SUPPLEMENTARY MATERIALS

Trends in H_2S-donors Chemistry and Their Effects in Cardiovascular Diseases

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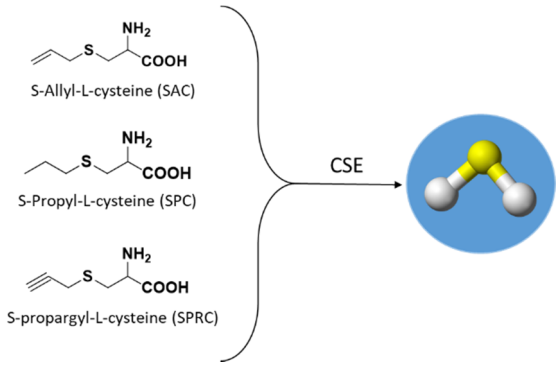


Figure S1. The chemical structures of SAC, SPC and SPRC.

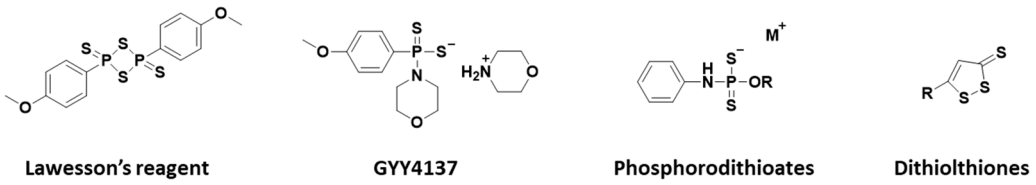


Figure S2. Chemical structures of hydrolysis-triggered H_2S donors.

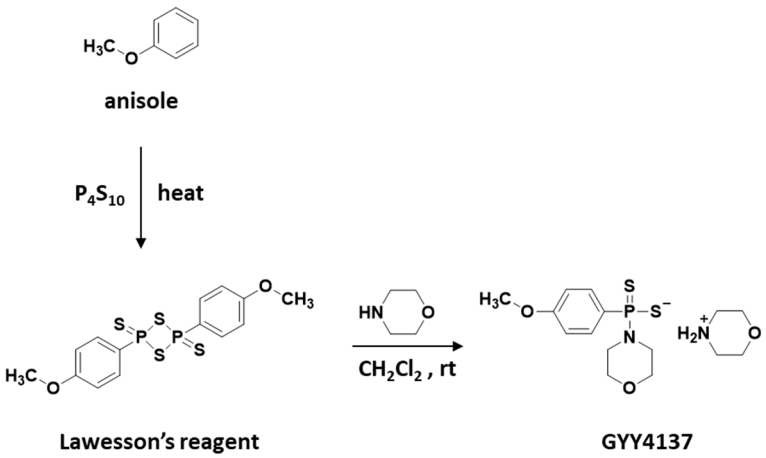


Figure S3. Chemical synthesis of GYY4137.

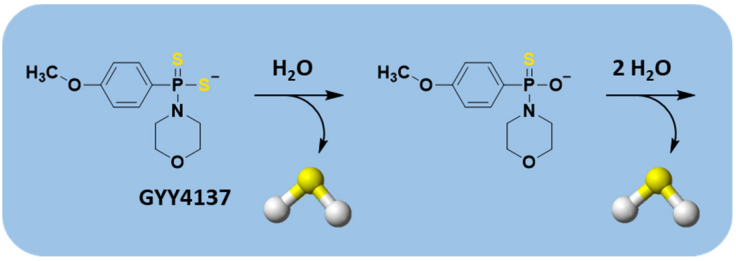


Figure S4. The hydrolytic degradation of GYY4137 and the H_2S release.

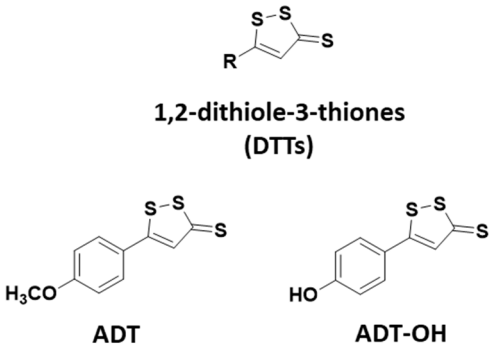


Figure S5. Structures of the most used DTTs as H_2S donors.

