Technical Data Sheet

Purified Rat Anti-Mouse Flk-1

Product Information

- **Material Number:** 550549
- **Alternate Name:** CD309; Fetal liver kinase 1; Kdr; VEGF Receptor-2; VEGFR-2; AVAS12;
- **Size:** 1 mL
- **Concentration:** 31.25 µg/ml
- **Clone:** Avas 12α1
- **Immunogen:** Mouse Flk-1 Recombinant Protein
- **Isotype:** Rat (WI) IgG2a, κ
- **Reactivity:** Mouse
- **Storage Buffer:** Aqueous buffered solution containing BSA, goat serum, and ≤0.09% sodium azide.

Description

The Avas 12α1 monoclonal antibody specifically binds to fetal liver kinase 1 (Flk-1) which is also known as CD309. Flk-1 is a receptor protein tyrosine kinase which is closely related to CD117 (c-kit) and CD140α (PDGF Receptor α chain) of the immunoglobulin superfamily. Flk-1, also known as VEGF Receptor-2 (VEGF-R2 or VEGFR2), is a receptor for vascular endothelial growth factor (VEGF). It is expressed, at the mRNA and protein levels, on distinct sets of mesoderm during gastrulation and on endothelial cells in embryonic and adult tissues. *In vivo* and *in vitro* studies indicate that Flk-1 is required for the embryonic development of vascular endothelial and hematopoietic cells.

Preparation and Storage

Store undiluted at 4°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Application Notes

<table>
<thead>
<tr>
<th>Application</th>
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<tbody>
<tr>
<td>Flow cytometry</td>
<td>Routinely Tested</td>
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<tr>
<td>Immunohistochemistry-frozen</td>
<td>Tested During Development</td>
</tr>
<tr>
<td>Immunohistochemistry-formalin (antigen retrieval required)</td>
<td>Not Recommended</td>
</tr>
</tbody>
</table>

Recommended Assay Procedure:

**Immunohistochemistry:** The Avas 12α1 antibody specific for mouse Flk-1 is recommended to test for immunohistochemical staining of acetone-fixed frozen sections. Tissues tested were mouse spleen, thymus and gastrointestinal tract. The antibody stains endothelial cells. The isotype control recommended for use with this antibody is Purified Rat IgG2a κ Isotype Control (Cat. No. 559073). For optimal indirect immunohistochemical staining, the Avas 12α1 antibody should be titrated (1:10 to 1:50 dilution) and visualized via a three-step staining procedure in combination with Biotin Goat Anti-Rat Ig (Cat. No. 559286), Streptavidin-HRP (Cat. No. 550946), and the DAB detection system (Cat. No. 550880). Endothelial cells expressing Flk-1 can be identified by the brown labeling of their cell membranes. Amplification 20X.

**Immunohistochemical staining of mouse Flk-1.** Frozen sections of normal mouse spleen were reacted with Purified Rat Anti-Mouse Flk-1 (Cat. No. 550549), then visualized with Biotin Goat Anti-Rat Ig (Cat. No. 559286), Streptavidin-HRP (Cat. No. 550946), and the DAB detection system (Cat. No. 550880). Endothelial cells expressing Flk-1 can be identified by the brown labeling of their cell membranes. Amplification 20X.

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### Suggested Companion Products

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Name</th>
<th>Size</th>
<th>Clone</th>
</tr>
</thead>
<tbody>
<tr>
<td>559073</td>
<td>Purified Rat IgG2a x Isotype Control</td>
<td>0.25 mg</td>
<td>R35-95</td>
</tr>
<tr>
<td>550946</td>
<td>Streptavidin HRP</td>
<td>50 mL</td>
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<tr>
<td>559286</td>
<td>Biotin Goat Anti-Rat Ig</td>
<td>0.5 mg</td>
<td>Polyclonal</td>
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<tr>
<td>550880</td>
<td>DAB Substrate Kit</td>
<td>500 Tests</td>
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<tr>
<td>551013</td>
<td>Anti-Rat Ig HRP Detection Kit</td>
<td>200 Tests</td>
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<tr>
<td>559148</td>
<td>Antibody Diluent for IHC</td>
<td>125 mL</td>
<td>(none)</td>
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### Product Notices
1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
5. Sodium azide is a reversible inhibitor of oxidative metabolism; therefore, antibody preparations containing this preservative agent must not be used in cell cultures nor injected into animals. Sodium azide may be removed by washing stained cells or plate-bound antibody or dialyzing soluble antibody in sodium azide-free buffer. Since endotoxin may also affect the results of functional studies, we recommend the NA/LE (No Azide/Low Endotoxin) antibody format, if available, for in vitro and in vivo use.

### References
Quinn TP, Peters KG, De Vries C, Ferrara N, Williams LT. Fetal liver kinase 1 is a receptor for vascular endothelial growth factor and is selectively expressed in vascular endothelium. Proc Natl Acad Sci U S A. 1993; 90(16):7533-7537. (Biology)