Cal Bioreagents

Id Protein Research Products

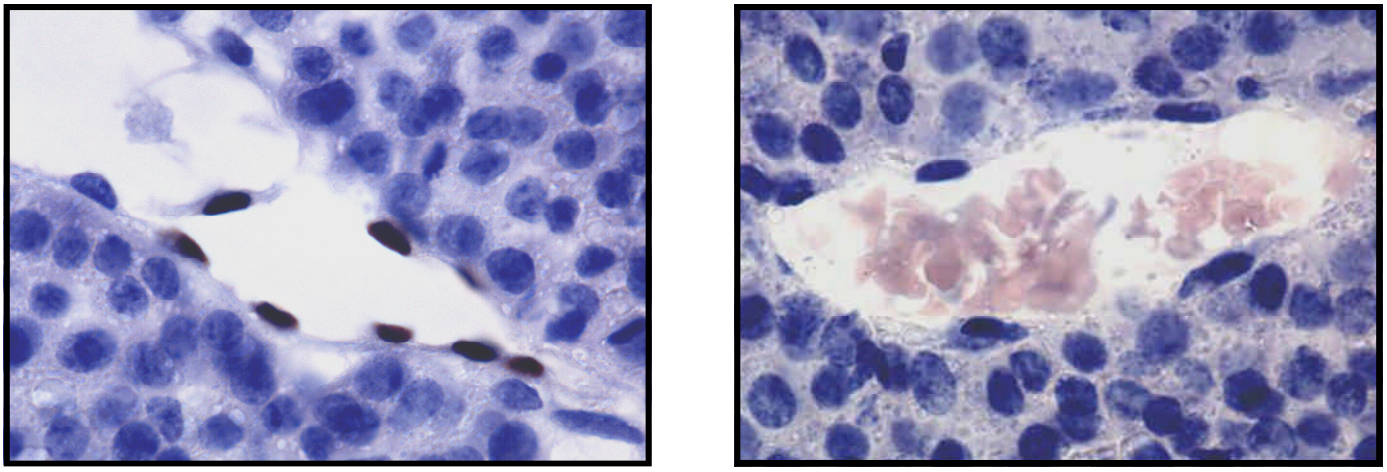

Figure 1. MMTV-*neu* transgenic mammary tumors, stained with Rabbit monoclonal anti-mouse Id1, clone 37-2. Left panel, Id1 wild type mouse shows specific nuclear staining of endothelial cells. Right panel, Id1 knockout mouse shows no specific Id1 staining. (*courtesy of Dr. Robert Benezra, Sloan Kettering Cancer Institute*).

Id1, Id 2, Id3 Reagents

- **Id1 Rabbit Monoclonals**
- **Id2 Rabbit Monoclonals**
- **Id3 Rabbit Monoclonals**
- **Western Blot applications.**
- **Suitable for IHC with formalin fixed paraffin embedded tissues**

For Research Use Only

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Id Protein Background

There are four members of the Id protein family, Id1, Id2, Id3, and Id4. These proteins were initially discovered as proteins involved in the negative control of cell differentiation. Id proteins act as a negative regulator of transcription through physical interaction with a group of transcription factors known as bHLH (basic helix-loop-helix) proteins. Id proteins interact with bHLH proteins in a manner that prevents DNA binding to the HLH proteins. Because of this activity, the group of proteins were named as Id (*for inhibitor of DNA binding).* Id proteins have also been found to bind with a number of other proteins such as Rb, Ets, Paz, MIDA-1 and SREBP-1c. Id proteins may play a central role in coordinating gene expression, cell proliferation, tumorigenesis, and angiogenesis. Id proteins have been found to be over-expressed in many tumor types, including Glioblastoma, Medulloblastoma, Neuroblastoma, Pancreatic Cancer, Thyroid Cancer, Squamous Cell Carcinoma, Breast Carcinoma, Endometrial Cancer, Cervical Cancer, Melanoma, and Retinoblastoma. There is a growing body of evidence that Id1 and Id3 play a central role in angiogenesis. Experiments in Id1-/-, Id3-/- knockout mice indicated that loss of Id expression did not allow for vascularization and subsequent growth of tumors. (1,2,3,4). IHC with Rabbit Monoclonal anti-Human Id1 clone 165-14 has shown Id1 expression in vascular endothelium cells of “common” mammary carcinomas and in the nucleus of tumor cells of poorly differentiated, aggressive mammary tumors with metaplastic morphology. (5).

