

FOLR1 Protein, Human, Recombinant (hFc & Avi), Biotinylated

General Information

Synonyms: FOLR;Folate Binding Protein;folate receptor 1 (adult);FBP

Protein Construction: A DNA sequence encoding the Human FOLR1 (NP_057937.1)(Met1-Met233) was expressed with a c-terminal AVI tagged Fc region of human IgG1 at the C-terminus (Fc-AVI). The expressed protein was biotinylated in vivo by the Biotin-Protein ligase (BirA enzyme) which is co-expressed. Predicted N terminal: Arg 25

Species: Human

Expression Host: HEK293 Cells

Accession: NP_057937.1

Molecular Weight: 53.11 kDa (predicted); 61.6 kDa (reducing conditions)

QC Testing

Biological Activity: 1.Immobilized Folic acid-BSA conjugate at 5 µg/mL (100 µL/well) can bind Recombinant Human FOLR1 Protein (Fc & Avi Tag), Biotinylated (Cat#TMPY-06928), the EC50 is 29.5-88.3 ng/mL (QC tested).
2.Immobilized Recombinant Human FOLR1 Protein (Fc & Avi Tag), Biotinylated (Cat#TMPY-06928) at 1 µg/mL (100 µL/well) on Streptavidin precoated (5 µg/mL, 100 µL/well) can bind Anti-FOLR1(Luveltamab biosimilar), the EC50 is 3.0-9.5 ng/mL (QC tested).
3.Immobilized Anti-FOLR1(Luveltamab biosimilar) at 1 µg/mL (100 µL/well) can bind Recombinant Human FOLR1 Protein (Fc & Avi Tag), Biotinylated (Cat#TMPY-06928), the EC50 is 3-10 ng/mL (Routinely tested).

Purity: ≥ 90 % as determined by SDS-PAGE. ≥ 90 % as determined by SEC-HPLC.

Endotoxin: < 1.0 EU/µg of the protein as determined by the LAL method.

Formulation: Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

The protein encoded by FOLR1 gene is a member of the folate receptor family. Members of this gene family bind folic acid and its reduced derivatives, and transport 5-methyltetrahydrofolate into cells. This gene product is a secreted protein that either anchors to membranes via a glycosyl-phosphatidylinositol linkage or exists in a soluble form. Mutations in this gene have been associated with neurodegeneration due to cerebral folate transport deficiency. Due to the presence of two promoters, multiple transcription start sites, and alternative splicing, multiple transcript variants encoding the same protein have been found for this gene. Folate receptor α (FR α) is the most important subunit of Folate receptor and the alpha isoform has been shown to be selectively overexpressed in cancer types like breast and ovarian cancer compared to normal breast and ovarian epithelial cells. It was determined that Folate receptor α exhibits a limited expression on the apical surfaces of the epithelial cells of normal lung, breast, thyroid, parathyroid, and kidney tissues. For their uptake of folate, normal cells rely almost exclusively on the reduced folate carrier, whereas many carcinomas and myeloid leukemia cells overexpress a high-affinity FR on their surfaces, perhaps reflecting their increased need for folate to support rapid cell division. Cancer Immunotherapy Immune Checkpoint Immunotherapy Targeted Therapy

Reference

Senol S, Ceyran AB, Aydin A, et al. Folate receptor α expression and significance in endometrioid endometrium carcinoma and endometrial hyperplasia. International Journal of Clinical and Experimental Pathology. 2015;8(5): 5633-5641.

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