

Supporting Information

ZINClick: a database of 16 million novel, patentable and readily synthesizable 1,4-disubstituted triazoles

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Table S1. List of all molecular descriptors calculated using the software FILTER.¹ For a complete explanation of the descriptors refer to the FILTER's manual.²

Typology	Descriptor name	Typology	Descriptor name
Physical Property	atom count	Functional Group	squalestatin_derivatives
	carbons		acid_halide
	heteroatoms		aldehyde
	heteroatom to carbon ratio		alkyl_halide
	chiral centers		anhydride
	hydrogen-bond acceptors		azide
	hydrogen-bond donors		azo
	lipinski h-bond acceptors		di_peptide
	lipinski h-bond donors		michael_acceptor
	molecular weight		beta_halo_carbonyl
	molecular weight halide fraction		nitro
	formal charge count		oxygen_cation
	sum of formal charges		peroxide
	Non-ring size		phosphonic_acid
	Unbranched chain		phosphonic_ester
	number of ring systems		phosphoric_acid
	maximum size of ring system		phosphoric_ester
	rotatable bonds		sulfonic_acid
	rigid bonds		sulfonic_ester
	XLogP		tricarbo_phosphene
	Solubility		epoxide
	2d PSA		sulfonyl_halide
	total fcn ct		halopyrimidine
Functional Group	quinone		perhalo_ketone
	pentafluorophenyl_esters		aziridine
	paranitrophenyl_esters		oxalyl
	HOBT_esters		alphahalo_amine
	triflates		halo_amine
	lawesson_s_reagent		halo_alkene
	phosphoramides		acyclic_NCN
	beta_carbonyl_quat_nitrogen		acyclic_NS
	acylhydrazide		SCN2
	cation_C_Cl_I_P_or_S		terminal_vinyl
	phosphoryl		hetero_hetero
	alkyl_phosphate		hydrazine
	phosphinic_acid		N_methoyl
	phosphanes		NS_beta_haloethyl
	phosphoranes		propiolactones
	imidoyl_chlorides		iodoso
	nitroso		iodoxy
	N_P_S_Halides		noxide
	carbodiimide		dye
	isonitrile		alcohol
	triacyloxime		alkene
	cyanohydrins		amide
	acyl_cyanides		amino_acid
	sulfonylnitrile		amine
	phosphonylnitrile		primary_amine
	azocyanamides		secondary_amine
	beta_azo_carbonyl		tertiary_amine
	polyenes		carboxylic_acid
	saponin_derivatives		halide
	cytochalasin_derivatives		iodine
	cycloheximide_derivatives		ketone
	monensin_derivatives		phenol

Typology	Descriptor name
Functional Group	imine
	methyl_ketone
	alkylaniline
	sulfonamide
	sulfonylurea
	phosphonamide
	alphahalo_ketone
	oxaziridine
	cyclopropyl
	guanidine
	sulfonimine
	sulfinimine
	hydroxamic_acid
	sulfinylthio
	disulfide
	enol_ether
	enamine
	organometallic
	dithioacetal
	oxime
	isothiocyanate
	isocyanate
	lactone
	lactam
	thioester
	carbonate
	carbamic_acid
	thiocarbamate
	triazine
	malonic
	alkyne
	aniline
	aryl_halide
	carbamate
	ester
	ether

Typology	Descriptor name
Functional Group	hydrazone
	nonacylhydrazone
	hydroxylamine
	nitrile
	sulfide
	sulfone
	sulfoxide
	thiourea
	thioamide
	thiol
	urea
	hemiketal
	hemiacetal
	ketal
	acetal
	aminal
	hemiaminal
	benzyloxycarbonyl_CBZ
	t_butoxycarbonyl_tBOC
	fluorenylmethoxycarbonyl_Fmoc
	dioxolane_5MR
	dioxane_6MR
	tetrahydropyran_THP
	methoxyethoxymethyl_MEM
	benzyl_ether
	t_butyl_ether
	trimethylsilyl_TMS
	t_butyldimethylsilyl_TBDMS
	triisopropylsilyl_TIPS
	t_butyldiphenylsilyl_TBDPS
	phthalimides_PHT
	arenesulfonyl

Table S2. Quantification of drug-, lead- and fragment-like compounds in ZINClick and other databases.

