Natural Product Inhibitors of Topoisomerases against cancer

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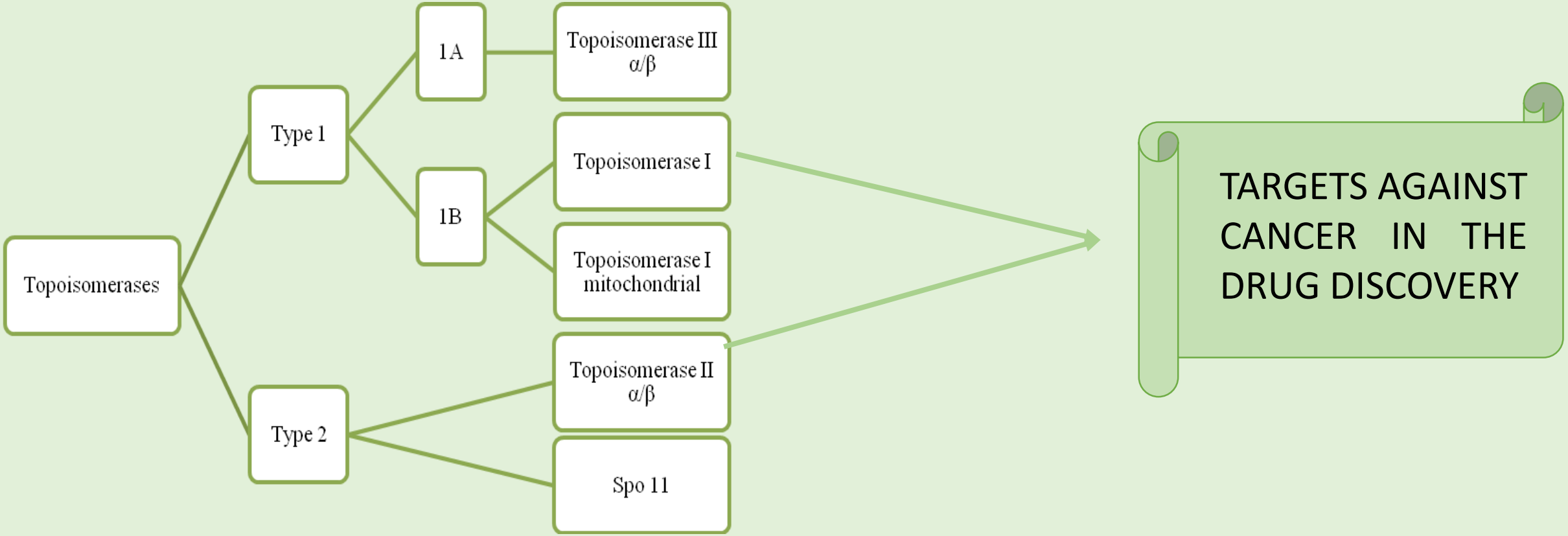
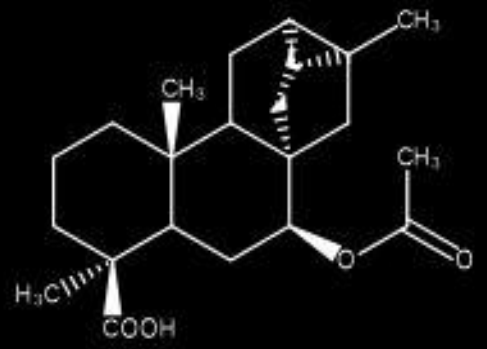




