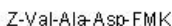


## Product datasheet

# Z-VAD(OH)-FMK, Irreversible general caspase inhibitor ab120382

[23 References](#) [5 Images](#)

### Overview

Product name	Z-VAD(OH)-FMK, Irreversible general caspase inhibitor
Description	Irreversible general caspase inhibitor
CAS Number	220644-02-0
Chemical structure	

### Properties

Molecular weight	453.46
Molecular formula	C <sub>21</sub> H <sub>28</sub> N <sub>3</sub> O <sub>7</sub>
Sequence	VAD (Modifications: N-terminal benzyloxycarbonyl; C-terminal FMK)
PubChem identifier	5497170
Storage instructions	Store at -20°C. Store under desiccating conditions. The product can be stored for up to 12 months.
Solubility overview	Soluble in DMSO to 20 mM
Handling	<p>Wherever possible, you should prepare and use solutions on the same day. However, if you need to make up stock solutions in advance, we recommend that you store the solution as aliquots in tightly sealed vials at -20°C. Generally, these will be useable for up to one week. Before use, and prior to opening the vial we recommend that you allow your product to equilibrate to room temperature for at least 1 hour.</p> <p>Refer to SDS for further information.</p> <p>Need more advice on solubility, usage and handling? Please visit our <a href="#">frequently asked questions (FAQ) page</a> for more details.</p>
SMILES	<chem>FCC(=O)C(CC(=O)O)NC(=O)[C@H](C)NC(=O)[C@@H](NC(=O)OCc1ccccc1)C(C)C</chem>
Source	Synthetic

### Applications

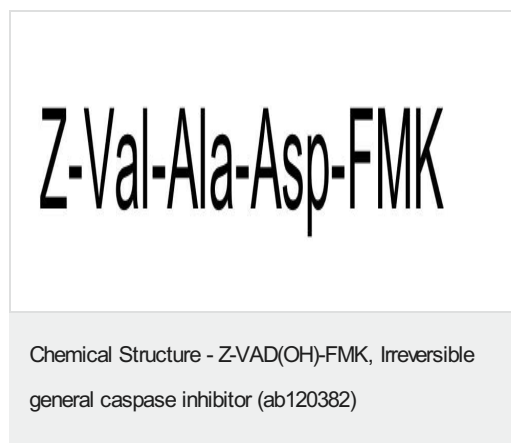
## The Abpromise guarantee

Our **Abpromise guarantee** covers the use of ab120382 in the following tested applications.

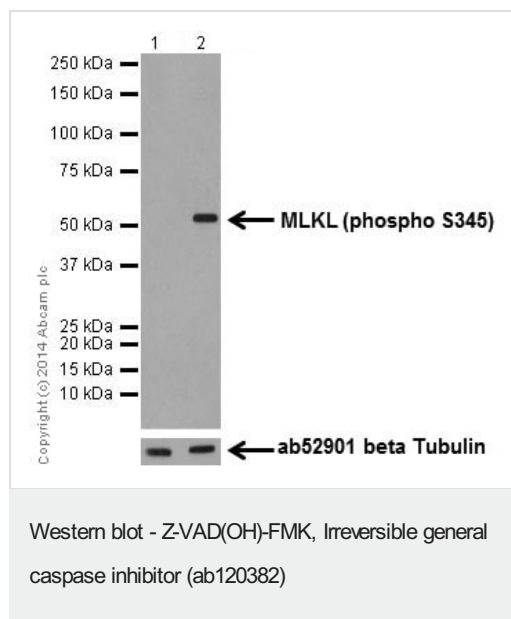
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
Functional Studies		Use at an assay dependent concentration.

## Images



2D chemical structure image of ab120382, Z-VAD(OH)-FMK, Irreversible general caspase inhibitor



**All lanes :** Anti-MLKL (phospho S345) antibody [EPR9515(2)] ([ab196436](#)) at 1/1000 dilution

**Lane 1 :** Untreated L-929 (Mouse connective tissue fibroblast cells) whole cell lysate

**Lane 2 :** L-929 whole cell lysate treated with 20 ng/ml TNF alpha ([ab9642](#)), 100 nM Smac mimetic, and 20  $\mu$ M z-VAD (ab120382) for 8 h and then harvested.

Lysates/proteins at 10  $\mu$ g per lane.

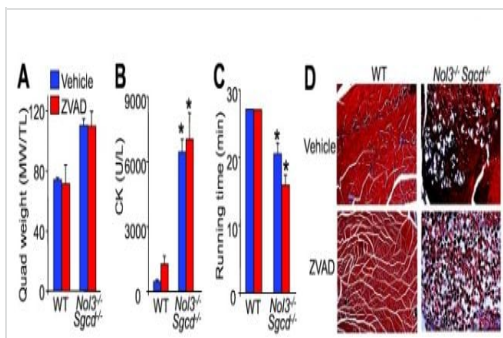
### Secondary

**All lanes :** Peroxidase-conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

**Observed band size:** 54 kDa

**Exposure time:** 15 seconds

**Blocking and dilution buffer:** 5% NFDM/TBST.



#### Functional Studies - Z-VAD(OH)-FMK, Irreversible general caspase inhibitor (ab120382)

Davis J et al. PLoS One. 2013; 8(12): e82053. doi: 10.1371/journal.pone.0082053 Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>

ZVAD-fmk treatment does not correct muscular dystrophy in Nl3<sup>-/-</sup> Sgcd<sup>-/-</sup> mice.