Database	Total	Drug-like ³												Lead-like ⁴				Fragment-like ⁵	
		0 violations		1 violations		2 violations		3 violations		4 violations		5 violations		6 violations					
ZINClick	16,222,262	4,140,042	25%	4,381,965	27%	3,213,764	20%	3,034,553	19%	1,318,364	8%	131,516	1%	2,058	0%	744,235	5%	22,114	0%
ZINC	19,607,982	1,1973,504	61%	6,784,031	35%	693,194	4%	143,048	1%	11,593	0%	2,609	0%	3	0%	5,096,829	26%	609,574	3%
Natural	189,355	105,591	56%	47,709	25%	16,493	9%	9,992	5%	5,716	3%	3,732	2%	122	0%	29,031	15%	16,069	8%
DrugBank	1,486	845	57%	354	24%	83	6%	74	5%	66	4%	62	4%	2	0%	298	20%	328	22%

Table S3. PAINS structural motifs present in ZINClick. Their frequency of occurrence in the original reactants and in the final database. The REGID matches the structural motifs in Tables S6, S7 and S9 in Supporting Information from Baell and Holloway.⁶ (REGID structures are depicted in Figure S5).

REGID	Number of flagged alkynes	Number of flagged azides	Number of flagged ZINClick compounds
azo_A	107	3,506	802,311
imine_one_A	32	54	361,136
ene_five_het_C	17	6	87,581
thio_ketone	2	12	62,606
quinone_D	5	9	59,258
quinone_A	1	8	40,571
ene_five_het_A	2	0	7,046
imine_one_fives	1	0	3,523
thiaz_ene_A	0	0	0
pyrrole_A	0	0	0
catechol_A	0	0	0
ene_five_het_B	0	0	0
hzone_pipzn	0	0	0
keto_keto_beta_A	0	0	0
hzone_pyrrol	0	0	0
ene_one_ene_A	0	0	0
cyano_ene_amine_A	0	0	0
ene_five_one_A	0	0	0
cyano_pyridone_A	0	0	0
anil_alk_ene	0	0	0
amino_acridine_A	0	0	0
ene_five_het_D	0	0	0
thiophene_amino_Aa	0	0	0
ene_five_het_E	0	0	0
sulfonamide_A	0	0	0
sulfonamide_B	0	0	0
anil_no_alk	0	0	0
thiophene_amino_Ab	0	0	0
het_pyridiniums_A	0	0	0
anthranil_one_A	0	0	0
cyano_imine_A	0	0	0
diazox_sulfon_A	0	0	0
hzone_anil_di_alk	0	0	0
rhod_sat_A	0	0	0
hzone_enamin	0	0	0
pyrrole_B	0	0	0
thiophene_hydroxy	0	0	0
cyano_pyridone_B	0	0	0
imine_one_sixes	0	0	0
dyes5A	0	0	0
naphth_amino_A	0	0	0
naphth_amino_B	0	0	0
ene_one_ester	0	0	0
thio_dibenzo	0	0	0
cyano_cyano_A	0	0	0
hzone_acyl_naphthol	0	0	0
het_65_A	0	0	0
imidazole_A	0	0	0
ene_cyano_A	0	0	0
anthranil_acid_A	0	0	0
dyes3A	0	0	0
dhp_bis_amino_CN	0	0	0
het_6_tetrazine	0	0	0
ene_one_hal	0	0	0
cyano_imine_B	0	0	0

