

# Monoclonal Antibody to Noxa Biotin Conjugate



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## Monoclonal Antibody to Noxa Biotin Conjugate

**Catalog No :** IMG-349B  
**Formulation :** 100 µg in 200 µl PBS containing 0.05% sodium azide. Sodium azide is highly toxic.  
**Isotype :** Mouse IgG1, Kappa  
**Clone :** 114C307.1  
**Purification :** Protein G Chromatography  
**Species React :** Human  
**Host :** Mouse

**Application**  
ELISA  
**Storage**  
Store at 4 °C for six months. Do not freeze.

### Background

Recently, a BH-3 only member of the Bcl-2 family have been identified in human and mouse and designated as Noxa (for damage) (1). The expression of the Noxa gene involves direct activation of its promoter by p53. Increased expression of Noxa protein occurs in normal thymocytes but not in p53-deficient thymocytes. Noxa cDNA codes for a 103-amino acid protein. The coimmunoprecipitation data suggest that Noxa protein may interact with proteins belonging to the Bcl-2 family, such as, Bcl-XL and Mcl-1. Oda et al (1) have also shown that blocking the endogenous Noxa induction results in the suppression of apoptosis. Treatment of cells with Noxa antisense oligonucleotides blocks radiation-induced apoptosis suggesting that Noxa may represent a mediator of p53-dependent apoptosis.

### Antigen

IMG-349 was developed by immunizing mice with a GST-fusion protein containing human Noxa.

### Genebank Info (Protein)

NP\_066950

### Related Products

- 20101 [Goat Anti-Mouse Ig HRP Conjugate]
- IMG-5019A-1 [Monoclonal Antibody to GAPDH - Loading Control]
- IMG-5019A-2 [Monoclonal Antibody to GAPDH - Loading Control]
- 40162 [Jurkat cell line lysate (T cell leukemia)]

### Reference

- Oda E, Ohki R, Murasawa H, Nemoto J, Shibue T, Yamashita T, Tokino, T, Taniguchi T, and Tanaka N. *Science* 288: 1053-1058 (2000).

### Product Citations

- Bok and Noxa are essential mediators of p53-dependent apoptosis.** Alexander G Yakovlev, Simone Di Giovanni, Geping Wang, Wenfan Liu, Bogdan Stoica, and Alan I Faden. *J. Biol. Chem.*, 279: 28367-28374 (2004). **IMGENEX antibodies cited: 1. NOXA (IMG-349A) [WB, Fig 6A (SH-SY5Y human neuroblastoma cells.)], [WB, Fig 7CD (mammary carcinoma cells, MCF7)], [IF/ICC, Fig 5A, 7A (SH-SY5Y and MCF7 cells)].**
- p53 Has a Direct Apoptogenic Role at the Mitochondria.** Motohiro Mihara, Susan Erster, Alexander Zaika, Oleksi Petrenko, Thomas Chittenden, Petr Pancoska, and Ute M. Moll. *Molecular Cell*, 11, 577-590, (2003). **IMGENEX antibodies cited: 1. NOXA (IMG-349A) [WB, Fig 2B (p53 transfected H1299 cells)].**
- Bcl-xL Deamidation Is a Critical Switch in the Regulation of the Response to DNA Damage.** Benjamin E. Deverman, Brian L. Cook, Scott R. Manson, Robert A. Niederhoff, Ellen M. Langer, Ivana Rosová, Laura A. Kulans, Xiaoyun Fu, Justin S. Weinberg, Jay W. Heinecke, Kevin A. Roth, and Steven J. Weintraub. *Cell*, 111, 51-62 (2002). **IMGENEX antibodies cited: 1. NOXA (IMG-349) [WB, Fig 7AB, (Rb null osteosarcoma cell line, SAOS-2)].**
- In Vivo Mitochondrial p53 Translocation Triggers a Rapid First Wave of Cell Death in Response to DNA Damage That Can Precede p53 Target Gene Activation.** Susan Erster, Motohiro Mihara, Roger H. Kim, Oleksi Petrenko, and Ute M. Moll. *Mol. Cell. Biol.*, 24: 6728-6741 (2004). **IMGENEX antibodies cited: 1. NOXA (IMG-349A) [WB, Fig 4ACD (primary human mammary epithelial cells, HMEC)].**
- Id3 induces a caspase-3- and -9-dependent apoptosis and mediates UVB sensitization of HPV16 E6/7 immortalized human keratinocytes.** C M Simbulan-Rosenthal, A Daher, V Trabosh, W-C Chen, D Gerstel, E Soeda, D S Rosenthal. *Oncogene* 25, 3649-3660 (2006). **IMGENEX antibodies cited: NOXA (IMG-349A) [WB, Fig 8B (Id3 transfected keratinocyte cells)].**
- Tumor Suppressor HIC1 Directly Regulates SIRT1 to Modulate p53-Dependent DNA-Damage Responses.** Wen Yong Chen, David H. Wang, RayWhay Chiu Yen, Jianyuan Luo, Wei Gu and Stephen B. Baylin. *Cell*, 123 (3): 437-448 (2005). **IMGENEX products cited: 1. NOXA (IMG-349A) [WB, Fig 6E (MCF-7 breast cancer cells)]. 2. p53 siRNA Ready Gene (IMG-803) [WB, Fig 2AB (MCF-7 cells)].**
- Novel link between E2F1 and Smac/DIABLO: proapoptotic Smac/DIABLO is transcriptionally upregulated by E2F1** Xie W., P. Jiang, L. Miao, Y. Zhao, Z. Zhimin, L. Qing, W-G Zhu, and M. Wu. *Nucleic Acids Res.*, 34: 2046-2055 (2006). **IMGENEX antibodies cited: 1. Noxa (IMG-349) [WB, Fig.4 (H1299 cells)].**
- Inhibition of Glutathione Synthesis Overcomes Bcl-2-Mediated Topoisomerase Inhibitor Resistance and Induces Nonapoptotic Cell Death via Mitochondrial-Independent Pathway.** Yoshia A, H Takemura, H Inoue, T Miyashita, and T Ueda., *Cancer Res.*, 66 (11): 5772-5780 (2006). **IMGENEX antibodies cited: 1. Noxa (IMG-349) [WB, Fig.1A-C (697-Neo cells) and Fig.1D (697-Bcl-2 cells)].**
- Influence of bcl-2 Family Members on the Cellular Response of small-cell lung cancer cell lines to ABT-737.** Tahir S, X Yang, M Anderson, S Morgan-Lappe, A Sarthy, J Chen, R Warber, S-C Ng, S Fesik, S Rosenberg, C Tse. *Cancer Research* 67: 1176-1183 (2007). **Imgenex antibodies cited: 1. Noxa (IMG-349A) [WB, (small cell lung cancer cell lines) Figs: 3B,C; 5A].**
- Inhibition of apoptosis facilitates necrosis induced by cisplatin in gastric cancer cells.** Zhang L, Y Hao, C Hu, Y Ye, Q Xie, R Thorne, P Hersey, X Zhang. *Anti-Cancer Drugs* 19: 159-166 (2008). **WB (human gastric adenocarcinoma cell lines SGG-7901), Fig. 5 a,b.**
- Inhibition of apoptosis facilitates necrosis induced by cisplatin in gastric cancer cells.** Zhang L, Y Hao, C Hu, Y Ye, Q Xie, R Thorne, P Hersey, X Zhang. *Anti-Cancer Drugs* 19: 159-166 (2008). **Imgenex antibodies cited [WB (human gastric adenocarcinoma cell lines SGG-7901 (Fig. 5 a,b) and BGC-823 (Fig. 5a)]: 1. IMG-349A (Noxa): Fig. 5 a,b. The antibody was siRNA validated in Fig. 5b. 2. IMG-171 (Bim): Fig. 5a,b.**
- c-Abl kinase inhibitors overcome CD40-mediated drug resistance in CLL; implications for therapeutic targeting of chemoresistant niches.** Hallaert D, A Jaspers, C Noesel, M Oers, A Kater, E Eldering. *Blood* doi:10.1182/blood-2008-03-146704 (2008). **WB (human chronic lymphocytic leukemia cells), Fig. 1A.**
- Up-regulation of Mcl-1 is critical for survival of human melanoma cells upon endoplasmic reticulum stress.** Jiang C, K Lucas, K Kiejda, M Wade, C deBock, R Thorne, J Allen,

