

Synergistic effect of *Sophora japonica* and *Glycyrrhiza glabra* Flavonoid-Rich Fractions on Wound Healing: *In vivo* and Molecular Docking Studies

Shaza H. Aly ^{1, *}, Ahmed M. Elissawy ^{2,3}, Abdallah Mahmoud ⁴, Fatma Sa'eed El-Tokhy ⁵, Sherif S. Abdel Mageed ⁴, Mahmoud A. El Hassab ⁶, Wagdy M. Eldehna ^{7,8}, Hadia Almahli ⁹, Sara T. Al-Rashood ¹⁰, Faizah A. Binjubair ¹⁰ and Abd El-Nasser B. Singab ^{2,3,*}

¹ Department of Pharmacognosy, Faculty of Pharmacy, Badr University in Cairo (BUC), Badr City, Cairo 11829, Egypt

² Department of Pharmacognosy, Faculty of Pharmacy, Ain-Shams University, 11566, Cairo, Egypt

³ Center of Drug Discovery Research and Development, Ain Shams University, Cairo, Egypt

⁴ Pharmacology and Toxicology Department, Faculty of Pharmacy, Badr University in Cairo (BUC), Badr city, Cairo, 11829, Egypt

⁵ Department of Pharmaceutics and pharmaceutical technology, Badr University in Cairo (BUC), Badr city, Cairo, 11829, Egypt

⁶ Department of Medicinal Chemistry, Faculty of Pharmacy, King Salman International University (KSIU),

South Sinai 46612, Egypt

⁷ Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Kafrelsheikh University, Kafrelsheikh 33516, Egypt

⁸ School of Biotechnology, Badr University in Cairo, Badr City, Cairo 11829, Egypt

⁹ Department of Chemistry, University of Cambridge, Cambridge CB2 1EW, UK

¹⁰ Department of Pharmaceutical Chemistry, College of Pharmacy, King Saud University, P.O. Box 2457, Riyadh 11451, Saudi Arabia

* Correspondence: (A.N.B.S.) dean@pharma.asu.edu.eg, (S.H.A.) shaza.husseiny@buc.edu.eg

