

## Monoclonal Antibody to Psoriasin/HID5/S100A7



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### Monoclonal Antibody to Psoriasin/HID5/S100A7

**Catalog No :** IMG-409A  
**Formulation :** 100 µg in 200 µl PBS containing 0.05% BSA, and 0.05% sodium azide. Sodium azide is highly toxic.  
**Isotype :** Mouse IgG1, Kappa  
**Clone :** 47C1068  
**Purification :** Protein G Chromatography  
**Species React :** Human  
**Host :** Mouse

**Application**  
Western blot analysis: 1-3 µg/ml; additionally, see product citation (1) IHC (paraffin)  
IHC (frozen)  
**Storage**  
Store at 4°C, stable for 6 months. For long-term storage, aliquot and store at -20°C.

**Recommended Positive Control:** MCF10A, MCF7 cell lysate

#### Background

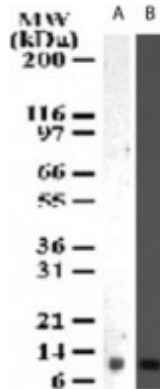
Psoriasin/HID-5 was originally identified as an up-regulated protein in psoriatic keratinocytes (1). Subsequently, this protein was found to have elevated expression in abnormally differentiating primary keratinocytes and in various carcinomas, including ductal carcinoma in situ (2-3). Psoriasin/HID-5 may play a role in the establishment or maintenance of these pathologies, and may serve as a diagnostic marker of particular tumor types or abnormally proliferative epithelia.

#### Antigen

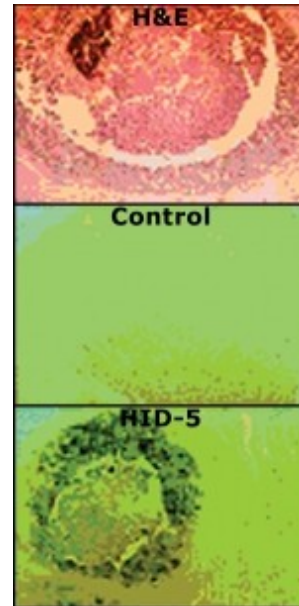
This antibody was developed against recombinant psoriasin/HID-5 protein.

#### Genebank Info (Protein)

NP\_002954



Western blot analysis of Psoriasin/HID-5 in A) MCF10A and B) MCF7 cell lysate using IMG-409A at 1 µg/ml.



Immunohistochemical analysis of Psoriasin/HID-5 expression in formalin-fixed, paraffin-embedded ductal carcinoma in situ. Shown are successive sections of H&E staining, a control monoclonal antibody, and IMG-409.

#### 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]

#### Reference

- Madsen, P., Rasmussen, H., et. al. Molecular cloning, occurrence, and expression of a novel partially secreted protein psoriasin that is highly up-regulated in psoriatic skin, J. Invest. Derm., 97:701-712 (1991).

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2. Watson, P., Leygue, E., et al. Psoriasis (S100A7). *Int. J. Biochem. Cell. Biol.*, 30: 567-571 (1998).
3. Enerback, C., Porter, D., Psoriasis expression in mammary epithelial cells in vitro and in vivo. *Cancer Res.*, 62:43-47 (2002).