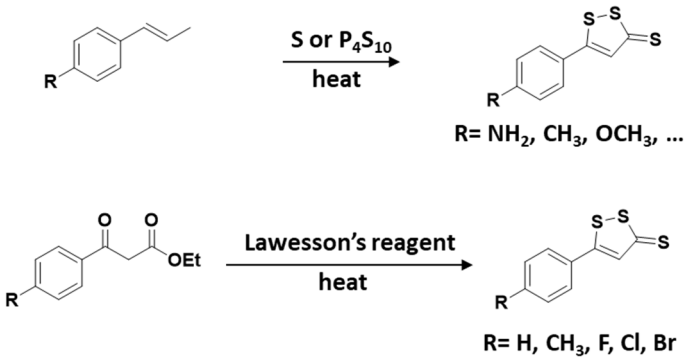


Figure S6. Different chemical strategies to synthesize DTTs.

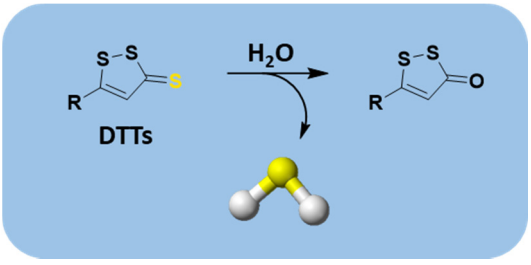


Figure S7. Mechanism of H_2S release from DTTs.

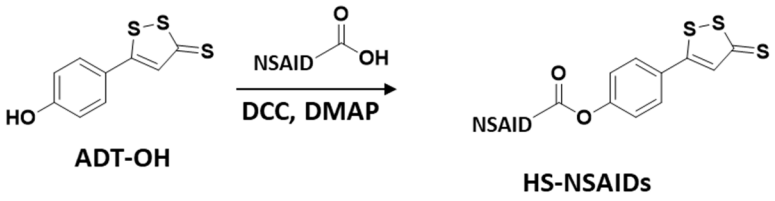


Figure S8. Chemical synthesis of HS-NSAIDs.

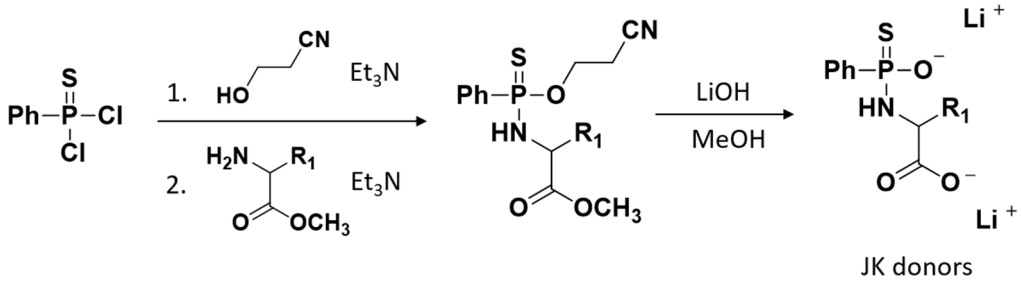


Figure S9. Synthetic strategy to obtain JK donors.

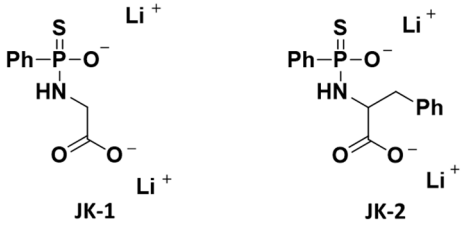


Figure S10. Chemical structures of two main JK donors.

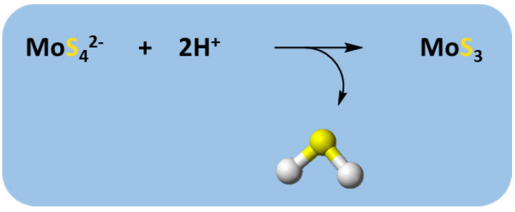


Figure S11. The H_2S release from ammonium tetrathiomolybdate (ATTM).

