	65-95%
PURITY:	≥96% (HPLC)
APPEARANCE:	White to off-white powder.
SOLUBILITY:	Soluble in dimethyl formamide, DMSO or methanol; slightly soluble in water (0.4mg/ml).
SHIPPING:	Ambient Temperature
LONG TERM STORAGE:	-20°C
HANDLING:	Protect from light. Keep cool and dry.
TECHNICAL INFO/PRODUCT NOTES:	AFC has an excitation maximum of 400nm and an emission maximum of 505nm.
PROTOCOL:	HEPES-Buffer (2x): 40 mM HEPES, pH 7.5, 20% glycerol, 4 mM DTT. Dilute to 1x with sterile distilled water prior to use. Substrate: Prepare 20 mM stock solution in DMSO

- Induce apoptosis and prepare cell lysate or use recombinant caspase.
- Prepare reaction buffer: 10 μl of substrate stock solution + 1 ml 1x HEPES-Buffer for each reaction.
- Add an appropriate amount of cell lysate (50-100 μl ; should be titrated) or recombinant caspase to reaction buffer.
- Incubate for 1 hour at 37 °C.
- Measure with spectrofluorometer: 400 nm excitation wavelength, 505 nm emission wavelength.
- Suggested controls:
 - Reaction mixture without substrate.
 - Reaction mixture with non-apoptotic cell lysate.
 - Reaction mixture with apoptotic cell lysate and caspase inhibitor.

REGULATORY STATUS: RUO - Research Use Only

Product Literature References

Antitumoral Activity of Leptocarpha rivularis Flower Extracts against Gastric Cancer Cells N. Carrasco, et al. Int. J. Mol. Sci. **24** 1439 (2023)
CARD-only proteins regulate in vivo inflammasome responses and ameliorate gout S. Devi, et al. Cell Rep. **42** 112265 (2023)

GLOBAL HEADQUARTERS

Enzo Life Sciences, Inc.
10 Executive Blvd
Farmingdale, NY 11735
USA
T 1-800-942-0430
T 1-631-694-7070
F 1-610-941-9252
E info-usa@enzolifesciences.com
www.enzolifesciences.com

EUROPE/ASIA

Enzo Life Sciences (ELS) AG
Industriestrasse 17, Postfach
CH-4415 Lausen
Switzerland
T +41/061 926 89 89
T +41/061 926 89 79
E info-ch@enzolifesciences.com
www.enzolifesciences.com

- Helicobacter pylori* outer membrane vesicles induce astrocyte reactivity through nuclear factor-kappa B activation and cause neuronal damage in vivo in a murine model E. Palacios, et al. *J. Neuroinflammation* **20** 66 (2023)
- Autophagy displays divergent roles during intermittent amino acid starvation and toxic stress-induced senescence in cultured skeletal muscle cells D. Bloemberg & J. Quadilatero *J. Cell. Physiol.* **236** 3099 (2021)
- Toll-Like Receptor 2 Release by Macrophages: An Anti-inflammatory Program Induced by Glucocorticoids and Lipopolysaccharide J. Hoppstadter, et al. *Front. Immunol.* **10** 1634 (2019)
- Additive polyplexes to undertake siRNA therapy against CDC20 and survivin in breast cancer cells M.B. Parmar, et al. *Biomacromolecules* **19** 4193 (2018)
- Epidermal growth factor signaling protects from cholestatic liver injury and fibrosis J. Svinka, et al. *J. Mol. Med. (Berl.)* **95** 109 (2017)
- Nimbolide reduces CD44 positive cell population and induces mitochondrial apoptosis in pancreatic cancer cells S. Kumar, et al. *Cancer Lett.* **413** 82 (2017)
- Sub-lethal oxidative stress induces lysosome biogenesis via a lysosomal membrane permeabilization-cathepsin-caspase 3-transcription factor EB-dependent pathway S.M. Leow, et al. *Oncotarget* **8** 16170 (2017)
- Artesunate induces ROS-dependent apoptosis via a Bax-mediated intrinsic pathway in Huh-7 and Hep3B cells Y. Pang, et al. *Exp. Cell Res.* **16** 30161 (2016)
- Decreased Poly(ADP-Ribose) Polymerase 1 Expression Attenuates Glucose Oxidase-Induced Damage in Rat Cochlear Marginal Strial Cells Y. Zhang, et al. *Mol. Neurobiol.* **53** 5971 (2016)
- Mechanism of neem limonoids-induced cell death in cancer: Role of oxidative phosphorylation N. Yadav, et al. *Free Radic. Biol. Med.* **90** 261 (2016)
- Organ specific alteration in caspase expression and STK3 proteolysis during the aging process M. Lessard-Beaudoin, et al. *Neurobiol. Aging* **47** 50 (2016)
- Post-transcriptional control of executioner caspases by RNA-binding proteins D. Subasic, et al. *Genes Dev.* **30** 2213 (2016)
- The C-terminal domains of apoptotic BH3-only proteins mediate their insertion into distinct biological membranes V. Andreu-Fernandez, et al. *J. Biol. Chem.* **291** 25207 (2016)
- Bothropoides pauloensis venom effects on isolated perfused kidney and cultured renal tubular epithelial cells A.D. Marinho, et al. *Toxicol.* **108** 126 (2015)
- Elevation of soluble guanylate cyclase suppresses proliferation and survival of human breast cancer cells H. C. Wen, et al. *PLoS One* **10** e0125518 (2015)
- Involvement of Bim in Photofrin-Mediated Photodynamically Induced Apoptosis X. Wang, et al. *Cell Physiol. Biochem.* **35** 1527 (2015)
- Oxidative phosphorylation-dependent regulation of cancer cell apoptosis in response to anticancer agents N. Yadav, et al. *Cell Death Dis.* **5** e1969 (2015)
- Redox regulation of metabolic and signaling pathways by thioredoxin and GLUTAREDOXIn in nos-3 overexpressing hepatoblastoma cells R. González, et al. *Redox Biol.* **6** 122 (2015)
- A novel TNFR1-triggered apoptosis pathway mediated by class IA PI3Ks in neutrophils B. Geering, et al. *Blood* **117** 5953 (2011)
- Caspase-7 is activated during lovastatin-induced apoptosis of the prostate cancer cell line LNCaP M. Marcelli, et al. *Cancer Res.* **58** 76 (1998)
- Different subcellular distribution of caspase-3 and caspase-7 following Fas-induced apoptosis in mouse liver J.M. Chandler, et al. *J. Biol. Chem.* **273** 10815 (1998)
- BAX-induced cell death may not require interleukin 1 b-converting enzyme-like proteases J. Xiang, et al. *Proc. Natl. Acad. Sci. USA* **93** 14559 (1996)
- Identification and inhibition of the ICE/CED-3 protease necessary for mammalian apoptosis D.W. Nicholson et al. *Nature* **376** 37 (1995)
- Cleavage of poly(ADP-ribose) polymerase by a proteinase with properties like ICE Y. A. Lazebnik et al. *Nature* **371** 346 (1994)

Revised 19-Dec-23

GLOBAL HEADQUARTERS

Enzo Life Sciences, Inc.
10 Executive Blvd
Farmingdale, NY 11735
USA
T 1-800-942-0430
T 1-631-694-7070
F 1-610-941-9252
E info-usa@enzolifesciences.com
www.enzolifesciences.com

EUROPE/ASIA

Enzo Life Sciences (ELS) AG
Industriestrasse 17, Postfach
CH-4415 Lausen
Switzerland
T +41/061 926 89 89
F +41/061 926 89 79
E info-ch@enzolifesciences.com
www.enzolifesciences.com