Labaditin and DPPC-Liposome Interaction: Circular Dichroism and Fluorescence Spectroscopy Studies.

Barbosa, S.C.[1], Cilli, E.M.[2], Fuzo, C.A.[1], Degrève, L.[1], Dias, L.G.[1], Ciancaglini, P.[1]
[1]Depto. Química, FFCLRP-USP, Ribeirão Preto, SP, Brasil; [2] Depto. Bioquímica e Biotecnologia, IQ-UNESP, Araraquara, SP, Brasil.

Cyclic peptides isolated from the plants of *Euphorbiaceae* family have been largely researched due to their rigid conformation, which is considered significant for biologic activity. The peptide VWTVWGTIAG, Labaditin (Lo) and linear analogues (L_1), were synthesized by solid-phase peptide synthesis technique (Fmoc/tBu) to elucidate its action and interaction mechanism with the lipid. The conformational properties were investigated by Circular Dichroism (CD) and Fluorescence Spectroscopy techniques in 50 mM Tris.HCl, pH 7 and in the presence of DPPC-liposome. The CD spectra obtained for Lo and L_1 in aqueous media suggest a ß-structure. Using dynamic simulation of the peptides in aqueous solution, ramachandran representation, it was possible to confirm that both peptides present dihedral angles characteristic of a ß-structure. The interaction of peptide with DPPC-liposome induces a change of conformation. This effect is greater for the Lo peptide. It was confirmed by fluorescence spectroscopy that both peptides had interaction with the DPPC-liposome. This was proven by the decrease in the tryptophan (W) $?_{max}$ emission values, or, migration to a more apolar environment. Comparing the emission $?_{max}$ of the W for both peptides, it was observed that L_1 interacts less with the DPPC-liposome, therefore exhibiting a higher $?_{max}$ emission (Lo=344 and L_1=345nm) e Ksv (Lo=1,68 and L_1=1,98). Additionally, both peptides did not have hemolytic activity to justify studies to evaluate pharmacological activities. Supported by: FAPESP and CNPq.

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