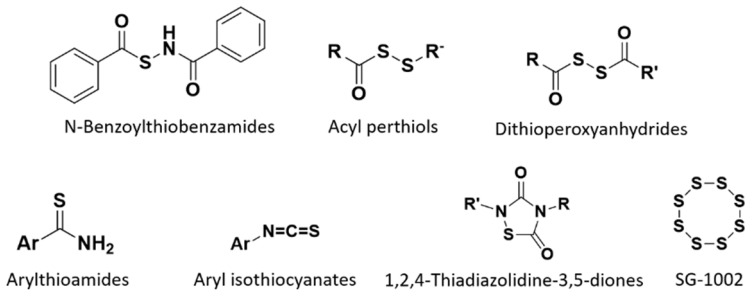


Figure S12. Chemical structures of thiol triggered H_2S donors with cardioprotective activity.

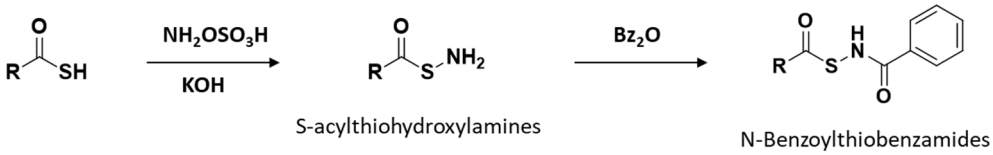


Figure S13. Chemical synthesis of N-(benzoylthio)benzamides.

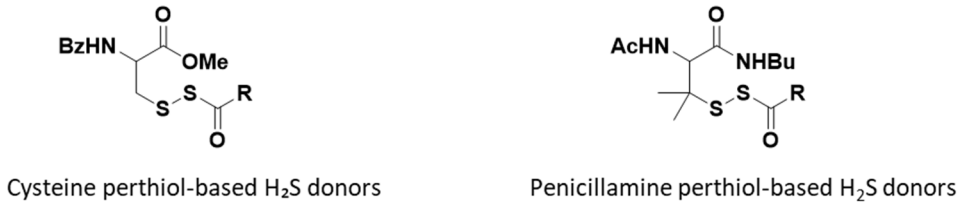


Figure S14. Chemical structures of perthiol-based donors.

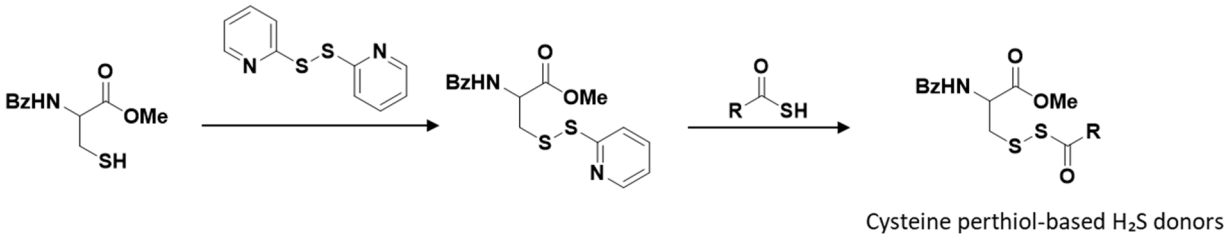


Figure S15. Synthetic route to obtain cysteine perthiol-based donors.

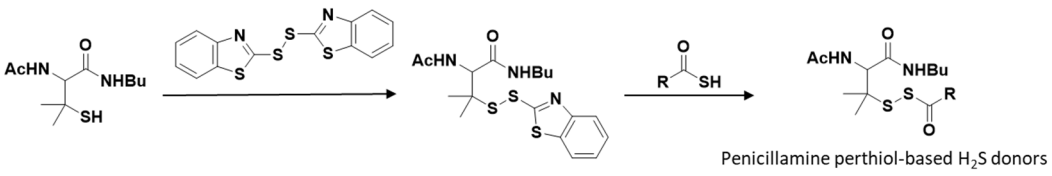


Figure S16. Chemical synthesis of penicillamine perthiol-based donors.