REGID	Number of flagged alkynes	Number of flagged azides	Number of flagged ZINCclick compounds
thiaz_ene_B	0	0	0
ene_rhod_B	0	0	0
thio_carbonate_A	0	0	0
anil_di_alk_furan_A	0	0	0
ene_five_het_F	0	0	0
anil_di_alk_F	0	0	0
hzone_anil	0	0	0
het_5_pyrazole_OH	0	0	0
het_thio_666_A	0	0	0
styrene_A	0	0	0
ene_rhod_C	0	0	0
dhp_amino_CN_A	0	0	0
cyano_imine_C	0	0	0
thio_urea_A	0	0	0
thiophene_amino_B	0	0	0
keto_keto_beta_B	0	0	0
keto_phenone_A	0	0	0
cyano_pyridone_C	0	0	0
thiaz_ene_C	0	0	0
hzone_thiophene_A	0	0	0
ene_quin_methide	0	0	0
het_thio_676_A	0	0	0
ene_five_het_G	0	0	0
acyl_het_A	0	0	0
anil_di_alk_G	0	0	0
dhp_keto_A	0	0	0
thio_urea_B	0	0	0
anil_alk_bim	0	0	0
imine_imine_A	0	0	0
thio_urea_C	0	0	0
imine_one_fives_B	0	0	0
dhp_amino_CN_B	0	0	0
anil_OC_no_alk_A	0	0	0
het_thio_66_one	0	0	0
styrene_B	0	0	0
het_thio_5_A	0	0	0
anil_di_alk_ene_A	0	0	0
ene_rhod_D	0	0	0
ene_rhod_E	0	0	0
anil_OH_alk_A	0	0	0
pyrrole_C	0	0	0
thio_urea_D	0	0	0
thiaz_ene_D	0	0	0
ene_rhod_F	0	0	0
thiaz_ene_E	0	0	0
het_65_B	0	0	0
keto_keto_beta_C	0	0	0
het_66_A	0	0	0
thio_urea_E	0	0	0
thiophene_amino_C	0	0	0
hzone_phenone	0	0	0
ene_rhod_G	0	0	0
ene_cyano_B	0	0	0
dhp_amino_CN_C	0	0	0
het_5_A	0	0	0
ene_five_het_H	0	0	0
thio_amide_A	0	0	0
ene_cyano_C	0	0	0
hzone_furan_A	0	0	0

REGID	Number of flagged alkynes	Number of flagged azides	Number of flagged ZINClick compounds
anil_di_alk_H	0	0	0
het_65_C	0	0	0
thio_urea_F	0	0	0
ene_five_het_I	0	0	0
keto_keto_gamma	0	0	0
quinone_B	0	0	0
het_6_pyridone_OH	0	0	0
hzone_naphth_A	0	0	0
thio_ester_A	0	0	0
ene_misc_A	0	0	0
cyano_pyridone_D	0	0	0
het_65_Db	0	0	0
het_666_A	0	0	0
diazox_sulfon_B	0	0	0
anil_NH_alk_A	0	0	0
sulfonamide_C	0	0	0
het_thio_N_55	0	0	0
keto_keto_beta_D	0	0	0
ene_rhod_H	0	0	0
imine_ene_A	0	0	0
het_thio_656a	0	0	0
pyrrole_D	0	0	0
pyrrole_E	0	0	0
thio_urea_G	0	0	0
anisol_A	0	0	0
pyrrole_F	0	0	0
dhp_amino_CN_D	0	0	0
thiazole_amine_A	0	0	0
het_6_imidate_A	0	0	0
anil_OC_no_alk_B	0	0	0
styrene_C	0	0	0
azulene	0	0	0
furan_acid_A	0	0	0
cyano_pyridone_E	0	0	0
anil_alk_thio	0	0	0
anil_di_alk_I	0	0	0
het_thio_6_furan	0	0	0
anil_di_alk_ene_B	0	0	0
imine_one_B	0	0	0
anil_OC_alk_A	0	0	0
ene_five_het_J	0	0	0
pyrrole_G	0	0	0
ene_five_het_K	0	0	0
cyano_ene_amine_B	0	0	0
thio_ester_B	0	0	0
ene_five_het_L	0	0	0
hzone_thiophene_B	0	0	0
dhp_amino_CN_E	0	0	0
het_5_B	0	0	0
imine_imine_B	0	0	0
thiazole_amine_B	0	0	0
imine_ene_one_A	0	0	0
diazox_A	0	0	0
ene_one_A	0	0	0
anil_OC_no_alk_C	0	0	0
thiazol_SC_A	0	0	0
het_666_B	0	0	0
furan_A	0	0	0
colchicine_A	0	0	0

