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The Chemistry Biology Interface

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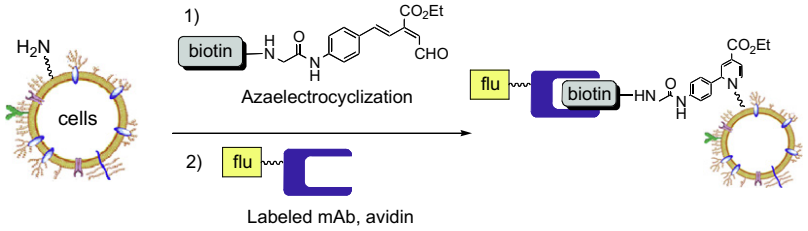
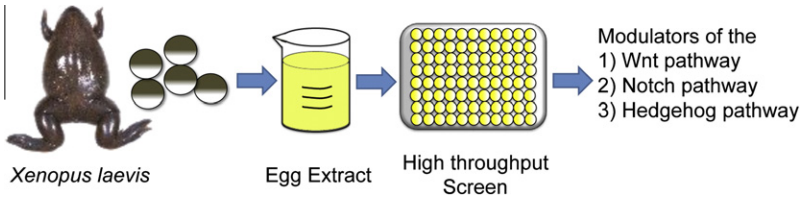
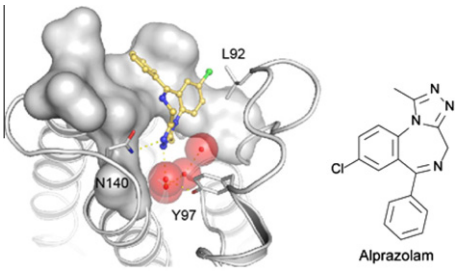
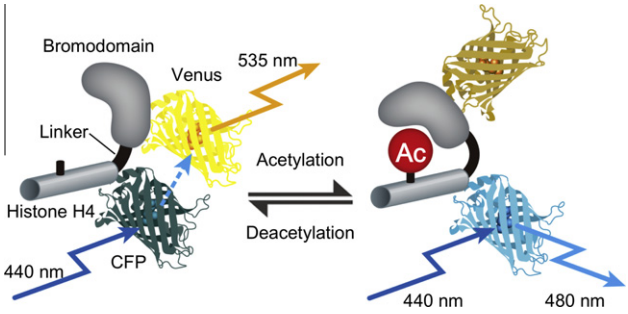


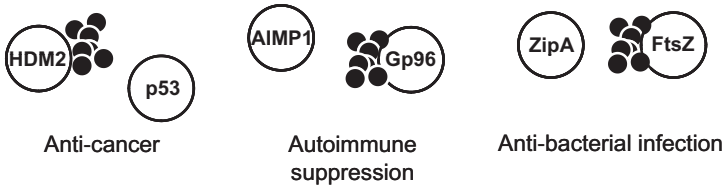
Screening of bioactive compounds



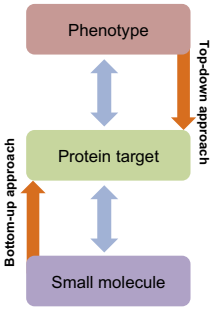


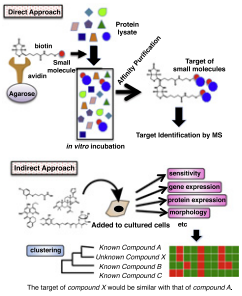
A number of triazolo-benzodiazepines including drugs such as alprazolam have been developed as protein interaction inhibitors that target bromodomains of the BET family.



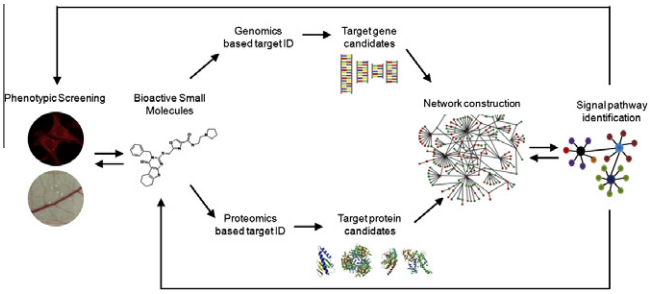


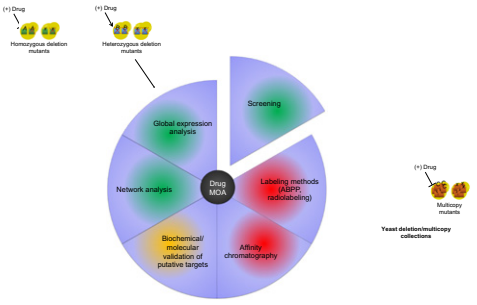
Target identification of bioactive compounds