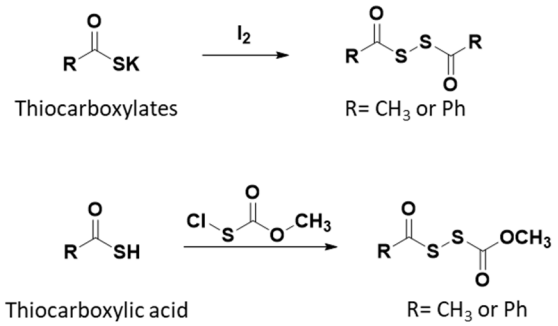


Figure S17. The synthetic strategies to obtain dithioperoxyanhydride-based H_2S.

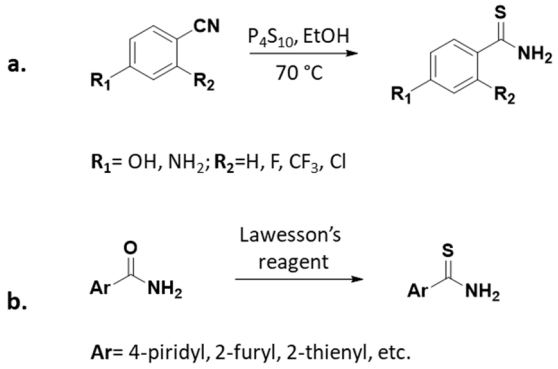


Figure S18. Chemical synthesis of a) non-heterocyclic and b) heterocyclic *p*-hydroxy-arylthio-amides.

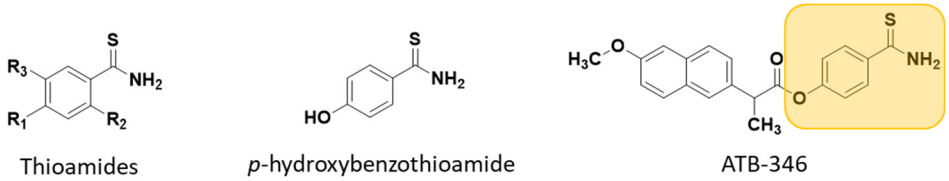


Figure S19. The thioamides: general structure, chemical structures of lead compound (p-hydroxybenzothioamide) and its hybrid with naproxen (ATB-346).

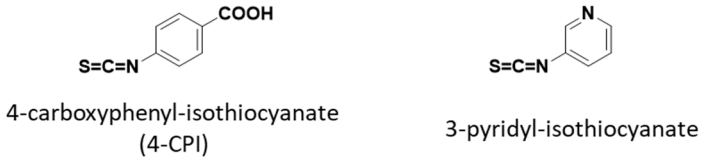


Figure S20. Chemical structures of two aryl isothiocyanates exhibiting cardioprotective activity.

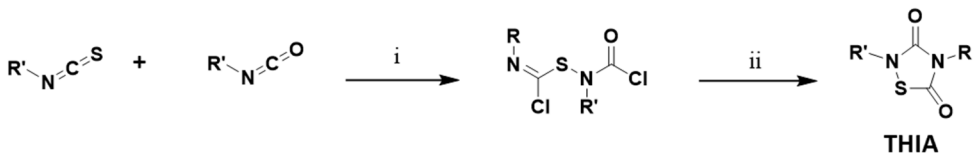


Figure S21. Synthesis of THIA. Conventional synthetic strategy: (i) SO_2Cl_2/diethyl ether, 24h; (ii) H_2O, reflux, 30 min; microwave-assisted synthesis: (i) SO_2Cl_2/diethyl ether/MW 500W, 50 °C, 1h; (ii) H_2O, MW 500W, 120 °C, 30 min.

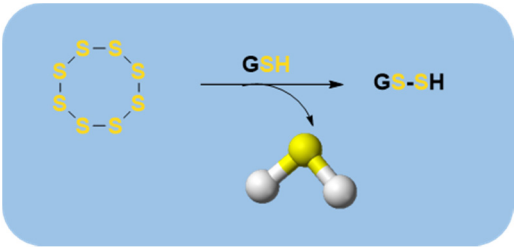
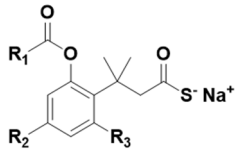


Figure S22. Mechanism of H_2S release from SG1002.



HP-101, R_1=CH_3; R_2=CH_3; R_3=CH_3

HP-102, R_1=  ; R_2=CH_3; R_3=CH_3

Figure S23. Chemical structures of "TML"-based H_2S prodrugs HP-101 and HP-102.

