CPPP-2

Cell-penetrating and cytoprotective pentapeptide

Cell penetrating peptide for transduction of peptides, proteins and nucleotides into live cells and for cytoprotection

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Amount</th>
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<tbody>
<tr>
<td>CPP-P06S</td>
<td>1.2 mg</td>
</tr>
<tr>
<td>CPP-P06L</td>
<td>6 mg</td>
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</tbody>
</table>

For in vitro use only!

Shipping: shipped on blue ice

Storage Conditions: store at -20 °C

Shelf Life: 12 months after date of delivery

Molecular Weight: 605 Da confirmed by MALDI-MS.

Purity: > 95 % (HPLC)

Form: Synthetic peptide, water soluble powder, contains CF3COO⁻ (trifluoro acetate) as counter ion.

Description:
CPPP-2 is one of the cell penetrating pentapeptides (CPPPs) designed from Bax inhibiting peptides (BIPs). It is used for internalization of peptides and proteins (GFP) into different types of live cells. CPPP-2 uses yet unidentified mechanisms for cell penetration including mechanisms not requiring interaction with proteoglycans. The transport of cargo requires in some cases only formation of a non-covalent complex however, for most applications a conjugate with the cargo has to be formed and an excess of free peptide is added to improve internalization. The peptide shows some cytoprotective activity. It suppresses Bax-mediated apoptosis and is therefore recommended to protect cells from cytotoxic stress. CPPPs may be utilized for non-toxic drug delivery. The influence of CPPP-2 on cell viability is tested on different cell lines (including HeLa, Jurkat, Swiss 3T3, NIH 3T3, NB-4 and COS-7). For most of these cells it has no toxic effect up to a concentration of 20 µg/ml serum-free transduction medium. In many cell lines it even improves the viability. Thus, it can be widely used for internalization of proteins. But, it requires a molar ratio of about 1:100.

Sequence:
KLPVM

Positive Charges:
Peptide provides 2 positive charges for complex formation, 2 trifluoroacetate residues are present resulting in an apparent MW of about 0.9 kDa.

Stock solution:
Dissolve 1.2 mg (1 vial) in 1 ml sterile and oxygen-free water according to the general manual. Use the solution immediately or aliquot and store at -20 °C. Avoid freeze / thaw cycles. Please note that the peptide may form S-oxide (Met) when stored in solution.

Usage:
Perform calculation, complex formation and cargo transduction according to the detailed protocols given in the general manual.

Jena Bioscience Publications using CPPP-2:
Formation of non-covalent complexes with different cargos, transport into different cell lines, uptake efficiencies and cytotoxicity’s are described in four publications:
peptides and cell type for uptake of non-covalent complexes into live cells. Pharmaceuticals \textbf{6}: 184.


\textbf{Activity:}

1 µl of stock solution is able to form a non-covalent complex with 1 µg of a protein of MW of 100 kDa. For different MWs adjust amount of stock solution accordingly.

\textbf{Selected References:}


- Mussbach et al. (2011) Internalization of nucleoside phosphates into live cells by complex formation with different CPPs and JBS-Nucleoducin. \textit{Methods in Molecular Biology} \textbf{683}:375.


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