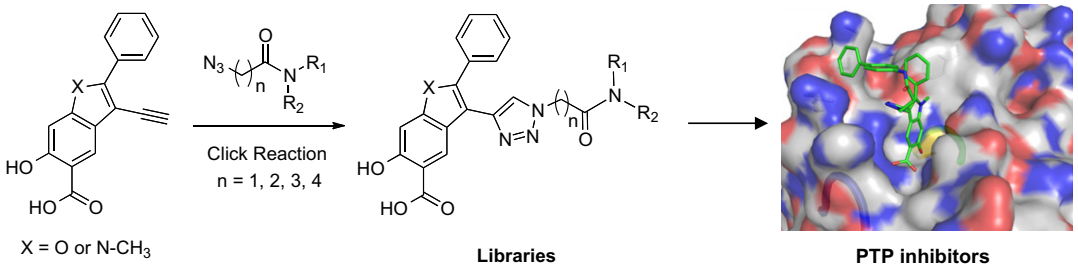




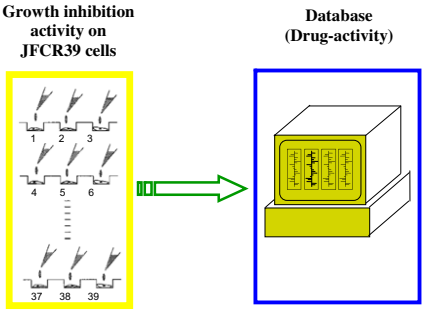
The target of compound X would be similar with that of compound A.

