Several molecules are well known to interact with nucleic acids by intercalation between pairs of bases. Some of them, like ellipticine derivatives, have antitumor activity, some other like, psoralen derivatives, have photosensitizing activity.

X-ray analysis of such molecules has been undertaken to increase the knowledge either, of the stacking possibilities between rings and bases or, of the precise geometry of photoproducts after irradiation. In this case, synthetic models were used (Ada-chain-Pse or Thy-chain-Pse).

The collected results allow to propose a possible mechanism of photocyclisation when nucleic acids are irradiated in presence of psoralen derivatives.