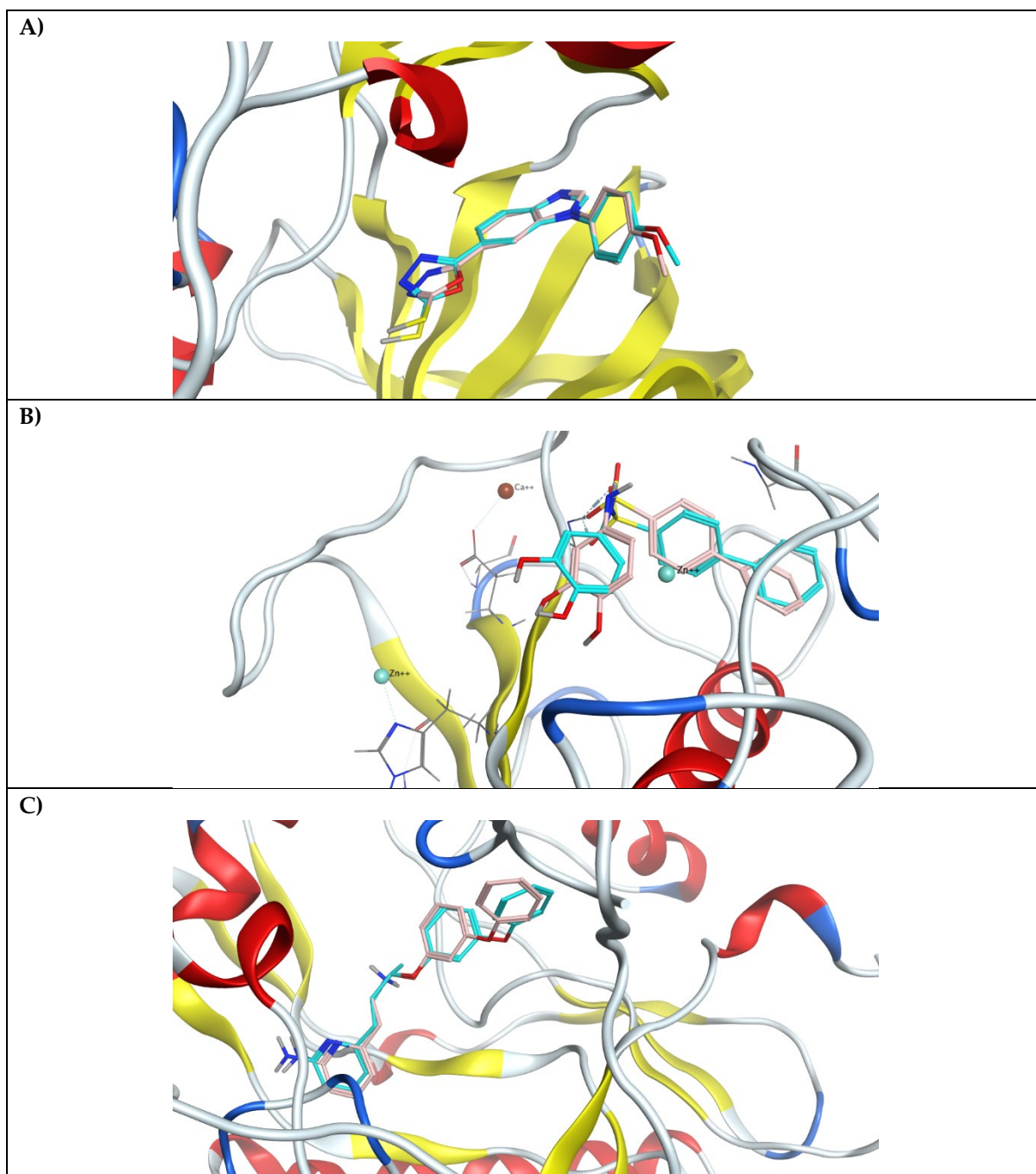
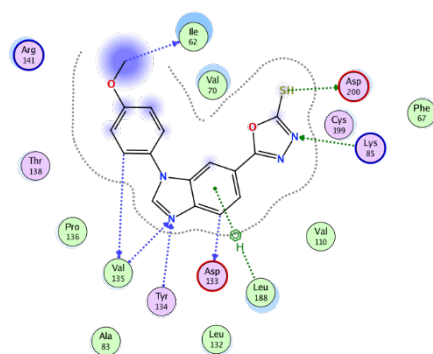
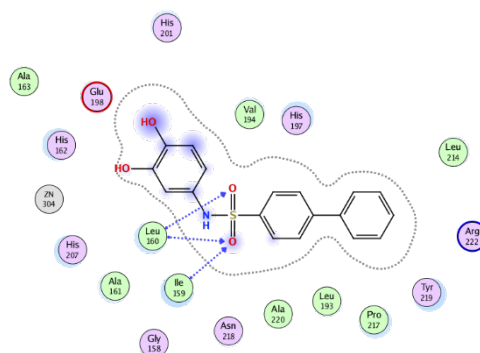


Figure S1. Docking validation of the three targets **A)** GSK3- β (PDB ID: 3F88), **B)** MMP-8 (PDB ID: 5H8X) and **C)** iNOS (PDB ID: 3N2R).

A)



B)



C)

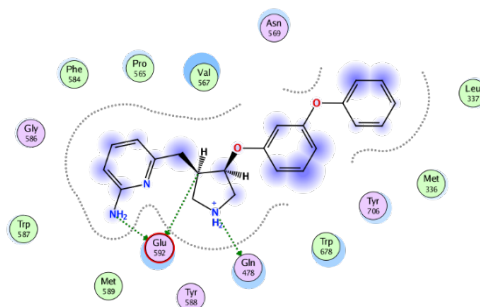


Figure S2. Interaction of the three co-crystallized ligands with **A)** GSK3- β (PDB ID: 3F88), **B)** MMP-8 (PDB ID: 5H8X) and **C)** iNOS (PDB ID: 3N2R).