



O-H...O AND O-H...N HYDROGEN BONDS AS SUPRAMOLECULAR SYNTONS IN THE FORMATION OF CHIRAL ARCHITECTURES ON THIAZOLO[3,2-*a*]PYRIMIDINE 2-ARYLMETHYLIDENE DERIVATIVES FRAMEWORKS IN THE CRYSTALLINE PHASE



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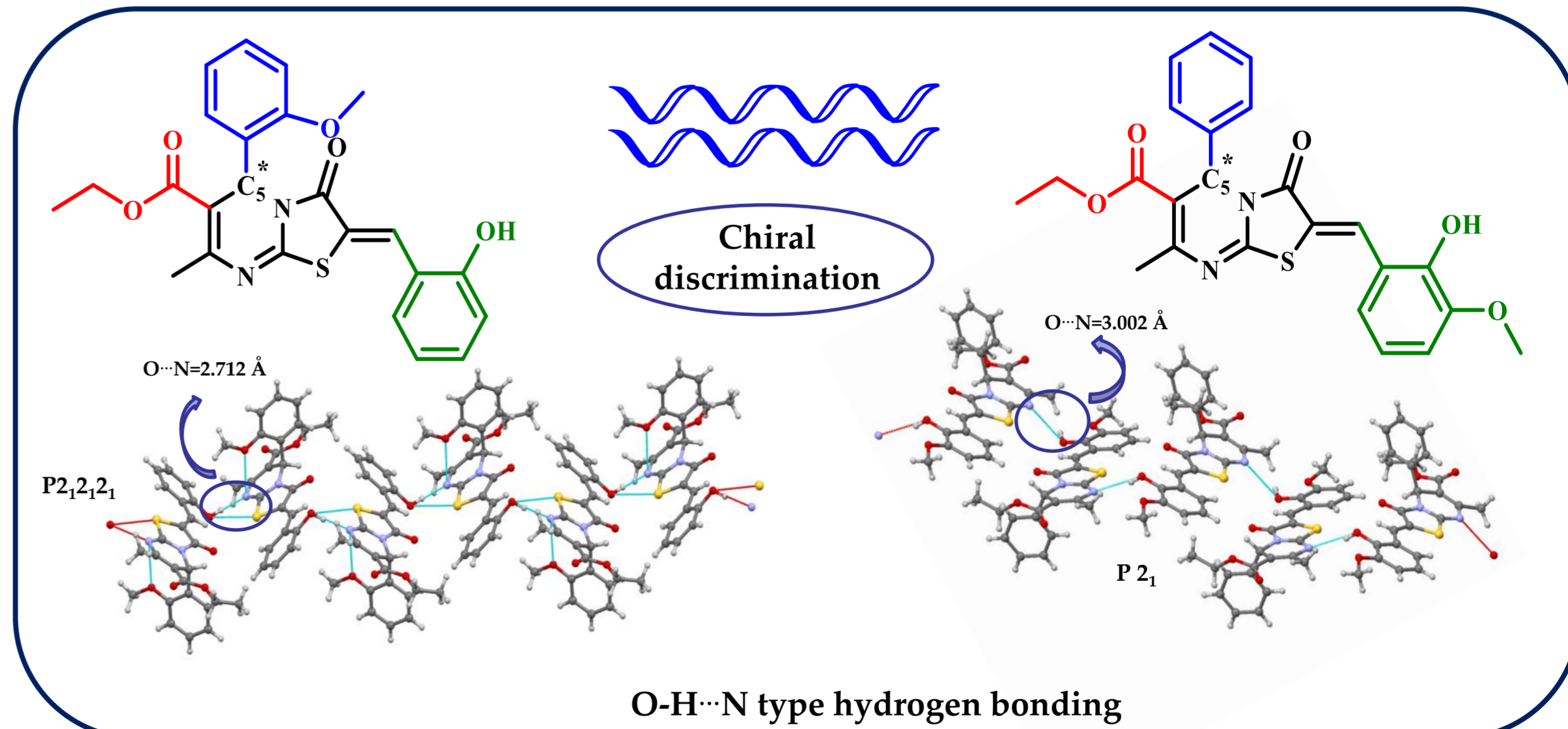
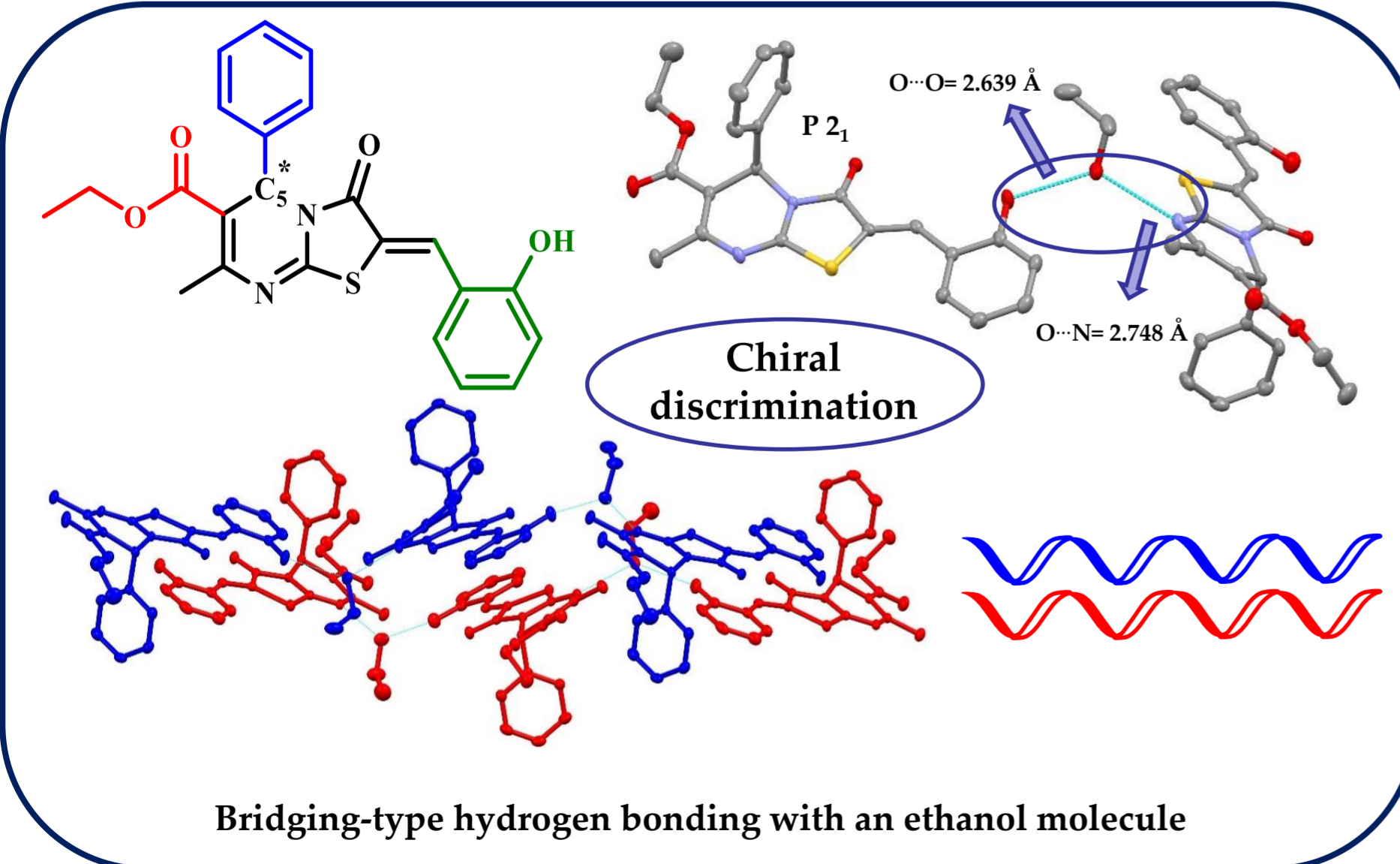
