BINDING OF CHLORINATED TOXINS TO SELECTIVE PEPTIDES IN SOLUTION

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This study utilized FLDQV, a pentapeptide that binds selectively to PCBs and dioxins. In addition, glutamine has been substituted with glycine in order to clarify the role of the former in the binding process thus obtaining FLDGV pentapeptide. Both peptides have been labeled with AMC at the C-end. The peptides have been attached to emeraldine base through glutraldehyde as a linker. The stability and the composition of the designed chemosensors were studied in broad pH range. Fluorescence spectroscopy was employed to study the interaction of the free peptides as well as of those incorporated in the polymer matrix, with chlorinated toxins. Fluorescence quenching has been observed when toxins were introduced to the solution. The binding constants have been calculated using non-linear regression model. Computer simulations were used to elucidate the binding mechanism between the peptides and the toxins.