APB112Mu61 100μg
Active Complement Component 1, R Subcomponent (C1r)
Organism Species: *Mus musculus (Mouse)*
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Eukaryotic expression.
Host: 293F cell
Residues: Met1~Asn707
Tags: N-terminal His-tag
Purity: >90%
Endotoxin Level: <1.0EU per 1μg (determined by the LAL method).
Buffer Formulation: PBS, pH7.4, containing 5% Trehalose .
Original Concentration: 200μg/mL
Applications: Cell culture; Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
Predicted isoelectric point: 5.4
Predicted Molecular Mass: 81.7kDa
Accurate Molecular Mass: 33&18kDa as determined by SDS-PAGE reducing conditions.
Phenomenon explanation:
The possible reasons that the actual band size differs from the predicted are as follows:
1. Splice variants: Alternative splicing may create different sized proteins from the same gene.
2. Relative charge: The composition of amino acids may affects the charge of the protein.
3. Post-translational modification: Phosphorylation, glycosylation, methylation etc.
4. Post-translation cleavage: Many proteins are synthesized as pro-proteins, and then cleaved to give the active form.
5. Polymerization of the target protein: Dimerization, multimerization etc.

[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 2-8°C for one month.
Aliquot and store at -80°C 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 37°C 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]

MWLFALLVTLFYGVEGSIYLPQKLYGEVTSPLYPKPYPSDLETTTVITVPMGYRVKLVFWQFDVEPS
EGCFYDYVKISADKQTLGRFCGQLDSPLGNPPGSKEFMSQGNKMLLTFHTDFSNEENGTIMFYKGFL
AYYQAVDLDECASQPNSVEEGLQPRCQHLCHNYVGGYFCSCHPGYELQKDGQSCQAECSSELYTEPS
GYVSSLEYPQPYPPDLRCNYSIRVERGLTVHLKFLDPFEIDDHQQVHCPYDQLQIYANGKNLGEFCG
KQRPPDLDTSSNAVDLLFFTDESGDSRGWKLHYTTETIKCPQPKALDEFTIIQDPQPQYQFRDYFIV
TCKQGYQLMEGNQALLSFTAVCQNDGTWHRAMPRCKIKNCGQPQSLSNGDFRYITTKGVTTYEASIQ
YHCHEPYYKMLTRAGSSESMRGIYTCTAQGIWKNEEEGEKMPRCLPVCGKPVNPVTQKERIIRGQPA
RPGNFPWQAFTTTHGRGGGALLGDRWILTAAHTIYPKHHNKENDNANPKMLVFLGHTNVEQIKKLGH
HPVRRVIIHPDYRQDEPNNFEGDIALLELENSVTLGPELLPICLPDNETFYGQQGLMGYVSGFGITED
KLAFDLRFVRLPVADSEACQRWLQTKKDTSPFSQNMFCSGDPAVQQDACQGDSGGVFAVRDRNRDIW
VATGIVSWGIGCGEGYGFYTKVLNYVDWIKKEMGDEN

[ACTIVITY]

The classical complement pathway plays a major role in innate immunity against infection. This pathway is triggered by C1, a multimolecular complex composed of the recognition protein C1q and two serine proteases, C1r and C1s. Following the C1q recognition, C1r is autoactivated, and in turn activates C1s, which cleaves C4 and C2, the C1 substrates. Both C1r and C1s activation involve cleavage of a specific Arg-Ile bond, converting single-chain proenzymes into active proteases of disulfide bond-linked chains (A and B). The full-length (amino acid residues 1-707)

of mouse C1r was expressed which activity was measured by its ability to cleaves a thioester substrate Z-Lys-SBzl•HCl. The reaction was performed in 50 mM Tris, pH 7.5 (Assay Buffer), initiated by addition 50 μL of various concentrations of C1r (diluted by Assay Buffer) to 50 μl substrate mixture of 0.2mM Z-Lys-SBzl•HCl and 0.2 mM DTNB. The final well serves as a negative control with no C1r, replaced with 50 μl assay buffer. Then read in kinetic mode for 5 minutes at an absorbance of 405 nm. The specific activity of recombinant mouse C1r is > 500 pmol/min/μg.

$$\text{Specific Activity (pmol/min/ug)} = \frac{\text{Adjusted } V_{max}^{*} \text{ (OD/min) x well volume (L) x } 10^{12} \text{ pmol/mol}}{\text{ext. coeff}^{**} \text{ (M}^{-1}\text{cm}^{-1}\text{) x path corr.}^{***} \text{ (cm) x amount of enzyme (ug)}}$$

*Adjusted for Substrate Blank
**Using the extinction coefficient 13260 $M^{-1}cm^{-1}$
***Using the path correction 0.320 cm

[IDENTIFICATION]

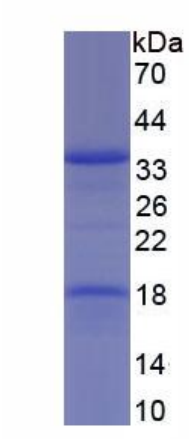

Figure 1. SDS-PAGE

Sample: Active recombinant C1r, Mouse

[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.