

Photocontrol of structure and properties in bioactive molecules

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The use of light to control the structure and activity of biomolecules and drugs has been increasingly relevant in the last years.^[1,2] Although this field is still in its infancy, the selectivity that may be achieved with photoactive compounds together with the high spatiotemporal resolution offered by light, turn these processes into promising tools for the clinical treatment of several diseases.

The exploration of diverse strategies to turn known compounds into photoactive drugs is a key aspect before the best candidates could enter clinical trials. In this sense, two main possibilities have been explored. The use of photoactive stapled peptides allows to control not only the activity but also the location of the target compounds in biological membranes (Figure 1a).^[3] Also, small molecules known to have biological activity (ciprofloxacin, Figure 1b) may be modified to allow the photocontrol of their properties. Thus, in this contribution we will report the design, synthesis and evaluation of new candidates for the photocontrol of different biological properties.

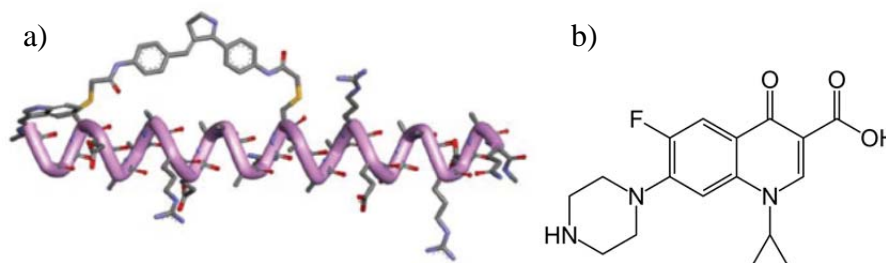


Figure 1. a) Peptide photocontrol through linkage to molecular switches. b) Ciprofloxacin, as a test compound for the photocontrol of antimicrobial properties.

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References:

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