REGID	Number of flagged alkynes	Number of flagged azides	Number of flagged ZINCclick compounds
thiophene_C	0	0	0
anil_OC_alk_B	0	0	0
het_thio_66_A	0	0	0
rhod_sat_B	0	0	0
ene_rhod_I	0	0	0
keto_thiophene	0	0	0
imine_imine_C	0	0	0
het_65_pyridone_A	0	0	0
thiazole_amine_C	0	0	0
het_thio_pyr_A	0	0	0
melamine_A	0	0	0
anil_NH_alk_B	0	0	0
rhod_sat_C	0	0	0
thiophene_amino_D	0	0	0
anil_OC_alk_C	0	0	0
het_thio_65_A	0	0	0
het_thio_656b	0	0	0
thiazole_amine_D	0	0	0
thio_urea_H	0	0	0
cyano_pyridone_F	0	0	0
rhod_sat_D	0	0	0
ene_rhod_J	0	0	0
imine_phenol_A	0	0	0
thio_carbonate_B	0	0	0
het_thio_N_5A	0	0	0
het_thio_N_65A	0	0	0
anil_di_alk_J	0	0	0
pyrrole_H	0	0	0
ene_cyano_D	0	0	0
cyano_cyano_B	0	0	0
ene_five_het_M	0	0	0
cyano_ene_amine_C	0	0	0
thio_urea_I	0	0	0
dhp_amino_CN_F	0	0	0
anthranil_acid_B	0	0	0
diazox_B	0	0	0
thio_aldehyd_A	0	0	0
thio_amide_B	0	0	0
imidazole_B	0	0	0
thiazole_amine_E	0	0	0
thiazole_amine_F	0	0	0
thio_ester_C	0	0	0
ene_one_B	0	0	0
quinone_C	0	0	0
keto_naphthol_A	0	0	0
thio_amide_C	0	0	0
phthalimide_misc	0	0	0
sulfonamide_D	0	0	0
anil_NH_alk_C	0	0	0
het_65_E	0	0	0
hzide_naphth	0	0	0
anisol_B	0	0	0
thio_carbam_ene	0	0	0
thio_amide_D	0	0	0
het_65_Da	0	0	0
thiophene_D	0	0	0
het_thio_6_ene	0	0	0
cyano_keto_A	0	0	0
anthranil_acid_C	0	0	0

REGID	Number of flagged alkynes	Number of flagged azides	Number of flagged ZINCclick compounds
naphth_amino_C	0	0	0
naphth_amino_D	0	0	0
thiazole_amine_G	0	0	0
het_66_B	0	0	0
coumarin_A	0	0	0
anthranil_acid_D	0	0	0
het_66_C	0	0	0
thiophene_amino_E	0	0	0
het_6666_A	0	0	0
sulfonamide_E	0	0	0
anil_di_alk_K	0	0	0
het_5_C	0	0	0
ene_six_het_B	0	0	0
steroid_A	0	0	0
het_565_A	0	0	0
thio_imine_ium	0	0	0
anthranil_acid_E	0	0	0
hzone_furan_B	0	0	0
thiophene_E	0	0	0
ene_misc_B	0	0	0
het_thio_5_B	0	0	0
thiophene_amino_F	0	0	0
anil_OC_alk_D	0	0	0
tert_butyl_A	0	0	0
thio_urea_J	0	0	0
het_thio_65_B	0	0	0
coumarin_B	0	0	0
thio_urea_K	0	0	0
thiophene_amino_G	0	0	0
anil_NH_alk_D	0	0	0
het_thio_5_C	0	0	0
thio_keto_het	0	0	0
het_thio_N_5B	0	0	0
anil_di_alk_furan_B	0	0	0
ene_six_het_C	0	0	0
het_55_A	0	0	0
het_thio_65_C	0	0	0
hydroquin_A	0	0	0
anthranil_acid_F	0	0	0
pyrrole_I	0	0	0
thiophene_amino_H	0	0	0
imine_one_fives_C	0	0	0
keto_phenone_zone_A	0	0	0
dyes7A	0	0	0
het_pyridiniums_B	0	0	0
het_5_D	0	0	0
thiazole_amine_H	0	0	0
thiazole_amine_I	0	0	0
het_thio_N_5C	0	0	0
sulfonamide_F	0	0	0
thiazole_amine_J	0	0	0
het_65_F	0	0	0
keto_keto_beta_E	0	0	0
ene_five_one_B	0	0	0
keto_keto_beta_zone	0	0	0
thio_urea_L	0	0	0
het_thio_urea_ene	0	0	0
cyano_amino_het_A	0	0	0
tetrazole_hzide	0	0	0