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P Hersey, X Zhang. *Cancer Research* 68: 6708-6717 (2008). **Imgenex antibodies cited:**

**1. IMG-349A (Noxa): WB (human melanoma cell lines), Figs. 3B,D; 4B.**

**2. IMG-3164 (Bim): WB (human melanoma cell lines), Figs. 3B, 4D.**

**14. Overexpression of OATP1B3 confers apoptotic resistance in colon cancer.** Lee W, A Belkhir, A Lockhart, N Merchant, H Glaeser, E Harris, M Washington, E Brunt, A Zaika, R Kim, El-Rifai. *Cancer Research* 68: 10315-103223 (2008). **WB (human colorectal cell lines), Fig. 5D.**

**15. In vivo dynamics of stable chronic lymphocytic leukemia inversely correlate with somatic hypermutation levels and suggest no major leukemic turnover in bone marrow.** van Gent R, A Kater, S Otto, A Jaspers, J Borghans, N Vrisekoop, M Ackermans, A Ruiter, S Wittebol, E Eldering, M Oers, K Tesselaar M Kersten, F Miedema. *Cancer Research* 68: 10137-10144 (2008). **WB (Human chronic lymphocytic leukemia cells), Fig. 3B.**

**16. Interaction of the p53 protein family in cellular stress response in gastrointestinal tumors.** Vilgelm A, M Washington, J Wei, H Chen, V Prassolov, A Zaika. *Mol Cancer Ther* 9: 693-705 (2010). **IMGENEX products cited:**

**1. delta Np73 (IMG-313A) IHC (paraffin), Fig 1A, human colorectal adenocarcinoma cells.**

**2. NOXA (IMG-349A) WB, Fig 2A, Fig 2B, Fig 2D, colon adenocarcinoma and esophageal carcinoma cell lines.**

**17. The Bcl-2 homology domain 3 mimetic ABT-737 targets the apoptotic machinery in acute lymphoblastic leukemia resulting in synergistic in vitro and in vivo interactions with established drugs.** High L, B Szymanska, U Wilczynska-Kalak, N Barber, R O'Brien, S Khaw, I Vikstrom, A Roberts, R Lock. *Mol Pharmacol* 77: 483-494 (2010). **IMGENEX product cited: Noxa (IMG-349A): WB (eight different leukemia cell lines and nine acute human myelogenous leukemia cells propagated in mouse xenografts), Fig 3A. WB (AML-19 cell line), Fig 5B.**

**18. Identification of expression signatures predictive of sensitivity to the Bcl-2 family member inhibitor ABT-263 in small cell lung carcinoma and leukemia/lymphoma cell lines.** Tahir S, J Wass, M Joseph, V Devanarayan, P Hessler, H Zhang, S Elmore, P Kroeger, C Tse, S Rosenberg, M Anderson. *Mol Cancer Ther* 9: 545-557 (2010). **IMGENEX product cited: Noxa (IMG-349A): WB (various leukemia/lymphoma cancer cell lines), Fig 2B.**

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