## Product Citations

1. **Psoriasis Expression in Mammary Epithelial Cells in Vitro and in Vivo.** Charlotta Enerbäck, Dale A. Porter, Pankaj Seth, Dennis Sgroi, Justine Gaudet, Stanislaw Weremowicz, Cynthia C. Morton, Stuart Schnitt, Robert L. Pitts, Jason Stampfl, Kerry Barnhart, and Kornelia Polyak. *Cancer Res.*, 62: 43-47 (2002).
2. **Expression patterns of S100A7 (psoriasis) and S100A9 (calgranulin-B) in keratinocyte differentiation.** Hanna Martinsson, Maria Yhr and Charlotta Enerbäck. *Experimental Dermatology*, 14 (3): 161-168 (2005).
3. **IL-22 Inhibits Epidermal Differentiation and Induces Proinflammatory Gene Expression and Migration of Human Keratinocytes.** Katia Boniface, François-Xavier Bernard, Martine Garcia, Austin L. Gurney, Jean-Claude Lecron, and Franck Morel. *J. Immunol.*, 174: 3695-3702 (2005).
4. **Molecular Markers in Ductal Carcinoma in Situ of the Breast.** 2003. Porter D, J Lahti-Domenici, A Keshaviah, YK Bae, P Argani, J Marks, A Richardson, A Cooper, R Strausberg, GJ Riggins, S Schnitt, E Gabrielson, R Gelman, K Polyak. *Molecular Cancer Res.* 1:362-375. (IHC formalin-fixed, paraffin-embedded; Fig. 2C)
5. **BRCA1 and c-Myc Associate to Transcriptionally Repress Psoriasis, a DNA Damage Inducible Gene.** Richard D. Kennedy, Julia J. Gorski, Jennifer E. Quinn, Gail E. Stewart, Colin R. James, Stephen Moore, Karl Mulligan, Ethan D. Emberley, Tong F. Lioe, Patrick J. Morrison, Paul B. Mullan, George Reid, Patrick G. Johnston, Peter H. Watson, and D. Paul Harkin. *Cancer Res.*, 65: 10265-10272 (2005).
6. **A Putative Role for Psoriasis in Breast Tumor Progression.** Krop, I., A Marz, H. Carlsson, X. Li, N. Bloustein-Qimron, M. Hu, R. Gelman, MS Sabel, S Schnitt, S Ramaswamy, CG Kleer, C. Enerback, and K. Polyak. *Cancer Res.* 65:11326-11334. (2005). (IHC formalin-fixed, paraffin embedded using IMGEX's Psoriasis/HID5/S100A7 antibody (Cat no. IMG-409A) and IMGEX's Breast Cancer Tissue Microarray (Cat no. IMH-364).
7. **Influence of calcium on the proteolytic degradation of the calmodulin-like skin protein (calmodulin-like protein 5) in psoriatic epidermis.** Bruno Méhul, Dominique Bernard, Michel Brouard, Caroline Delattre, Rainer Schmidt. *Experimental Dermatology*, 15 (6): 469-477 (2006).
8. **The effects of IL-20 subfamily cytokines on reconstituted human epidermis suggest potential roles in cutaneous innate defense and pathogenic adaptive immunity in psoriasis.** SM Sa, PA Valdez, J Wu, K Jung, F Zhong, L Hall, I Kasman, J Winer, Z Modrusan, DM Danilenko, and W Ouyang. *J Immunol* 178:2229-2240 (2007). (IHC-formalin-fixed, paraffin-embedded: human epidermis model, Fig. 3C)
9. **Oncostatin M Secreted by Skin Infiltrating T Lymphocytes Is a Potent Keratinocyte Activator Involved in Skin Inflammation.** K Boniface, C Diveu, F Morel, N Pedretti, J Froger, E Ravon, M Garcia, E Venereau, L Preisser, E Guignouard, G Guillet, G Dagregorio, J Pene, J-P Moles, H Yssel, S Chevalier, F-X Bernard, H Gascan, and J-C Lecron. *J. Immunol.*, 178: 4615-4622 (2007). **Imgenex antibodies cited: 1. anti-S100A7 (IMG-409A)[WB, Fig 3D (normal human epidermal keratinocyte (NHEK)), IHC-P, Fig 5 (reconstituted human epidermis (RHE))] IHC-F, Fig 6A (normal skin and psoriatic skin or atopic dermatitis lesion skin)]. 2. anti-beta-tubulin Abs (IMG-5810A)[WB, Fig1C (immunoprecipitated NHEK)].**
10. Identification and validation of S100A7 associated with lung squamous cell carcinoma metastasis to brain. Hao Zhang, Yinping Wang, Yue Chen, Suozhu Sun, Na Li, Dongxia Lv, Chuanjun Liu, Lingyun Huang, Dacheng He and Xueyuan Xiao. *Lung Cancer*, 57: 37-45 (2007).
11. **Gene expression in breast cancer.** Polyak K, D Porter, and M Allinen. *United States Patent 20070054271* (03/08/2007) <http://www.freepatentsonline.com/20070054271.html>  
**Imgenex products cited:**  
1. IMG-409A (Psoriasis/HID5/S100A7 mAb), IHC (paraffin): Fig 4A, C  
2. IMH-364 [Breast: cancer-metastasis-normal (60 samples) tissue array], IHC (paraffin) using various antibodies including IMG-409A, Fig 4A, C
12. **S100A7 (psoriasis), highly expressed in ductal carcinoma in situ (DCIS), is regulated by IFN-gamma in mammary epithelial cells.** Petersson S, A Bylander, M Yhr, and C Enerback. *BMC Cancer*, 7:205; doi:10.1186/1471-2407-7-205 (2007). **WB: Fig 1 (MCF10A, HEK293, and MDA-MB-468 cells), Fig 3 (MDA-MB-468, HEK293, MCF10A, and SUM190 cells), Fig 5 (MCF10A cells), and Fig 6 (TAC2-tetEGFP-2-psoriasis cells).**

