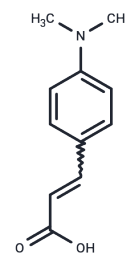


4-(Dimethylamino)cinnamic acid

Chemical Properties

CAS No. :	1552-96-1
Formula:	C ₁₁ H ₁₃ NO ₂
Molecular Weight:	191.23
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



Biological Description

Description	4-(Dimethylamino)cinnamic acid (DMACA) could be as charge transfer (ICT) probe.
In vitro	Cinnamic acid (CA) derivatives are known to possess broad therapeutic applications including anti-tumor activity. The present study was designed to determine the underlying mechanism and thermodynamic parameters for the binding of two CA based intramolecular charge transfer (ICT) fluorescent probes, namely, 4-(dimethylamino) cinnamic acid (DMACA) and trans-ethyl p-(dimethylamino) cinnamate (EDAC), with albumins by fluorescence spectroscopy. METHODS AND RESULTS: Stern-Volmer analysis of the tryptophan fluorescence quenching data in presence of the added ligand reveals fluorescence quenching constant ($\kappa(q)$), Stern-Volmer constant ($K(SV)$) and also the ligand-protein association constant ($K(a)$). The thermodynamic parameters like enthalpy (ΔH) and entropy (ΔS) change corresponding to the ligand binding process were also estimated. The results show that the ligands bind into the sub-domain IIA of the proteins in 1:1 stoichiometry with an apparent binding constant value in the range of $10(4) \text{ dm}(3) \text{ mol}(-1)$. CONCLUSIONS: In both the cases, the spontaneous ligand binding to the proteins occur through entropy driven mechanism, although the interaction of DMACA is relatively stronger in comparison with EDAC. The temperature dependence of the binding constant indicates the induced change in protein secondary structure.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	5.2293 mL	26.1465 mL	52.2931 mL
5 mM	1.0459 mL	5.2293 mL	10.4586 mL
10 mM	0.5229 mL	2.6147 mL	5.2293 mL
50 mM	0.1046 mL	0.5229 mL	1.0459 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Interaction of cinnamic acid derivatives with serum albumins: a fluorescence spectroscopic study. Spectrochim Acta A Mol Biomol Spectrosc. 2011 Mar;78(3):942-8.

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481