# Exosomal Marker Antibody Sampler Kit

## Product Includes

<table>
<thead>
<tr>
<th>Product #</th>
<th>Quantity</th>
<th>Mol. Wt</th>
<th>Isotype/Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alix (3A9) Mouse mAb</td>
<td>2171</td>
<td>20 µl</td>
<td>95 kDa</td>
</tr>
<tr>
<td>Annexin V Antibody</td>
<td>8555</td>
<td>20 µl</td>
<td>30 kDa</td>
</tr>
<tr>
<td>CD54/ICAM-1 (E3Q9N) XP® Rabbit mAb</td>
<td>67836</td>
<td>20 µl</td>
<td>89, 92 kDa</td>
</tr>
<tr>
<td>CD9 (D8O1A) Rabbit mAb</td>
<td>13174</td>
<td>20 µl</td>
<td>22, 24, 35 kDa</td>
</tr>
<tr>
<td>GM130 (D6B1) XP® Rabbit mAb</td>
<td>12480</td>
<td>20 µl</td>
<td>130 kDa</td>
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<tr>
<td>EpCAM (D1B3) Rabbit mAb</td>
<td>2626</td>
<td>20 µl</td>
<td>40 kDa</td>
</tr>
<tr>
<td>HSP70 (D69) Antibody</td>
<td>4876</td>
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<td>70 kDa</td>
</tr>
<tr>
<td>Flotillin-1 (D2V7J) XP® Rabbit mAb</td>
<td>18634</td>
<td>20 µl</td>
<td>49 kDa</td>
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<tr>
<td>Anti-rabbit IgG, HRP-linked Antibody</td>
<td>7074</td>
<td>100 µl</td>
<td>Goat</td>
</tr>
<tr>
<td>Anti-mouse IgG, HRP-linked Antibody</td>
<td>7076</td>
<td>100 µl</td>
<td>Horse</td>
</tr>
</tbody>
</table>

## Description

The Exosomal Marker Antibody Sampler Kit provides an economical means to evaluate the presence of exosomal markers. The kit includes enough primary antibody to perform two western blot experiments for each target.

## 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 antibodies.

## Background

Exosomes are small membrane-bound vesicles that in recent years have emerged as important molecules for inter-cellular communication. Exosomes are produced during both normal and pathophysiological conditions, and cancer cells have been shown to secrete exosomes in greater amounts than normal cells (reviewed in 1). The exosomal markers contained in this kit are Alix, Annexin V, ICAM-1, CD9, GM130, EpCAM, flotillin, and HSP70.

Alix, a cytosolic scaffold protein, regulates many cellular processes including endocytic membrane trafficking, cell adhesion through interactions with ESCRT (endosomal sorting complex required for transport) proteins, endophilins, and CIN85 (Cbl-Interacting protein of 85 kDa) (2, 3).

Annexin V is a ~30 kDa protein that binds to phospho-lipids in a calcium-dependent manner (4). All annexins contain a putative PKC binding site, but only annexin V has been identified as an inhibitor of this pathway (5).

Intracellular cell adhesion molecule-1 (CD54 or ICAM-1) is a cell surface glycoprotein that belongs to the immunoglobulin superfamily (IgSF) of adhesion molecules. CD54 is expressed at low levels in diverse cell types, and is induced by cytokines (TNF-alpha, interleukin-1) and bacterial lipopolysaccharides (6). Apical localization on endothelial cells (or basolateral localization on epithelial cells) is a prerequisite for leukocyte trafficking through the endothelial (or epithelial) barrier (6).

The CD9 antigen belongs to the tetraspanin family of cell surface glycoproteins. Tetraspanins interact with a variety of cell surface proteins and intracellular signaling molecules in specialized tetraspanin-enriched microdomains (TEMs), where they mediate a range of processes including adhesion, motility, membrane organization, and signal transduction (7). Additional research identified CD9 as an abundant component of exosomes, and may play a role in the fusion of these secreted membrane vesicles with recipient cells (8). GM130 is required for membrane fusion events that mediate ribbon formation during Golgi assembly (9). The Golgi apparatus functions in the modification, organization, and transport of proteins and membrane targeted to other parts of the cell, such as the plasma membrane, lysosomes, and endosomes. This regulated transport is important for appropriate protein localization, secretion, and signal transduction (reviewed in 10).

Epithelial cell adhesion and activation molecule (EpCAM/CD326) is a transmembrane glycoprotein that mediates calcium-independent, homophilic adhesions on the basolateral surface of most epithelial cells (11). One of the first tumor-associated antigens discovered, EpCAM has long been a marker of epithelial and tumor tissue. Research studies have shown that EpCAM is highly expressed in cancer cells and can be used as a biomarker for the detection of tumor-derived exosomes (reviewed in 1, 12, 13).
Background

References


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