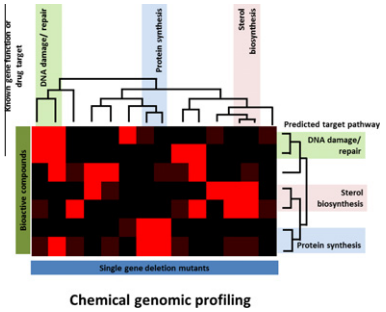


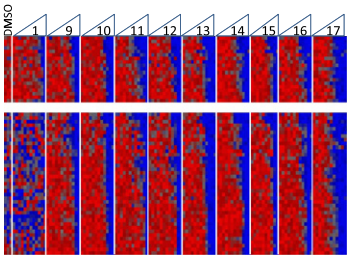


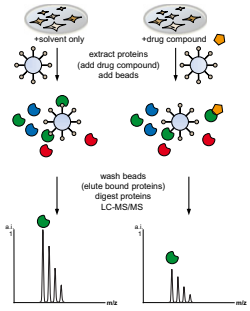


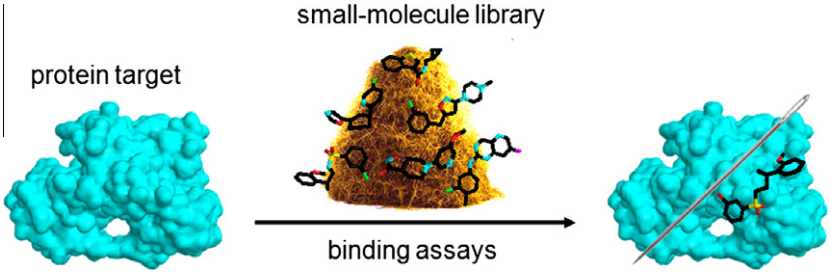
Profiling of bioactive compounds

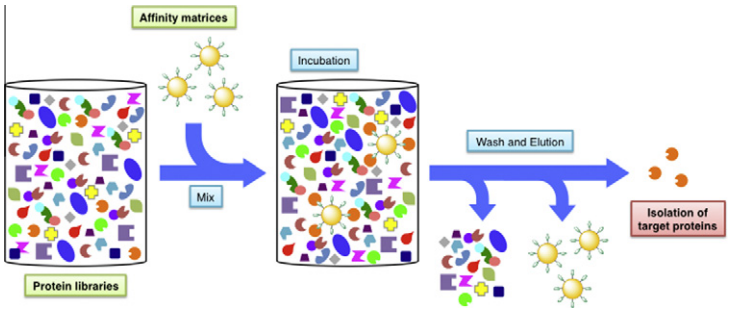












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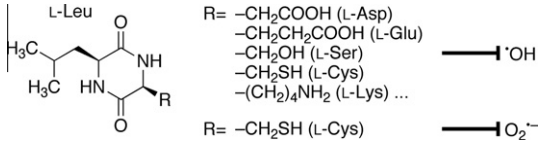
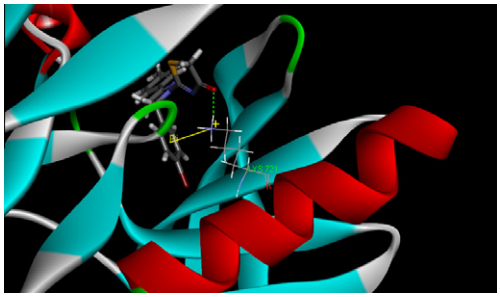
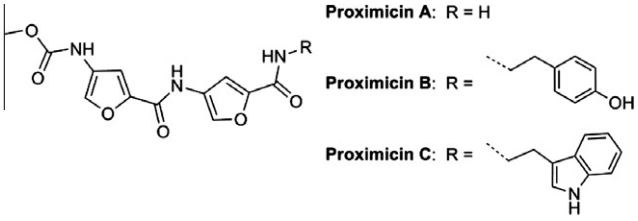
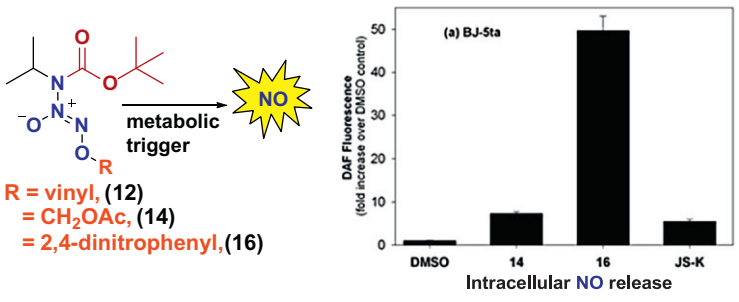
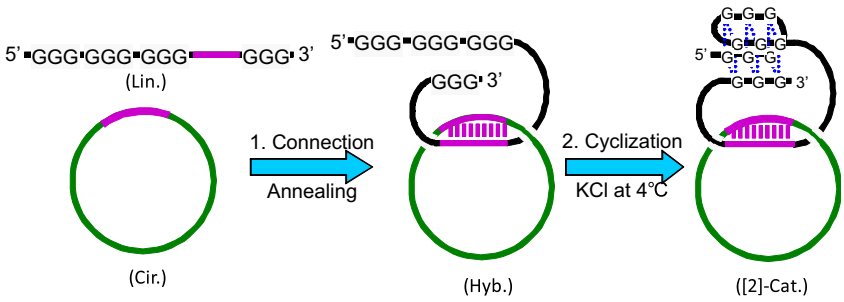


