

APF591Ra01 100µg

Active Mitofusin 2 (MFN2)

Organism Species: *Rattus norvegicus* (Rat)

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: Glu648~Arg757

Tags: N-terminal His-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: 8.7

Predicted Molecular Mass: 16.5kDa

Accurate Molecular Mass: 17kDa 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 2-8°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]

ERLTWTRAKERAFKRQFVEYASEKLQLIISYTGSNCSHQVQQLSGTFAHLCQQVDITRDNLEQEIAAMNKKVEALDSLQS
KAKLLRNKAGWLDSELNMFHQYLQPSR

[ACTIVITY]

Mitofusin 2 (MFN2) is a dynamin-like GTPase protein primarily located on the outer membrane of mitochondria. It is a master regulator of mitochondrial dynamics, mediating the fusion of mitochondria to maintain their shape, distribution, and functional health. This process is crucial for cellular energy metabolism, calcium signaling, and overall stress response. MFN2 is also uniquely present on the endoplasmic reticulum (ER), where it plays a pivotal role in forming physical tethers between the ER and mitochondria, establishing specialized domains known as Mitochondria-Associated Membranes (MAMs). These contact sites are essential for lipid transfer, apoptotic signaling, and coordinated calcium flux. MFN2 directly binds to VDAC1 on the mitochondrial surface to bridge the ER-mitochondrial interface, facilitating inter-organelle communication. To detect the activity of recombinant MFN2, a functional ELISA assay was performed to evaluate the interaction between recombinant rat MFN2 and recombinant human VDAC1. Briefly, biotin-linked MFN2 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100µl were then transferred to VDAC1-coated microtiter wells and incubated for 1h at 37 °C . Wells were washed with PBST 3 times and incubation with Streptavidin-HRP for 30min, then wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37 °C . Finally, add 50µl stop solution to the wells and read at 450nm immediately. The binding activity of MFN2 and VDAC1 was shown in

Figure 1, the EC50 for this effect is 0.12µg/mL.

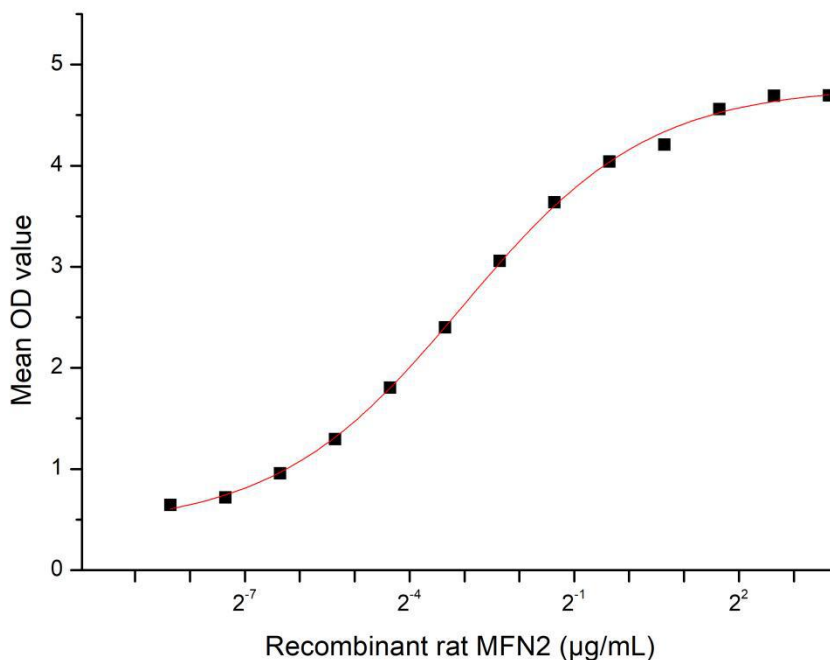


Figure 1. The binding activity of recombinant rat MFN2 and recombinant human VDAC1

[IDENTIFICATION]



Figure 2. SDS-PAGE

Sample: Active recombinant MFN2, Rat

[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.