APB810Hu03 100μg
Active Vitamin D Binding Protein (DBP)
Organism Species: *Homo sapiens* (Human)
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Prokaryotic expression.
Host: *E. coli*
Residues: Glu395~Leu474
Tags: N-terminal His and GST Tag
Purity: >90%
Endotoxin Level: <1.0EU per 1μg (determined by the LAL method).
Buffer Formulation: PBS, pH7.4, containing 0.01% Sarcosyl, 5%Trehalose .
Original Concentration: 200μg/mL
Applications: Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
Predicted isoelectric point: 6.1
Predicted Molecular Mass: 41.9kDa
Accurate Molecular Mass: 44kDa as determined by SDS-PAGE reducing conditions.

[USAGE]

Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

[STORAGE AND STABILITY]

Storage: Avoid repeated freeze/thaw cycles.
Store at 2-8ºC for one month.
Aliquot and store at -80ºC for 12 months.

Stability Test: The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37ºC for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

[SEQUENCE]

ELSSFI
DKGQELCADY SENTFTEYKK KLAERLKAKL PDATPKELAK LVNKRSDFAS
NCCSINSPPL YCDSEIDAEL KNIL

[ACTIVITY]

Vitamin D Binding Protein (DBP, encoded by the GC gene, also termed Gc-globulin, product B810Hu) is a ~58 kDa multifunctional serum glycoprotein belonging to the albumin gene family. Synthesized primarily in the liver, it is encoded on human chromosome 4q11–q13 and comprises 458 amino acids with three structural domains. DBP is the principal carrier of vitamin D3 (VD3) and its metabolites (e.g., calcidiol, calcitriol), solubilizing these lipophilic molecules and mediating their systemic transport to target tissues. Beyond vitamin D transport, it sequesters extracellular G-actin and modulates macrophage activation and immune responses. DBP specifically binds the VD3 moiety of VD3-BSA conjugate with high affinity via its N-terminal sterol-binding pocket. Thus a functional ELISA assay was conducted to detect the interaction of recombinant human DBP and VD3-BSA. Briefly, DBP was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μl were then transferred to VD3-BSA-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-DBP pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37℃, wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37 ℃. Finally, add 50 μL stop solution to the wells and read at 450/630nm immediately. The binding activity of recombinant human DBP and

VD3-BSA was shown in Figure 1, the EC50 for this effect is 0.711 μg/mL.

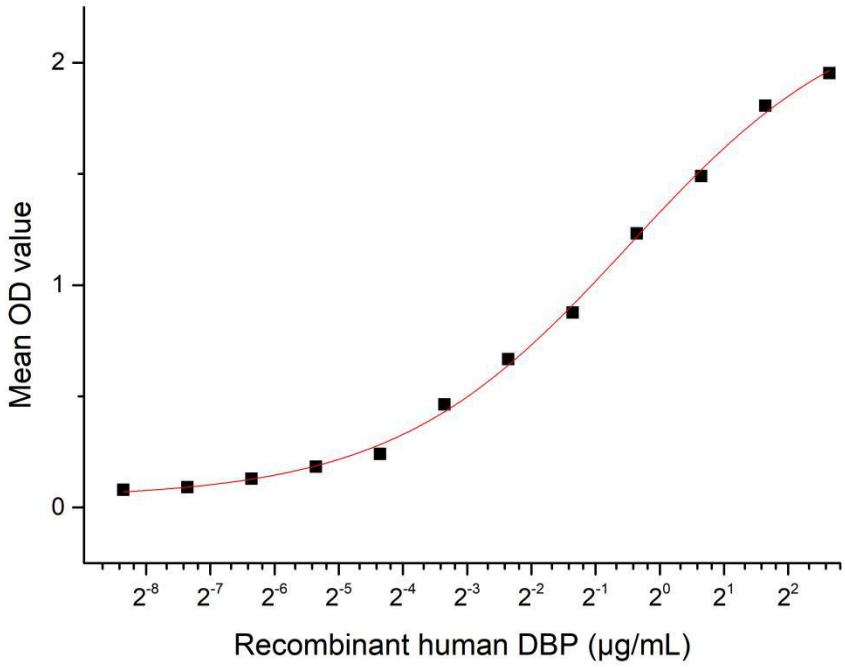

Figure 1. The binding activity of recombinant human DBP and VD3-BSA

[IDENTIFICATION]

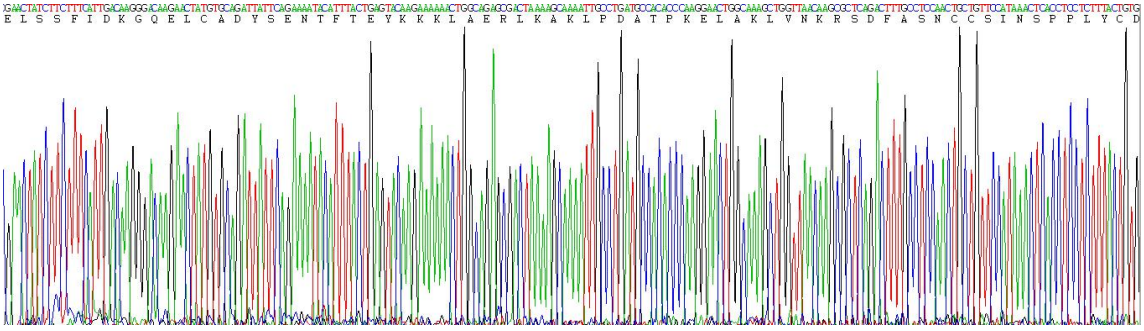

Figure 2. Gene Sequencing (extract)

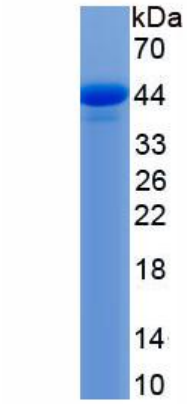

Figure 3. SDS-PAGE

Sample: Active recombinant DBP, Human

[IMPORTANT NOTE]

The kit is designed for research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.