REGID	Number of flagged alkynes	Number of flagged azides	Number of flagged ZINClick compounds
imine_naphthol_A	0	0	0
misc_anisole_A	0	0	0
het_thio_665	0	0	0
anil_di_alk_L	0	0	0
colchicine_B	0	0	0
misc_aminoacid_A	0	0	0
imidazole_amino_A	0	0	0
phenol_sulfite_A	0	0	0
het_66_D	0	0	0
misc_anisole_B	0	0	0
tetrazole_A	0	0	0
het_65_G	0	0	0
misc_trityl_A	0	0	0
misc_pyridine_OC	0	0	0
het_6_hydroxyridone	0	0	0
miscstilbene	0	0	0
miscimidazole	0	0	0
anil_NH_no_alk_A	0	0	0
het_6_imidate_B	0	0	0
anil_alk_B	0	0	0
styrene_anil_A	0	0	0
misc_aminal_acid	0	0	0
anil_no_alk_D	0	0	0
anil_alk_C	0	0	0
misc_anisole_C	0	0	0
het_465_misc	0	0	0
anthranil_acid_G	0	0	0
anil_di_alk_M	0	0	0
anthranil_acid_H	0	0	0
thio_urea_M	0	0	0
thiazole_amine_K	0	0	0
het_thio_5_imine_A	0	0	0
thio_amide_E	0	0	0
het_thio_676_B	0	0	0
sulfonamide_G	0	0	0
thio_thiomorph_Z	0	0	0
naphth_ene_one_A	0	0	0
naphth_ene_one_B	0	0	0
amino_acridine_A	0	0	0
keto_phenone_B	0	0	0
hzone_acid_A	0	0	0
sulfonamide_H	0	0	0
het_565_indole	0	0	0
pyrrole_J	0	0	0
pyrazole_amino_B	0	0	0
pyrrole_K	0	0	0
anthranil_acid_I	0	0	0
thio_amide_F	0	0	0
ene_one_C	0	0	0
het_65_H	0	0	0
cyano_imine_D	0	0	0
cyano_misc_A	0	0	0
ene_misc_C	0	0	0
het_66_E	0	0	0
keto_keto_beta_F	0	0	0
misc_naphthimidazole	0	0	0
naphth_ene_one_C	0	0	0
keto_phenone_C	0	0	0
coumarin_C	0	0	0

REGID	Number of flagged alkynes	Number of flagged azides	Number of flagged ZINCclick compounds
thio_est_cyano_A	0	0	0
het_65_imidazole	0	0	0
anthranil_acid_J	0	0	0
colchicine_het	0	0	0
ene_misc_D	0	0	0
indole_3yl_alk_B	0	0	0
anil_OH_no_alk_A	0	0	0
thiazole_amine_L	0	0	0
pyrazole_amino_A	0	0	0
het_thio_N_5D	0	0	0
anil_alk_indane	0	0	0
anil_di_alk_N	0	0	0
het_666_C	0	0	0
ene_one_D	0	0	0
anil_di_alk_indol	0	0	0
anil_no_alk_indol_A	0	0	0
dhp_amino_CN_G	0	0	0
anil_di_alk_dhp	0	0	0
anthranil_amide_A	0	0	0
hzone_anthran_Z	0	0	0
ene_one_amide_A	0	0	0
het_76_A	0	0	0
thio_urea_N	0	0	0
anil_di_alk_coum	0	0	0
ene_one_amide_B	0	0	0
het_thio_656c	0	0	0
het_5_ene	0	0	0
thio_imide_A	0	0	0
dhp_amidine_A	0	0	0
thio_urea_O	0	0	0
anil_di_alk_O	0	0	0
thio_urea_P	0	0	0
het_pyraz_misc	0	0	0
diazox_C	0	0	0
diazox_D	0	0	0
misc_cyclopropane	0	0	0
imine_ene_one_B	0	0	0
coumarin_D	0	0	0
misc_furan_A	0	0	0
rhod_sat_E	0	0	0
rhod_sat_imine_A	0	0	0
rhod_sat_F	0	0	0
het_thio_5_imine_B	0	0	0
het_thio_5_imine_C	0	0	0
ene_five_het_N	0	0	0
thio_carbam_A	0	0	0
misc_anilide_A	0	0	0
misc_anilide_B	0	0	0
mannich_B	0	0	0
mannich_catechol_A	0	0	0
anil_alk_D	0	0	0
het_65_I	0	0	0
misc_urea_A	0	0	0
imidazole_C	0	0	0
styrene_imidazole_A	0	0	0
thiazole_amine_M	0	0	0
misc_pyrrole_thiaz	0	0	0
pyrrole_L	0	0	0
het_thio_65_D	0	0	0