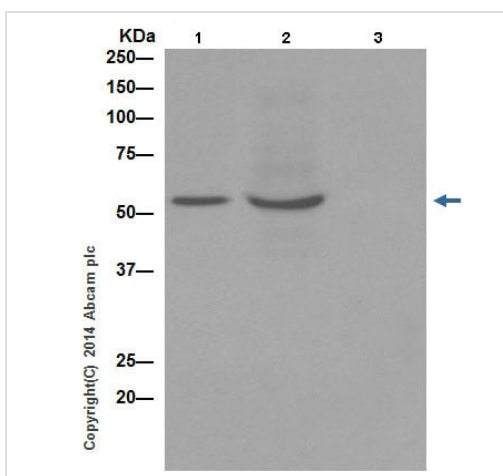
A: Muscle weights normalized to tibial length of quadriceps of mice treated with or without ZVAD-fmk for 4 weeks

B: Creatine Kinase levels

C: Quantification of the time to exhaustion as assessed by involuntary treadmill running measured from vehicle or ZVAD-fmk treated WT and Nl3<sup>-/-</sup> Sgcd<sup>-/-</sup> mice

D: Histologic images taken at 100x of Masson's trichrome stained sections of quadriceps from vehicle or ZVAD-fmk treated WT and Nl3<sup>-/-</sup> Sgcd<sup>-/-</sup> mice

Davis J et al. PLoS One. 2013; 8(12): e82053. doi: 10.1371/journal.pone.0082053



#### Immunoprecipitation - Z-VAD(OH)-FMK, Irreversible general caspase inhibitor (ab120382)

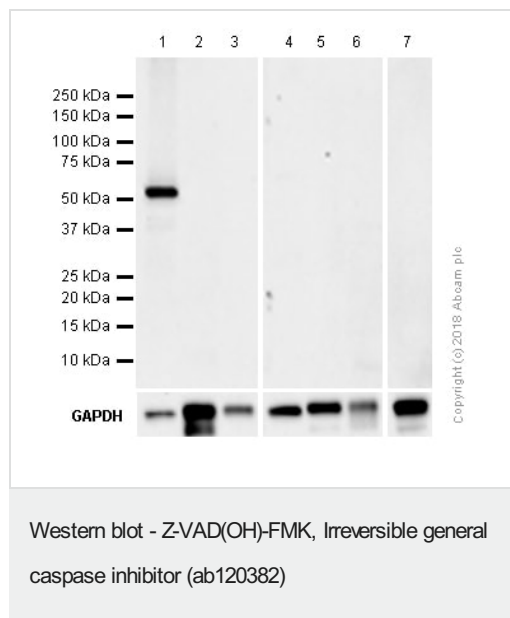
MLKL (phospho S345) was immunoprecipitated from 1mg of L-929 (Mouse connective tissue fibroblast cells) whole cell lysate treated with 20 ng/ml TNF alpha ([ab9642](#)) + 100 nM Smac mimetic + 20 μM z-VAD compound ([ab120382](#)) for 8h using [ab196436](#) at 1/150 dilution. Western blot was performed from the immunoprecipitate using [ab196436](#) at 1/1000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG, was used as secondary antibody at 1/1500 dilution.

**Lane 1:** L-929 whole cell lysate treated with 20 ng/ml TNF alpha ([ab9642](#)) + 100 nM Smac mimetic+ 20 μM z-VAD compound ([ab120382](#)) for 8h; 10 μg (Input).

**Lane 2:** [ab196436](#) IP in L-929 whole cell lysate treated with 20 ng/ml TNF alpha ([ab9642](#)) + 100 nM Smac mimetic+ 20 μM z-VAD compound ([ab120382](#)) for 8h.

**Lane 3:** Rabbit monoclonal IgG ([ab172730](#)) instead of [ab196436](#) in L-929 whole cell lysate treated with 20 ng/ml TNF alpha ([ab9642](#)) + 100 nM Smac mimetic+ 20 μM z-VAD compound ([ab120382](#)) for 8h.

**Blocking and dilution buffer and concentration:** 5% NFDM/TBST.



**All lanes :** Anti-MLKL (phospho S345) antibody [EPR9515(2)] ([ab196436](#)) at 1/1000 dilution

**Lane 1 :** L-929 treated with 20 ng/ml TNF alpha ([ab9642](#)), 100 nM Smac mimetic, and 20  $\mu$ M z-VAD (ab120382) for 8 h, whole cell lysate

**Lane 2 :** Mouse brain tissue lysate

**Lane 3 :** Mouse colon tissue lysate

**Lane 4 :** Mouse lung tissue lysate

**Lane 5 :** Mouse retina tissue lysate

**Lane 6 :** Mouse liver tissue lysate

**Lane 7 :** Raw264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate

Lysates/proteins at 20  $\mu$ g per lane.

### Secondary

**All lanes :** Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/20000 dilution

**Observed band size:** 54 kDa

**Exposure time:** 50 seconds

**Blocking and diluting buffer:** 5% NFDM/TBST.

MLKL pS345 is a trigger for necroptosis. It is only detectable in infection/cellular damaged (PMID:29229989) or aging tissue (PMID: 28807105) but not in normal tissues.

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