The HID5/Psoriasis/S100A7 (IMG-409) mAb was transfected validated by WB using a tetracycline-inducible psoriasis expression vector in a TAC2 mouse mammary epithelial cell line (Fig 6).

13. **Biological markers predictive of invasive recurrence in DCIS.** Nofech-Mozes S, J Spayne, E Rakovitch, H Kahn, A Seth, J Pignol, L Lickley, L Pazat, W Hanna. *Oncology* 2:7-18 (2008). **IHC (Paraffin), human breast tissue, Fig. 2E, Table 1.**
14. **S100A7-downregulation inhibits epidermal growth factor-induced signaling in breast cancer cells and blocks osteoclast formation.** Paruchuri V, A Prasad, McHugh K, Bhat H, Polyak K, Ganju R. *PLoS ONE* 3:1741 (2008). **WB (human breast cancer cell lines), Figs. 1A (MCF-7 cells), B (MDA-MB-468 cells); 2A (MDA-MB-468 cells).**
15. **Chemotactic activity of S100A7 (psoriasis) is mediated by the receptor for advanced glycation end products and potentiates inflammation with highly homologous but functionally distinct S100A15.** Wolf R, OMZ Howard, H-F Dong, C Voscopoulos, K Boeshans, J Winston, R Divi, M Gunsior, P Goldsmith, B Ahvazi, T Chavakis, JJ Oppenheim and SH Yuspa. *J Immunology* 181:1499-1506 (2008). **WB: Fig 1A (human S100 recombinant proteins and human keratinocytes). IHC (F): Fig 1B and C (adult human skin), Fig 1C (inflamed lesional psoriasis).**

## Notes:

1. The IMG-409 antibody is specific for S100A7, it recognized recombinant human S100A7 but not other closely related human S100 recombinant proteins. That is, the antibody does not recognize S100A8, S100A10 or S100A15 (Fig 1A).
2. The IMG-409 antibody detects both the low and high molecular weight forms of S100A7 in human keratinocytes (Fig 1A).
16. **Highly homologous hS100A15 and hS100A7 proteins are distinctly expressed in normal breast tissue and breast cancer.** Wolf R, C Voscopoulos, J Winston, A Dharamsi, P Goldsmith, M Gunsior, B K Vonderhaar, M Olson, P H Watson, S H Yuspa. *Cancer Letters* 277:101-107 (2009).  
**WB (rhS100A7 and rhS100A15), Fig. 1b**  
**IHC-F (human normal adult breast tissue), Fig. 2b**  
**WB (human normal breast tissue and invasive breast carcinoma), Fig. 3a**  
**IHC-F (human normal and invasive breast carcinoma), Fig. 3b**  
**WB (human invasive ductal carcinomas), Fig. 4**

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