STUDIES OF THE INTERACTION BETWEEN *Bauhinia bauhinioides* KALLIKREIN INHIBITOR AND *Staphylococcus aureus* BY FLUORESCENCE SPECTROSCOPY AND CIRCULAR DICHROISM.

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Bauhinia bauhinioides kallikrein inhibitor (BbKI) isolated from *Bauhinia bauhinioides* seeds inhibits *Staphylococcus aureus* and *Paracoccidioides brasilienses* proliferation. Aiming to investigate the interaction of BbKI with *Staphylococcus aureus* (ATCC 29213) we performed studies of circular dichroism (CD) and fluorescence spectroscopy. In this studies were monitored the conformational changes only of the inhibitor, since no signal of the *S. aureus* appear in spectroscopies. CD measurements were performed in the absence and in the presence of *S. aureus*, in 0.14 M NaCl, at 25ºC and 37ºC, for 30 min. Results showed no differences on CD spectra. Fluorescence studies were carried out with *S.aureus* in a log phase or exponential growth rate, at 25ºC and 37ºC. At 37ºC, there is a pronounced red-shift for the emission maximum (328 nm to 340 nm) together with an increase in fluorescence intensity, in contrast to the fluorescence obtained at 25ºC, comparable to the control of BbKI. These results suggest that interaction of BbKI and *S.aureus* occurs only at 37ºC, without modifications in the inhibitor secondary structure, although an exposition of tryptophan in BbKI structure was detected. The interaction of BbKI with *S.aureus* was also confirmed by confocal microscopy.