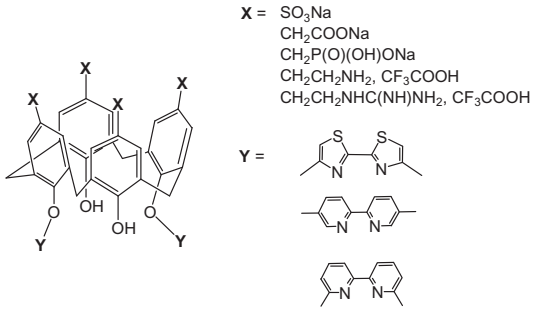


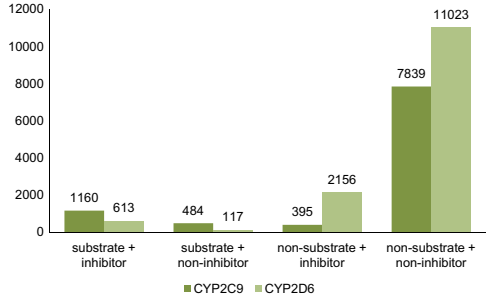
A series of pyrazolyl-thiazolinone derivatives (**E1**–**E36**) have been designed and synthesized and their biological activities were also evaluated as potential EGFR and HER-2 kinase inhibitors. Thirty-four of the 36 compounds were reported for the first time. Among them, compound 2-(5-(4-bromophenyl)-3-*p*-tolyl-4,5-dihydro-1*H*-pyrazol-1-yl)thiazol-4(5*H*)-one (**E28**) displayed the most potent inhibitory activity (IC_{50} = 0.24 μM for EGFR and IC_{50} = 1.07 μM for HER-2). Antiproliferative assay results indicated that compound **E28** owned high antiproliferative activity against MCF-7, B16-F10 and HCT-116 in vitro, with IC_{50} value of 0.30, 0.54, and 0.70 μM, respectively. Docking simulation was further performed to position compound **E28** into the EGFR active site to determine the probable binding model. Based on the preliminary results, compound **E28** with potent inhibitory activity in tumor growth would be a potential anticancer agent.

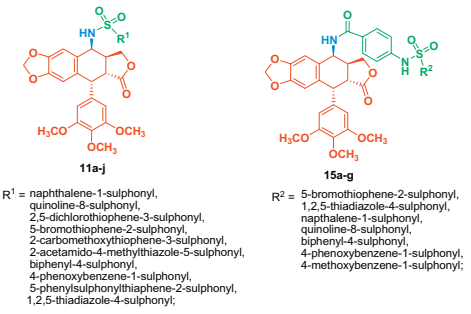


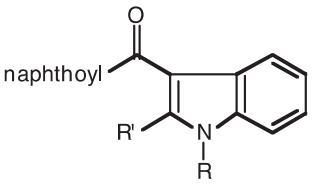




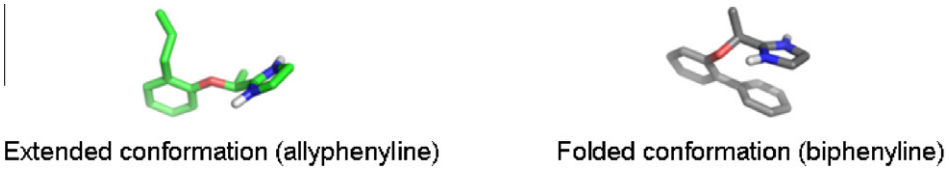


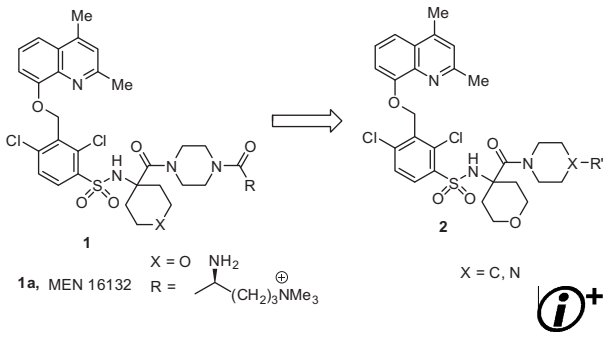


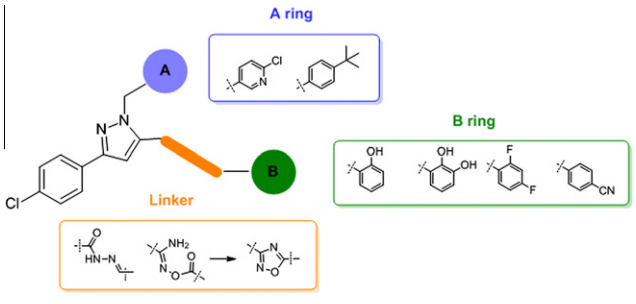


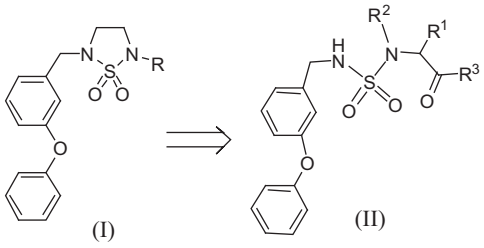


The synthesis and pharmacology of 1-alkyl-3-(4-halo-1-naphthoyl)indoles and 1-alkyl-3-(8-halo-1-naphthoyl)indoles (R = C_3H_7 and C_5H_{11}, R′ = H and CH_3) is described. Three of these compounds have useful selectivity for the CB_2 receptor.

