



A New Dual-Drug Pharmaceutical Co-Crystal: Synthesis and X-ray Diffraction Studies

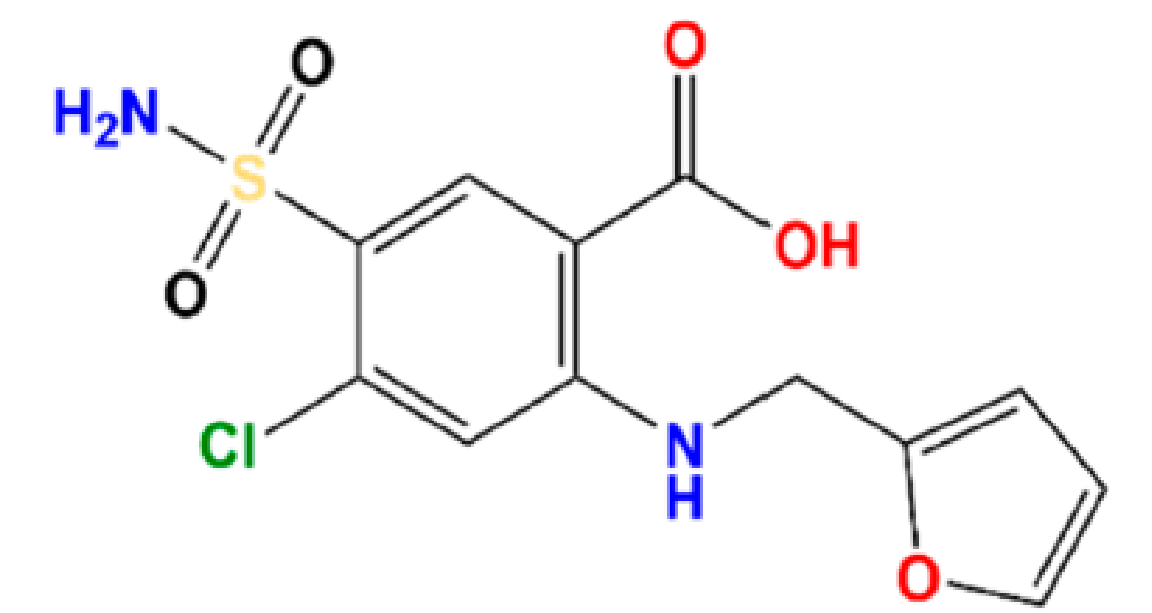
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Introduction

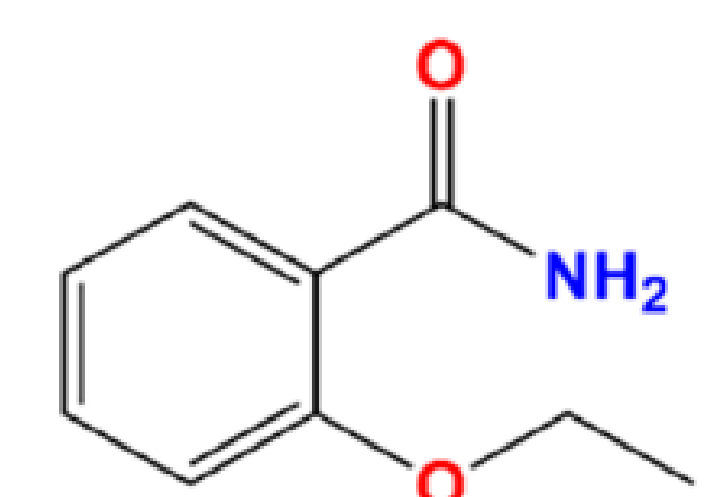
Co-crystals are solid forms constituted by more than one molecular component. We have obtained a pharmaceutical co-crystal resulting from furosemide and etheznamide drugs with the goal to enhance their physicochemical properties, which are directly connected to the knowledge of their internal arrangement. X-ray diffraction is a structural characterization technique which allows the study of ordered solids (crystals) at the atomic level, obtaining information of the macroscopic properties.

The aim of this work is to obtain a new furosemide-ethenzamide (FETZ) co-crystal and characterized it by X-ray diffraction techniques.



