**Applications:**
- W—Western  
- IP—Immunoprecipitation  
- IHC—Immunohistochemistry  
- ChIP—Chromatin Immunoprecipitation

**Species Cross-Reactivity***:
- H, M, R

**Molecular Wt.**
- 135 kDa

**Isotype**
- Mouse IgG1**

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**Background:** Cadherins are a superfamily of transmembrane glycoproteins that contain cadherin repeats of approximately 100 residues in their extracellular domain. Cadherins mediate calcium-dependent cell-cell adhesion and play critical roles in normal tissue development (1). The classic cadherin subfamily includes N-, P-, R-, B-, and E-cadherins, as well as about ten other members that are found in adherens junctions, a cellular structure near the apical surface of polarized epithelial cells. The cytoplasmic domain of classical cadherins interacts with β-catenin, γ-catenin (also called plakoglobin), and p120 catenin. β-catenin and γ-catenin associate with α-catenin, which links the cadherin-catenin complex to the actin cytoskeleton (2). While β- and γ-catenin play structural roles in the junctional complex, p120 regulates cadherin adhesive activity and trafficking (1-4). Investigators consider E-cadherin an active suppressor of invasion and growth of many epithelial cancers (1-3). Research studies indicate that cancer cells have up-regulated N-cadherin in addition to loss of E-cadherin. This change in cadherin expression is called the “cadherin switch”. N-cadherin cooperates with the FGF receptor, leading to overexpression of MMP-9 and cellular invasion (3). Research studies have shown that in endothelial cells, VE-cadherin signaling, expression, and localization correlate with vascular permeability and tumor angiogenesis (5,6). Investigators have also demonstrated that expression of P-cadherin, which is normally present in epithelial cells, is also altered in ovarian and other human cancers (7,8).

**Specificity/Sensitivity:** E-Cadherin (4A2) Mouse mAb recognizes endogenous levels of total E-cadherin protein. This antibody does not cross-react with other cadherin proteins.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with recombinant protein specific to human E-cadherin protein.

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**Recommended Antibody Dilutions:**

<table>
<thead>
<tr>
<th>Application</th>
<th>Dilution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western blotting</td>
<td>1:1000</td>
</tr>
<tr>
<td>Immunoprecipitation</td>
<td>1:200</td>
</tr>
<tr>
<td>Immunohistochemistry</td>
<td>1:100</td>
</tr>
<tr>
<td>Unmasking buffer</td>
<td>Citrate</td>
</tr>
<tr>
<td>Antibody diluent</td>
<td>SignalStain® Antibody Diluent #8112</td>
</tr>
<tr>
<td>Detection reagent</td>
<td>SignalStain® Boost (HRP) #8125</td>
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<tr>
<td>Optimal IHC dilutions</td>
<td>1:50</td>
</tr>
<tr>
<td>Fixative</td>
<td>4% Formaldehyde</td>
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<tr>
<td>Permeabilization</td>
<td>0.3% Triton X-100</td>
</tr>
<tr>
<td>Flow Cytometry</td>
<td>1:200</td>
</tr>
</tbody>
</table>

**Storage:**
- Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

*Species cross-reactivity is determined by western blot.

**Anti-mouse secondary antibodies must be used to detect this antibody.

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**Background References:**

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TWEEN is a registered trademark of ICI Americas, Inc.

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**IMPORTANT:** For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

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Western blot analysis of extracts from MCF7 (+) and HeLa (-) cells using E-Cadherin (4A2) Mouse mAb (upper) and Pan-Cadherin (28E12) Rabbit mAb #4073 (lower).

Confocal immunofluorescent analysis of MCF7 (positive, left) and HeLa (negative, right) cells using E-Cadherin (4A2) Mouse mAb (green). Blue pseudocolor= DRAQ5® #4084 (fluorescent DNA dye).

Immunohistochemical analysis of paraffin-embedded MCF7 (left) and HeLa (right) cell pellets using E-Cadherin (4A2) Mouse mAb.

Flow cytometric analysis of HeLa cells (blue) and MCF7 cells (green) using E-Cadherin (4A2) Mouse mAb. Anti-mouse IgG (H+L), F(ab')2 Fragment (Alexa Fluor® 488 Conjugate) #4408 was used as a secondary antibody.

Immunohistochemical analysis of paraffin-embedded human endometrial adenocarcinoma using E-Cadherin (4A2) Mouse mAb.

Immunohistochemical analysis of paraffin-embedded human non-small cell lung carcinoma using E-Cadherin (4A2) Mouse mAb.