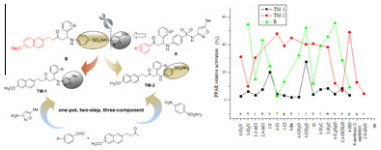


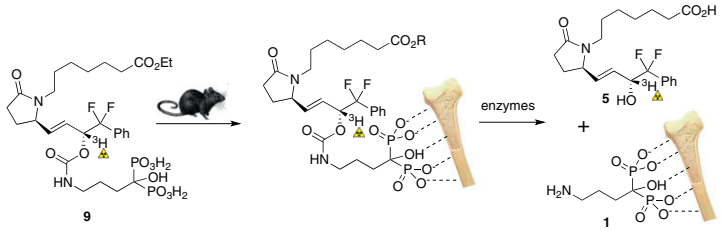




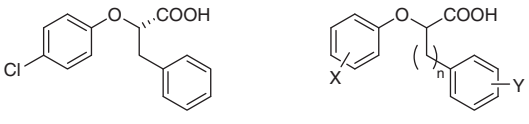


A series of amino acid-derived acyclic sulfamide-based norovirus inhibitors has been synthesized and evaluated using a cell-based replicon system. Several compounds were found to display potent anti-norovirus activity, low toxicity, and good aqueous solubility. These compounds are suitable for further optimization of in vivo potency and ADMET properties.

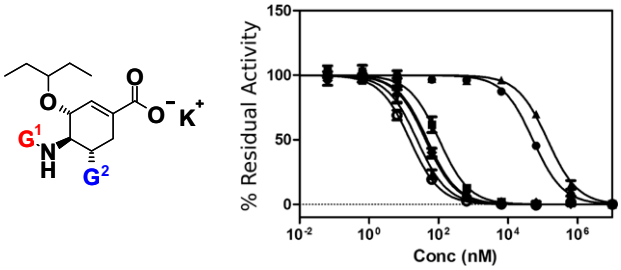


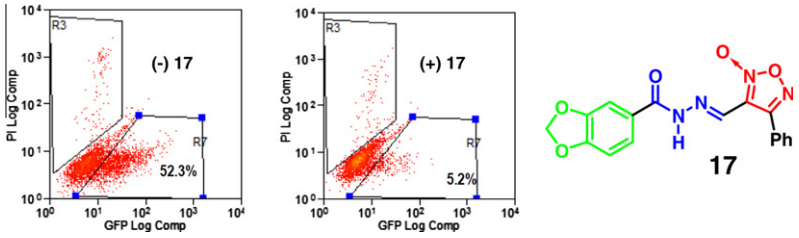


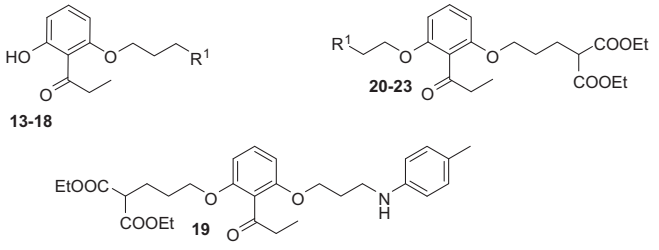
Dual-action pro-drugs (e.g. **9**) target and bind to bone in vivo and slowly release the bone resorption inhibitor, alendronic acid (**1**) and the bone growth stimulant EP4 receptor selective agonist (**5**) in situ.

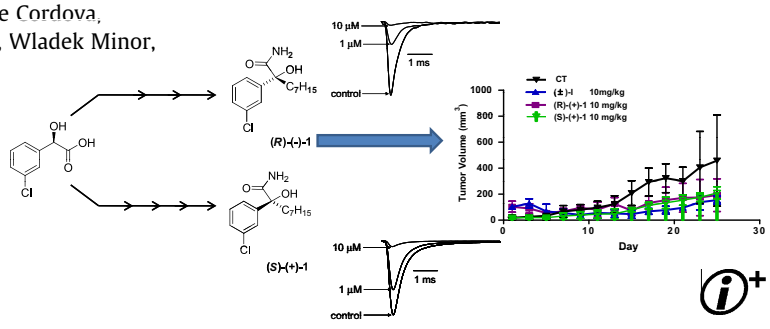


2 **X = Cl, F, CF_3; Y = Cl, F; n = 0, 1**









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