

OEP24 - Outer envelope pore protein 24, chloroplastes

Product specification

Acronym: OEP24

Class: Porin

Origin: Plant

Molecular weight: 24 kDa

Application: Screening & display technologies.

Purity: >60%

Activity: Proven

Length: Full Length

TMD: β -barrel

Biological function: Porine activity

Product description

High-conductance voltage-dependent solute channel with a slight selectivity for cations transporting triose phosphates, dicarboxylic acids, ATP, inorganic phosphate (Pi), sugars, and positively or negatively charged amino acids.

Protein Source: OEP24 wild type protein

Fig.1: AA sequence of OEP24 protein

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10      20      30      40      50
MKWALKGKYD LDHNSSGAAT VAFNAGDVKL RASITDATEK NSPSLTGLVL
60      70      80      90     100
AVI KPGSLV DYNVKKKIR IQI NNIVVA I KPIIAYII SKLGNRI I ID
110     120     130     140     150
GTLVNDPSIK VSANYAVESG NCKLKYSYNH KGLTTIEPTY DVAKNSMDF
160     170     180     190     200
VSEKVVYGDDS LKASYQTSSK VLGLEWTRNS KQTGCFKVA EVNLAEEKI
210
PKLSVESTLI FEN
  
```

Affinity Tag: Histidine tag fused to the N-terminal end of the protein.

Production conditions: OEP24 is expressed in a cell-free expression system in the presence of lipid vesicles. 100 μ g can be produced and qualified in about 1 week.

Quality analysis

Purity: Typically > 60% as determined by SDS-Page and Coomassie Blue staining.

Purification procedure: As standard, OEP24 proteoliposomes are purified on a sucrose gradient. Further purification steps can be added if required.



Fig.2: Proteoliposome OEP24 after purification (Western blot identification).

Assessment of functionality

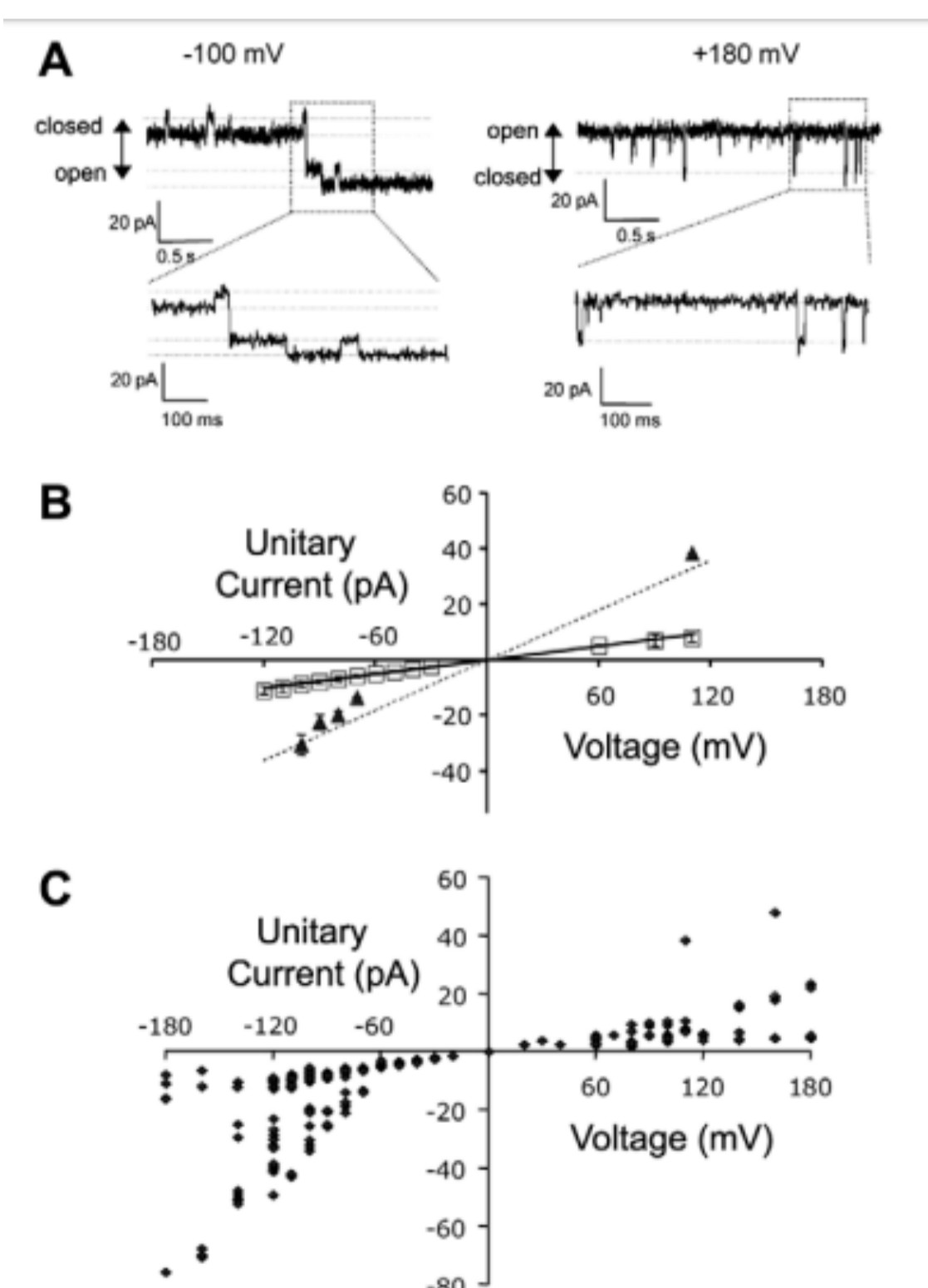
Cell-free expression systems provide a real alternative for membrane protein expression, enabling the study of structure and function of membrane proteins.