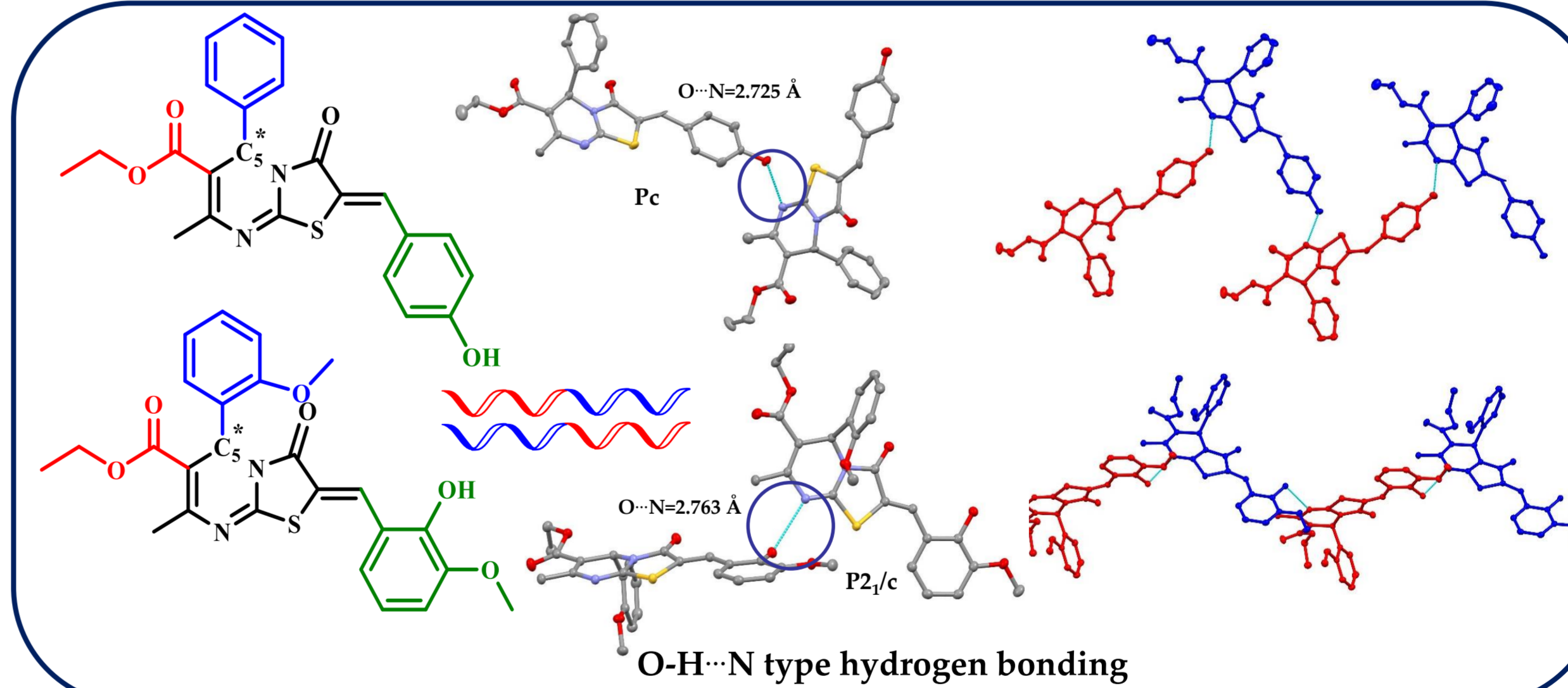
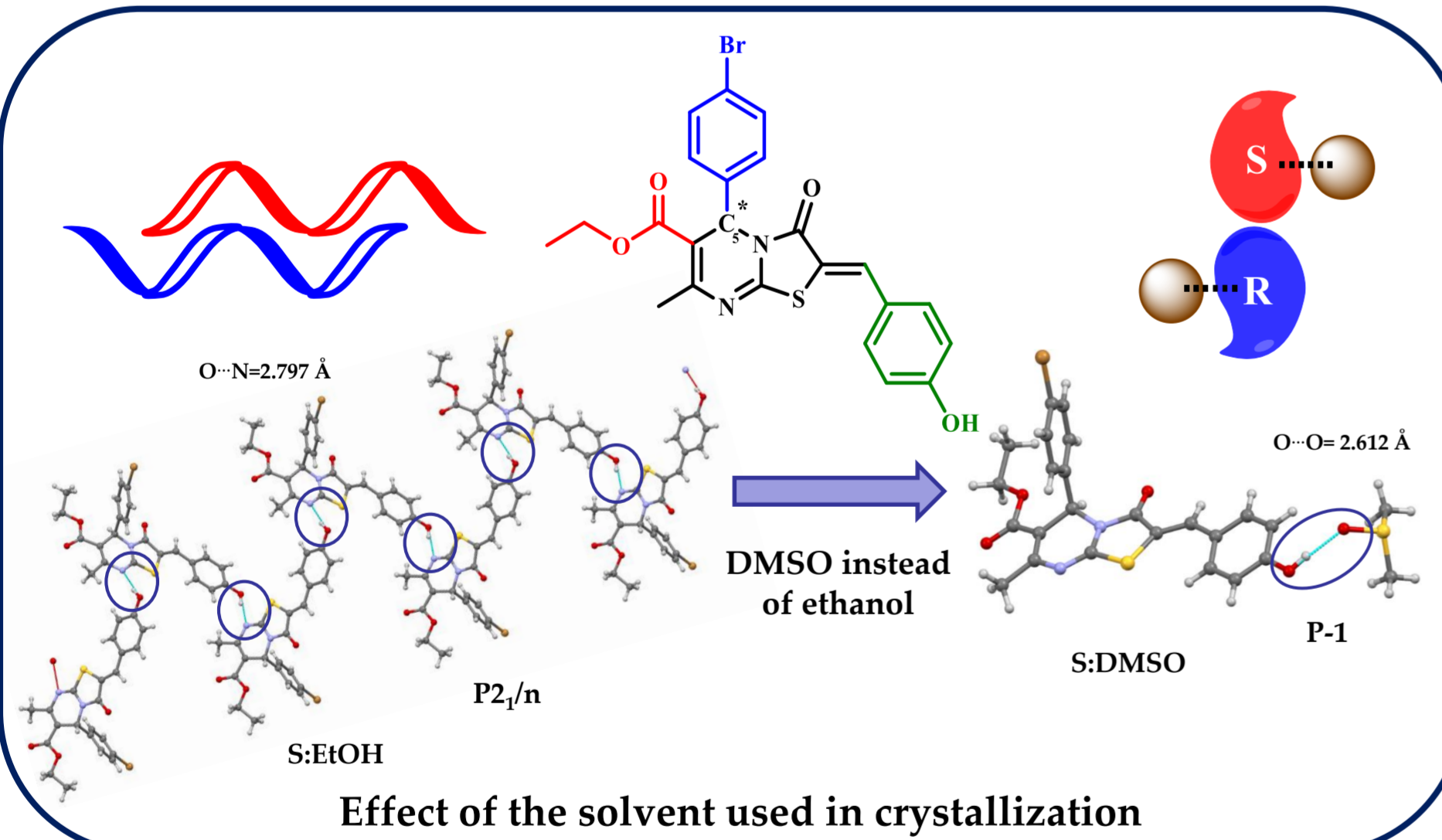
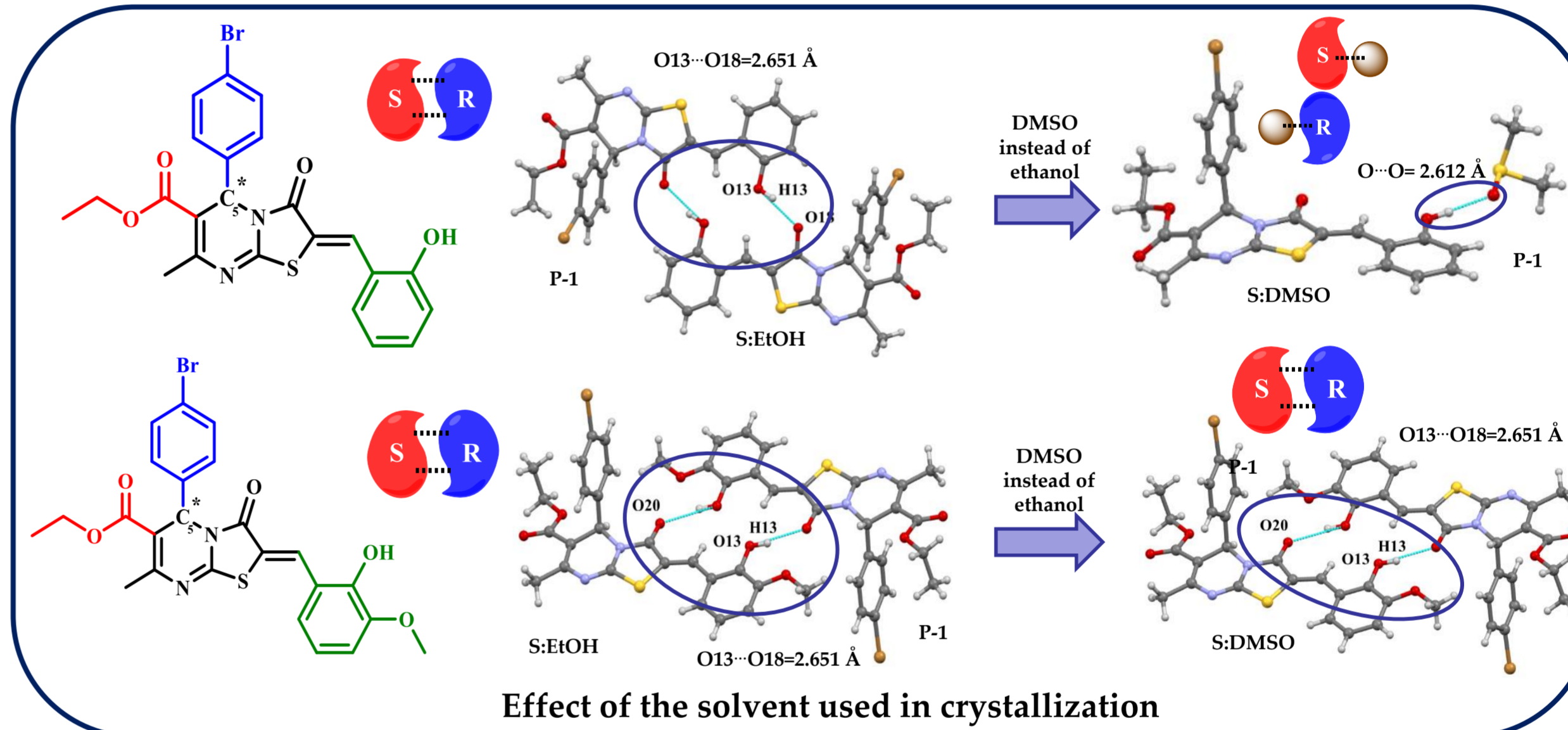
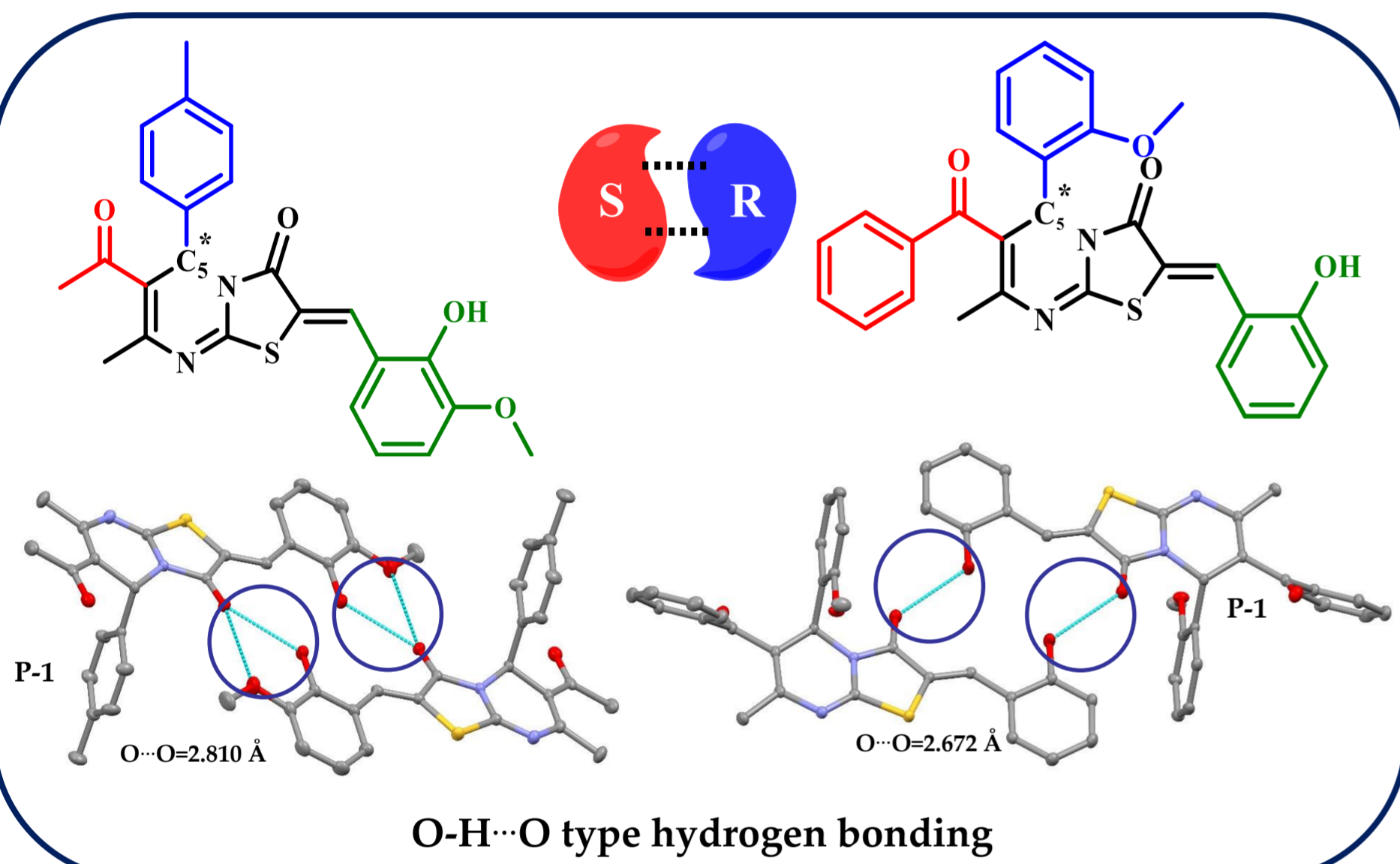
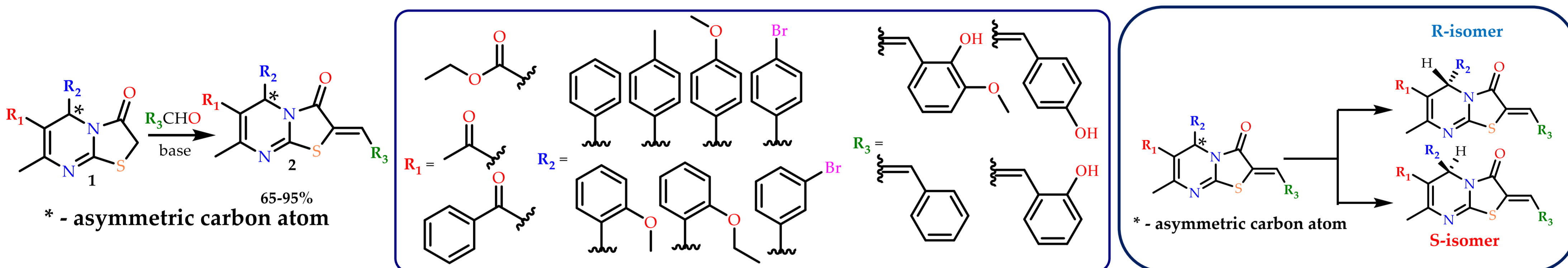
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PROBLEM STATEMENT

The synthesis of new antitumor drugs is a promising direction of modern science. Nowadays, some