Furosemide, FUR

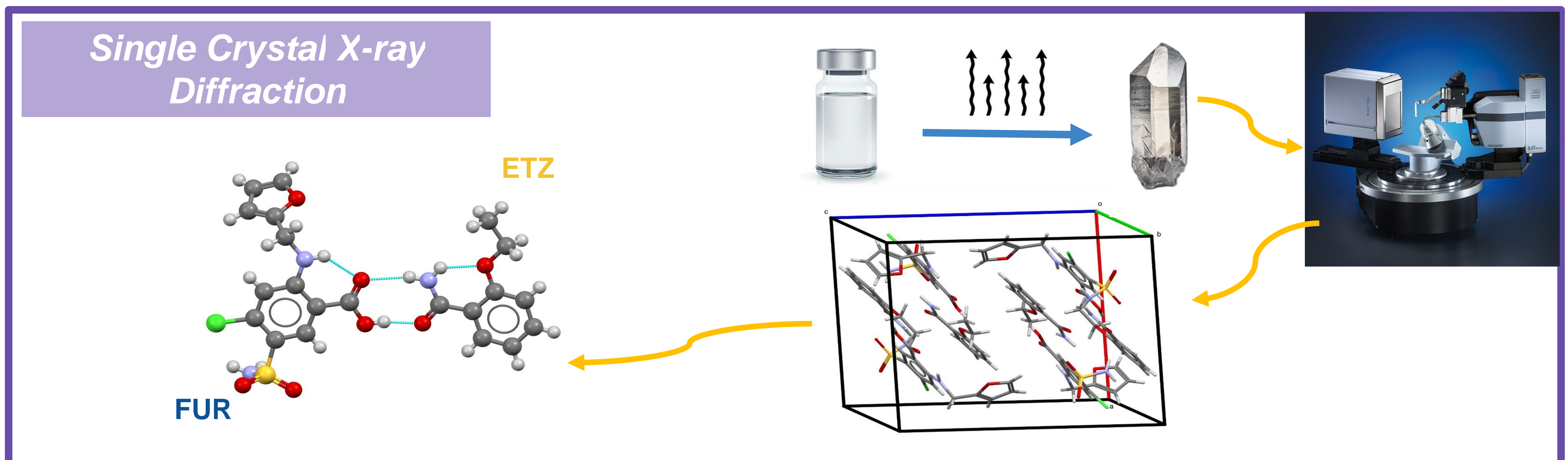
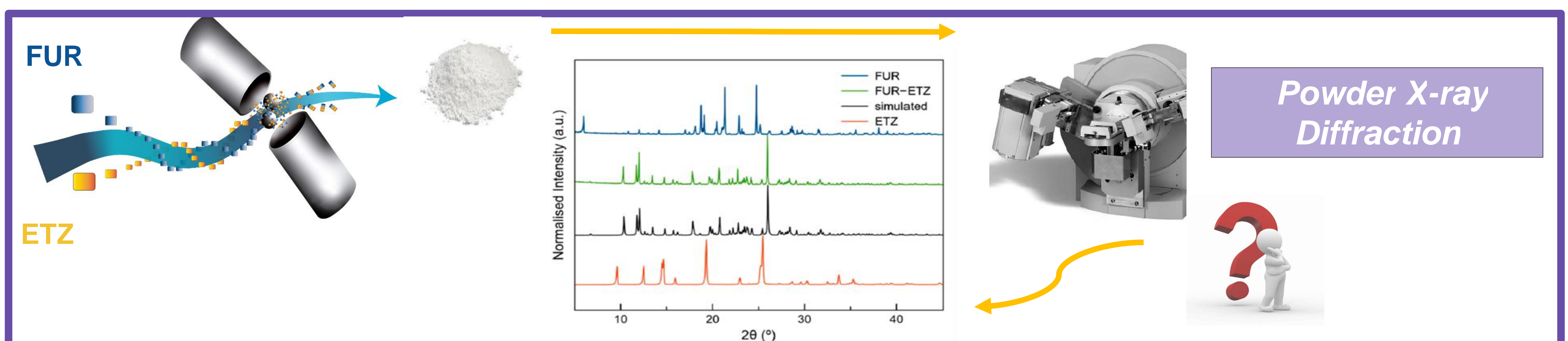
Low solubility and permeability diuretic drug



Ethenzamide, ETZ

Low solubility analgesic and antiinflammatory drug

Results and Discussion



Conclusions

We have obtained a dual-drug co-crystal (FETZ) which has been characterised through X-ray diffraction. The co-crystal was obtained through two different methodologies, solvent evaporation crystallization and Liquid Assisted Grinding, which allowed us to obtain single crystals and powder material.

References

Acebedo-Martínez, F.J.; Alarcón-Payer, C.; Rodríguez-Domingo, L.; Domínguez-Martín, A.; Gómez-Morales, J.; Choquesillo-Lazarte, D. Furosemide/Non-Steroidal Anti-Inflammatory Drug-Drug Pharmaceutical Solids: Novel Opportunities in Drug Formulation. *Crystals* 2021, 11, 1339.



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