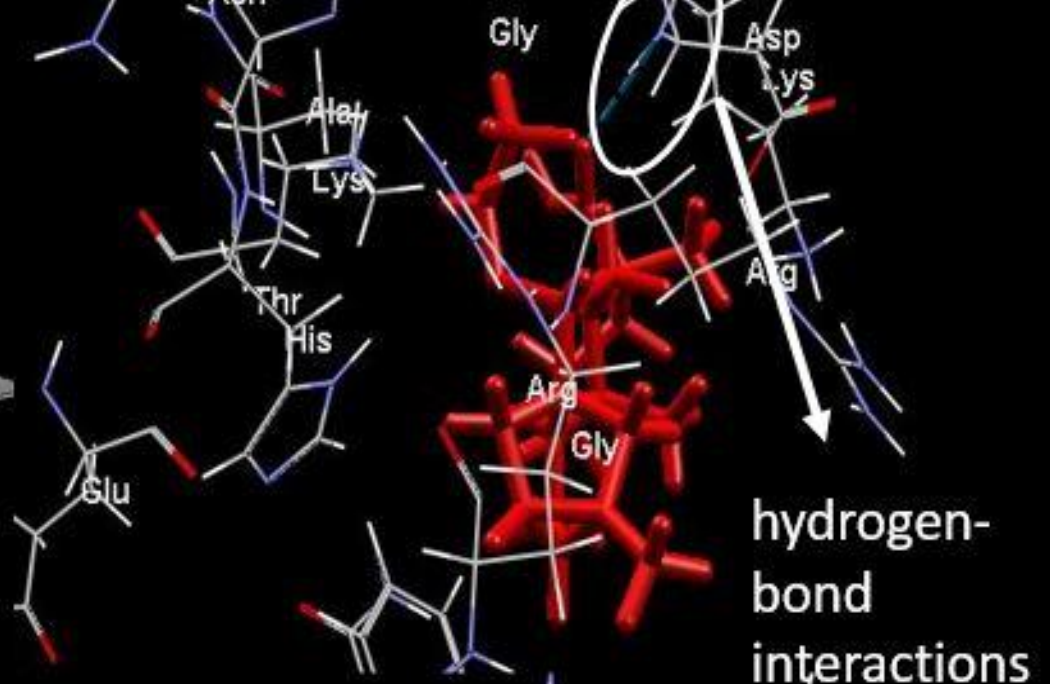
Diterpene

+

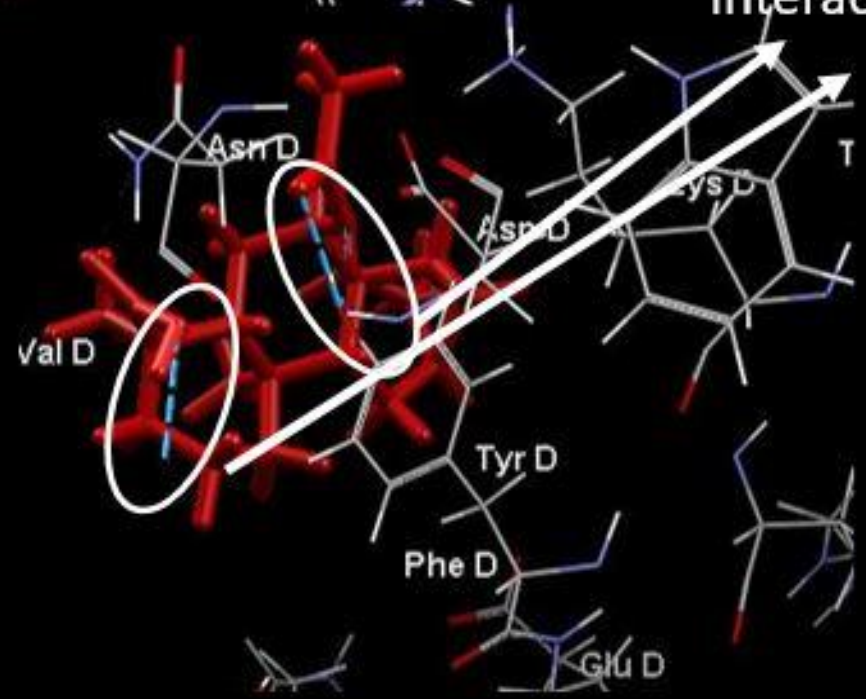
TOPO I

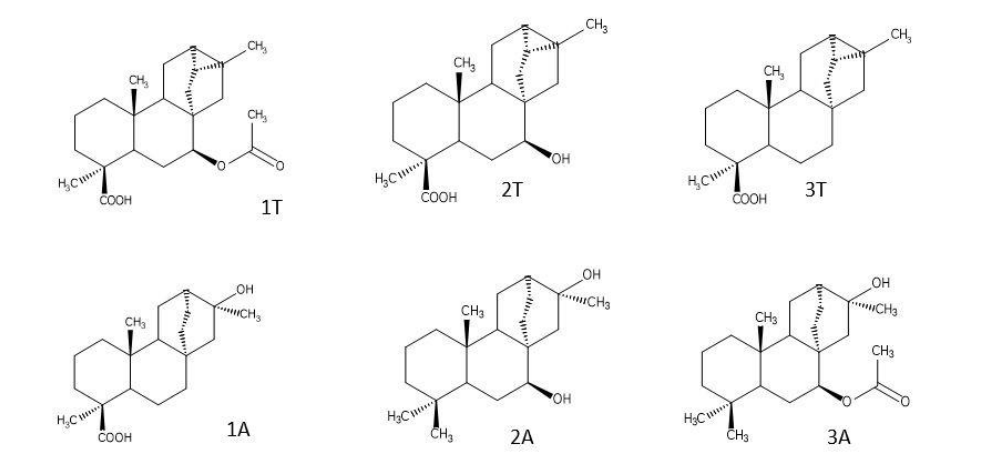
TOPO II

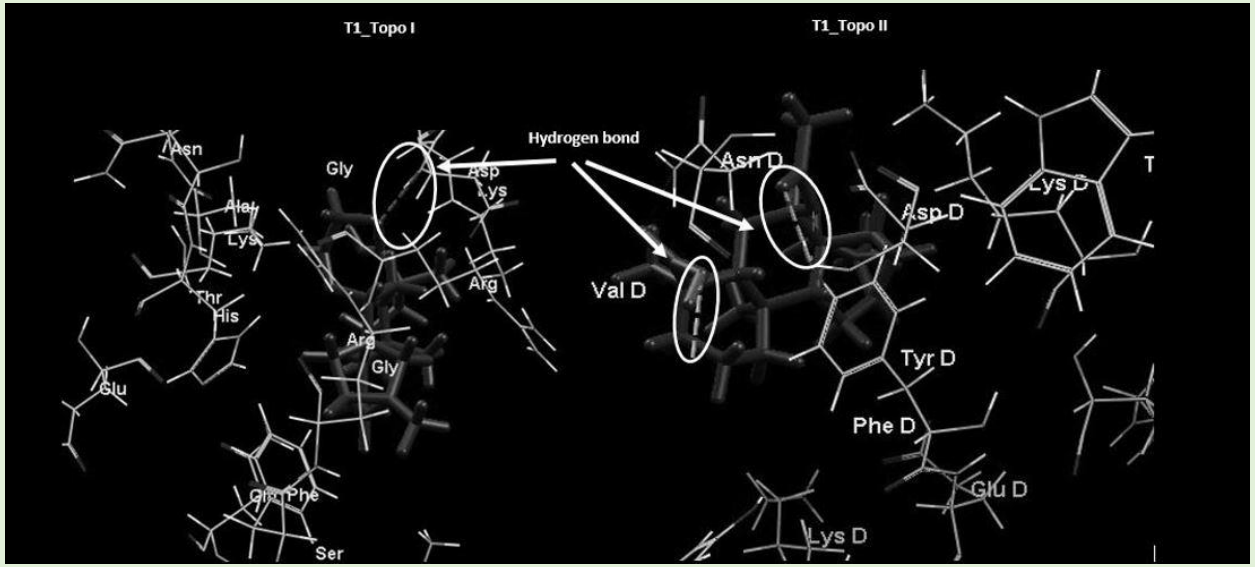
DOCKING



hydrogen-bond interactions







Compound T1 best interacted in both receptors; on the other hand A1 showed the highest energy with the two enzymes. We noted that compound T1 forms one hydrogen bond when submitted to docking with Topo I (with the ASP533 residue) and two with residues in Topo II (THR213 and TYR188). The atisane diterpene forms only steric interactions (between nonpolar atoms) with ARG364 Topo I and Topo II of TYR188. We believe that the stability difference observed in the energy of formation can be attributed to hydrogen-bond interactions.