Methods: Patch clamp

Results:

Multiple conductance levels were observed (Fig. 3A and C). The most frequently detected conductances were 83 and 300 pS (Fig. 3B). OEP24 proteoliposomes are fully active in transport of solutes and present multiple conductance levels (Fig. 3).

Fig.3: Electrophysiological characterization of OEP24. Inside-out patch-clamp experiments were performed on giant liposomes incorporating OEP24. (A) Representative recordings of single channels at 2 voltages and 2 different time scales. (B) Unitary current vs. voltage relationship of single channels from one patch (each data point represents the average of at least 3 measurements). Linear regression of the lower current values (squares) yielded an 83 pS conductance (solid line). Larger currents (triangles) were too dispersed for fitting but could correspond to a previously reported 300 pS conductance (dashed line). (C) Unitary currents observed at different voltages in all tested patches.



Formulation

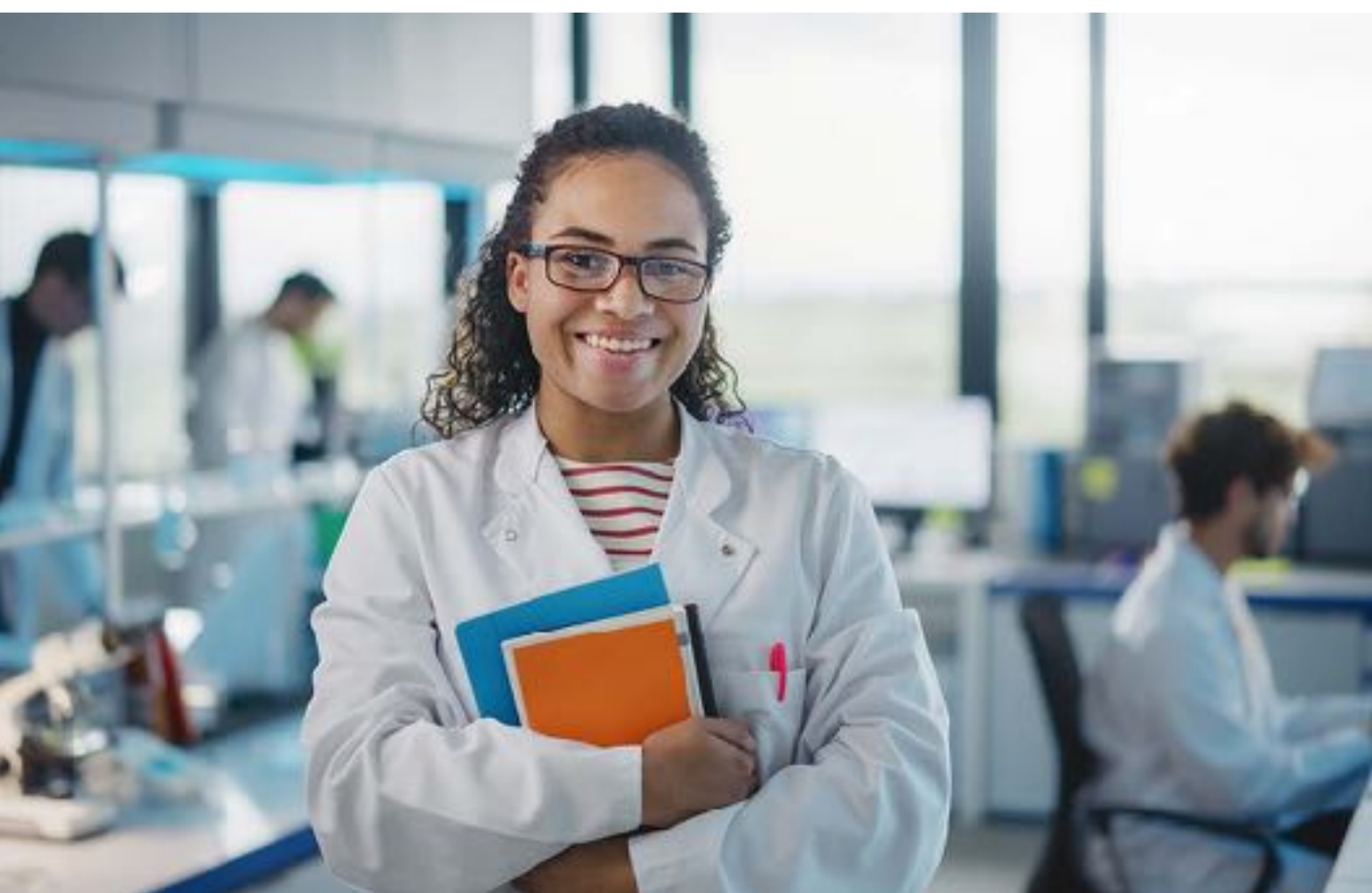
Buffer: Available in Tris 50mM, pH 7.5. Other buffers or customized formulation can be provided upon request.

Customized Hydrophobic matrix: Customized formulation with specific lipids like PEGylated or biotinylated lipids can be used upon request, as well as targeting molecules.

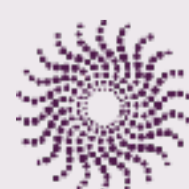
Storage/Stability: Store at +4°C for up to one week or several months at -80°C. Aliquot for storage. Do not freeze-thaw after aliquoting.

Use restrictions: For life science research use only.

Available sizes: 10µg, 20µg, 100 µg, 200 µg, 500 µg, bulk



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any additional information?
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