1. Benezra *et al*., BioChemica et Biophysica Acta 1551: (2001) F39-F47.
2. Benezra *et al*., Oncogene 20:(2001) 8334-8341.
3. Lasorella *et al*., Oncogene 20: (2001) 8326-8333.
4. Zebedee *et al*., Oncogene 20: (2001) 8317-8325.
5. Perk *et al*., Cancer Res 66: (2006) 10870-10877.

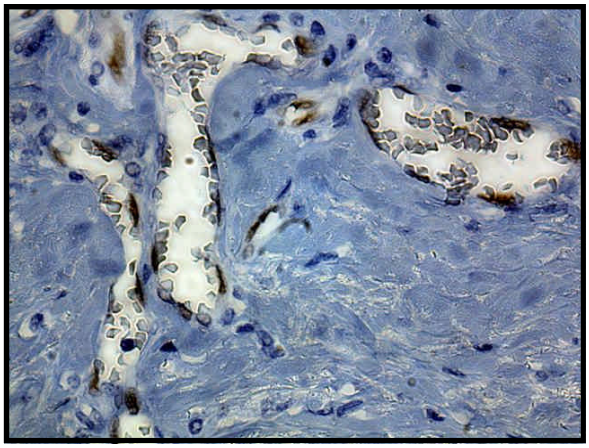

Figure 2. Human Breast tumor stained with rabbit monoclonal **anti-human/mouse Id1 clone 195-14**. Specific Id1 staining can be seen in the nucleus of endothelial cells. (*courtesy of Dr. Robert Benezra, Sloan Kettering Cancer Institute*)

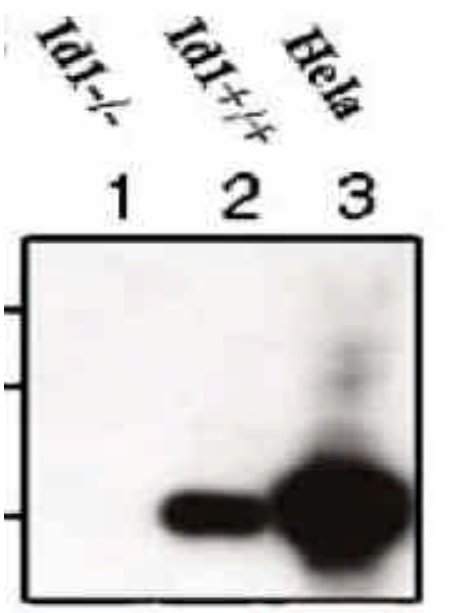

Figure 3. Western Blot with rabbit monoclonal **anti-human/mouse Id1 clone 195-14**. lane 1; Whole cell extract from $id1^{-/-}$ mouse embryonic fibroblasts. Lane 2: Whole cell extract from $Id^{+/+}$ mouse embryonic fibroblasts. Lane 3: Whole cell extract from HeLa cells. (*5*). Clone 195-14 reacts with the 17kD Id-1 protein in the $Id^{+/+}$ fibroblasts and the HeLa cell extracts.

CalBioreagents Rabbit Monoclonal anti Id1, Id2, and Id3 antibodies are suitable for use in Western Blot applications and for Immunohistochemistry with formalin fixed, paraffin embedded tissues.