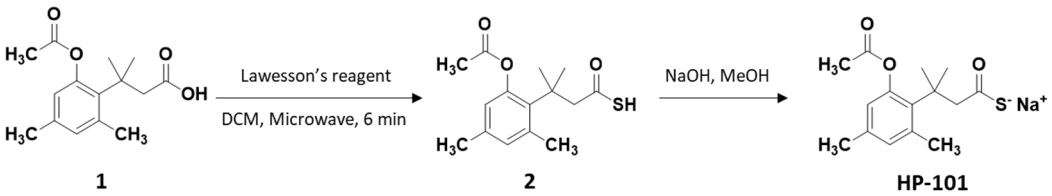


Figure S24. Synthesis of "TML"-based H_2S prodrug HP-101.

Figure S25. Chemical structures of N-thiocarboxyanhydrides (NTAs) and sarcosine NTA derivative (NTA1).

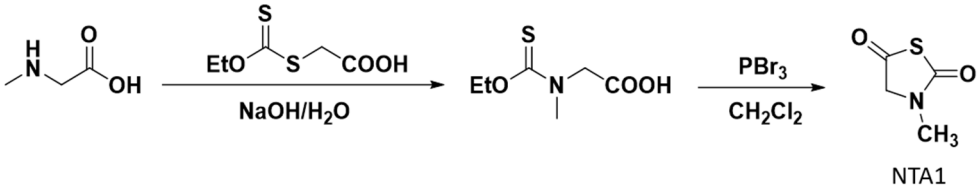


Figure S26. Chemical synthesis of sarcosine NTA derivative (NTA1).

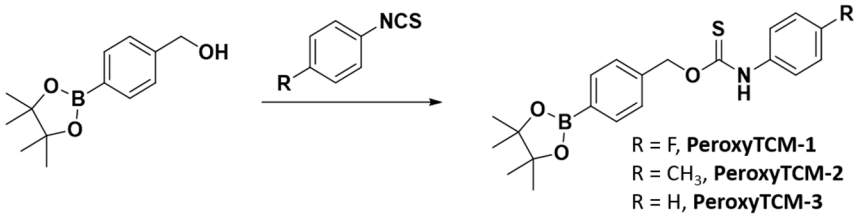


Figure S27. Chemical structures and synthesis of ROS-activated H_2S donors.

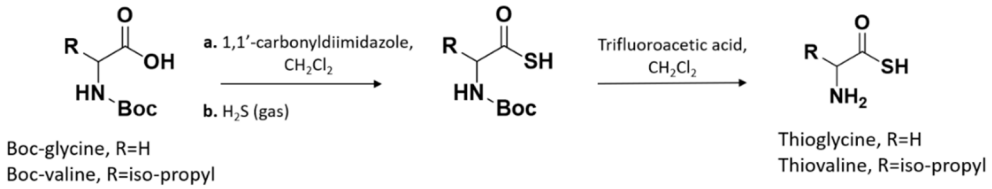


Figure S28. Synthesis of thioamino acids.

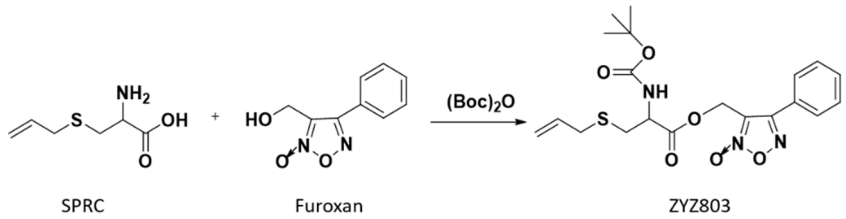


Figure S29. Chemical structure and synthesis of ZYZ803.

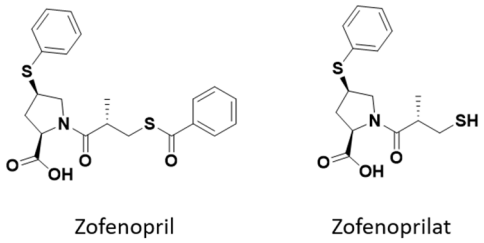


Figure S30. Chemical structures of a) zofenopril and b) its active metabolite, zofenoprilat.