thiazolopyrimidine derivatives are already known to exhibit different antitumor activity. Since the biological activity of racemate and pure enantiomers of many biologically active compounds may greatly differ from each other, the question of their separation is very acute. The study of non-covalent interactions may be important for understanding the mechanism of drug action and can also be used in crystallization to separate racemic mixtures into pure enantiomers. Since a racemic mixture is formed during the synthesis of thiazolo[3,2-*a*]pyrimidine derivatives, the study of these derivatives in the crystalline phase is an essential problem.

GENERAL SCHEME FOR THE SYNTHESIS OF 2-ARYLMETHYLIDENE THIAZOLO[3,2-*a*]PYRIMIDINES



CONCLUSIONS

- A series of new 2-arylmethylidene thiazolo[3,2-*a*]pyrimidines was obtained. The structures of all compounds were confirmed by complex of physicochemical methods of analysis (SCXRD, ¹H and ¹³C NMR spectroscopy, mass spectrometry);
- The influence of solvents on the crystal packing of 2-arylmethylidene derivatives of thiazolo[3,2-*a*]pyrimidines was investigated. It was demonstrated that enantiomeric molecules of thiazolo[3,2-*a*]pyrimidines can be crystallized in racemic or chiral forms, and that hydrogen bonding can serve as a driving force for the generation of chiral supramolecular assemblies.

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