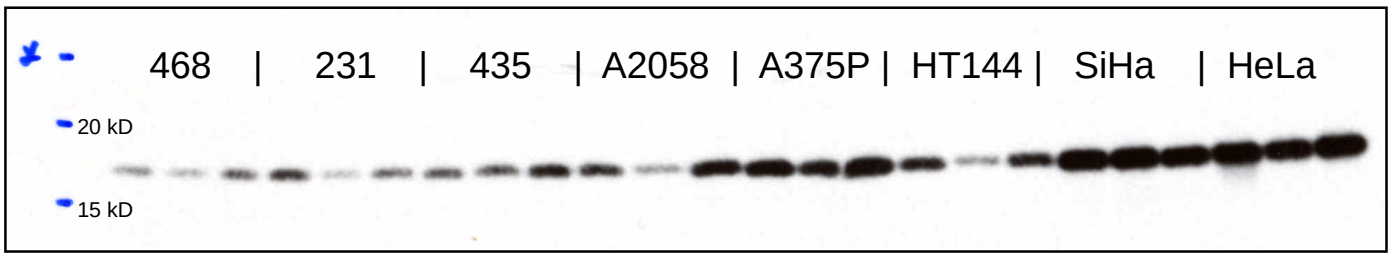

Figure 4. Western Blot data with rabbit monoclonal **anti-human Id1 clone 5-3.** 4-20% Gradient SDS-PAGE Precision XT gel (BioRad) . 15 ug of cell lysate was electrophoresed per lane and run in triplicate. Breast Cancer = 468, 231, and 435. Melanoma = A2058, A375P, and HT144. Cervical Carcinoma = SiHa and HeLa. Rabbit monoclonal anti-human Id1 clone 5-3 reacts with the 17kD Id1 band in multiple cancer types. (*courtesy of Dr. Hong Zhang, Stanford University*)

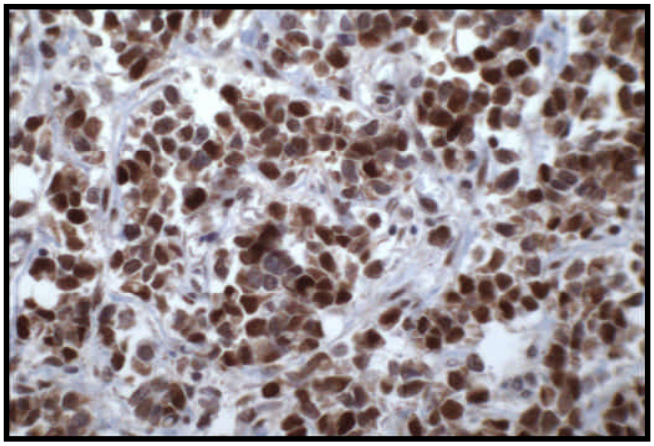

Figure 5. Human Breast tumor stained with rabbit monoclonal **anti-human/mouse Id2 clone 9-2-8**. Specific Id2 staining can be seen in the nucleus of tumor cells.

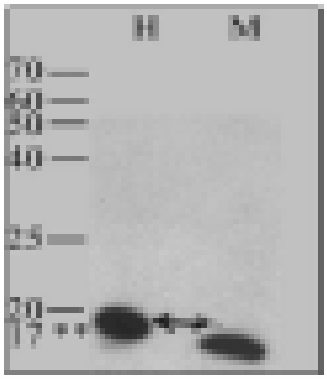

Figure 6. Western Blot with rabbit monoclonal **anti-human/mouse Id3 clone 17-3**. Lane H: HeLa cell extract. Lane M: Whole cell extract of $Id3^{+/+}$ Mouse embryonic fibroblasts. Clone 17-3 reacts with both Mouse Id3 and Human Id3 in Western Blots.

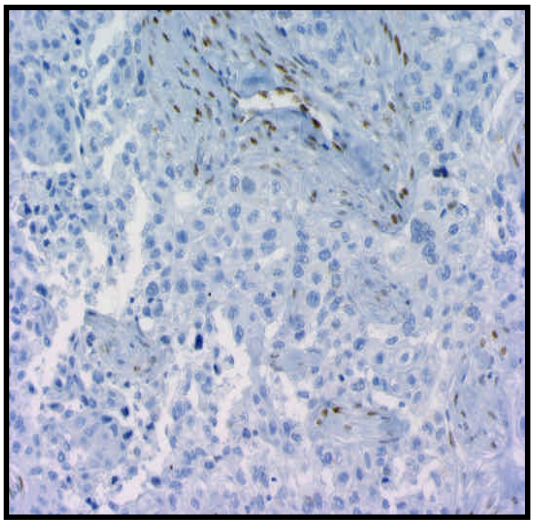

Figure 7. Human Breast tumor stained with rabbit monoclonal **anti-human/mouse Id3 clone 17-3.** Human mammary tumor stained with Clone 17-3. Id3 is expressed in the nucleus of tumor cells. (*courtesy of Dr. Robert Benezra, Sloan Kettering Cancer Institute)*

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Id Protein Research Products

Marker	Catalog #	Packaging	Product	Application	Description
Id1	M082	50 ug	Rabbit Monoclonal	WB, IHC	Anti Mouse Id1 clone 37-2
Id1	M083	100 ug	Rabbit Monoclonal	WB, IHC	Anti Mouse Id1 Clone 37-2
Id1	M084	1 mg	Rabbit Monoclonal	WB, IHC	Anti Mouse Id1 Clone 37-2
Id1	M085	50 ug	Rabbit Monoclonal	WB,IHC	Anti Human/Mouse Id1 Clone 195-14
Id1	M086	100 ug	Rabbit Monoclonal	WB, IHC	Anti Human/Mouse Id1 Clone 195-14
Id1	M087	1 mg	Rabbit Monoclonal	WB,IHC	Anti Human/Mouse Id1 Clone 195-14
Id1	M088	50 ug	Rabbit Monoclonal	WB	Anti Human Id1 Clone 5-3
Id1	M089	100 ug	Rabbit Monoclonal	WB	Anti Human Id1 Clone 5-3
Id1	M090	1 mg	Rabbit Monoclonal	WB	Anti Human Id1 Clone 5-3
Id2	M213	50 ug	Rabbit Monoclonal	WB, IHC	Anti Human/Mouse Id2 Clone 9-2-8
Id2	M214	100 ug	Rabbit Monoclonal	WB, IHC	Anti Human/Mouse Id2 Clone 9-2-8
Id2	M215	1 mg	Rabbit Monoclonal	WB, IHC	Anti Human/Mouse Id2 Clone 9-2-8
Id3	M091	50 ug	Rabbit Monoclonal	WB	Anti Human Id3 Clone 3-3
Id3	M092	100 ug	Rabbit Monoclonal	WB	Anti Human Id3 Clone 3-3
Id3	M093	1 mg	Rabbit Monoclonal	WB	Anti Human Id3 Clone 3-3
Id3	M094	50 ug	Rabbit Monoclonal	WB	Anti Human/Mouse Id3 Clone 6-1
Id3	M095	100 ug	Rabbit Monoclonal	WB	Anti Human/Mouse Id3 Clone 6-1
Id3	M096	1 mg	Rabbit Monoclonal	WB	Anti Human/Mouse Id3 Clone 6-1
Id3	M097	50 ug	Rabbit Monoclonal	WB	Anti Human/Mouse Id3 Clone 16-1
Id3	M098	100 ug	Rabbit Monoclonal	WB	Anti Human/Mouse Id3 Clone 16-1
Id3	M099	1 mg	Rabbit Monoclonal	WB	Anti Human/Mouse Id3 Clone 16-1
Id3	M100	50 ug	Rabbit Monoclonal	WB, IHC (IHC for human only)	Anti Human/Mouse Id3 clone 17-3
Id3	M101	100 ug	Rabbit Monoclonal	WB, IHC (IHC for human only)	Anti Human/Mouse Id3 Clone 17-3
Id3	M102	1 mg	Rabbit Monoclonal	WB, IHC (IHC for human only)	Anti Human/Mouse Id3 Clone 17-3
Id3	M103	50 ug	Rabbit Monoclonal	WB	Anti Human/Mouse Id3 Clone 42-1
Id3	M104	100 ug	Rabbit Monoclonal	WB	Anti Human/Mouse Id3 Clone 42-1
Id3	M105	1 mg	Rabbit Monoclonal	WB	Anti Human/Mouse Id3 Clone 42-1

Products are for Research Use Only. Not intended for Diagnostic Purposes.

CalBioreagents

TO ORDER:

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