REGID	Number of flagged alkynes	Number of flagged azides	Number of flagged ZINCclick compounds
ene_misc_E	0	0	0
thio_cyano_A	0	0	0
cyano_amino_het_B	0	0	0
cyano_pyridone_G	0	0	0
het_65_J	0	0	0
ene_one_yne_A	0	0	0
anil_OH_no_alk_B	0	0	0
hzone_acyl_misc_A	0	0	0
thiophene_F	0	0	0
anil_OC_alk_E	0	0	0
anil_OC_alk_F	0	0	0
het_65_K	0	0	0
het_65_L	0	0	0
coumarin_E	0	0	0
coumarin_F	0	0	0
coumarin_G	0	0	0
coumarin_H	0	0	0
het_thio_67_A	0	0	0
sulfonamide_I	0	0	0
het_65_mannich	0	0	0
anil_alk_A	0	0	0
het_5_inium	0	0	0
anil_di_alk_P	0	0	0
thio_urea_Q	0	0	0
thio_pyridine_A	0	0	0
melamine_B	0	0	0
misc_phthal_thio_N	0	0	0
hzone_acyl_misc_B	0	0	0
tert_butyl_B	0	0	0
diazox_E	0	0	0
anil_NH_no_alk_B	0	0	0
anil_no_alk_A	0	0	0
anil_no_alk_B	0	0	0
thio_ene_amine_A	0	0	0
het_55_B	0	0	0
cyanamide_A	0	0	0
ene_one_one_A	0	0	0
ene_six_het_D	0	0	0
ene_cyano_E	0	0	0
ene_cyano_F	0	0	0
hzone_furan_C	0	0	0
anil_no_alk_C	0	0	0
hzone_acid_D	0	0	0
hzone_furan_E	0	0	0
het_6_pyridone_NH2	0	0	0
imine_one_fives_D	0	0	0
pyrrole_M	0	0	0
pyrrole_N	0	0	0
pyrrole_O	0	0	0
ene_cyano_G	0	0	0
sulfonamide_J	0	0	0
misc_pyrrole_benz	0	0	0
thio_urea_R	0	0	0
ene_one_one_B	0	0	0
dhp_amino_CN_H	0	0	0
het_66_anisole	0	0	0
thiazole_amine_N	0	0	0
het_pyridiniums_C	0	0	0
het_5_E	0	0	0

REGID	Number of flagged alkynes	Number of flagged azides	Number of flagged ZINClick compounds
ene_six_het_A	0	0	0
hzone_phenol_A	0	0	0
anil_di_alk_A	0	0	0
indol_3yl_alk	0	0	0
mannich_A	0	0	0
anil_di_alk_B	0	0	0
anil_di_alk_C	0	0	0
ene_rhod_A	0	0	0
hzone_phenol_B	0	0	0
anil_di_alk_D	0	0	0
imine_one_isatin	0	0	0
anil_di_alk_E	0	0	0
Total	167	183	1,424,032
Total without duplicates	158	162	1,281,422

Table S4. Substructure SMARTS pattern occurrences of each fingerprint bit in the ZINC and ZINCclick diversity subsets.

	ZINC	ZINCclick		ZINC	ZINCclick		ZINC	ZINCclick
bit 1	0	0	bit 45	2589	193	bit 89	0	0
bit 2	0	3	bit 46	0	0	bit 90	0	0
bit 3	0	0	bit 47	0	0	bit 91	0	0
bit 4	0	0	bit 48	4	0	bit 92	0	0
bit 5	1189	327	bit 49	0	0	bit 93	0	0
bit 6	13184	1840	bit 50	0	0	bit 94	0	0
bit 7	23502	2294	bit 51	0	0	bit 95	0	0
bit 8	26457	2320	bit 52	0	0	bit 96	0	0
bit 9	19342	2323	bit 53	0	0	bit 97	0	0
bit 10	24467	2323	bit 54	0	0	bit 98	0	0
bit 11	112	186	bit 55	0	0	bit 99	0	0
bit 12	8377	1709	bit 56	0	0	bit 100	0	0
bit 13	22031	2309	bit 57	0	0	bit 101	0	0
bit 14	26621	2323	bit 58	0	0	bit 102	0	0
bit 15	27422	2323	bit 59	0	0	bit 103	0	0
bit 16	0	0	bit 60	0	0	bit 104	0	0
bit 17	2990	411	bit 61	0	0	bit 105	0	0
bit 18	6	1	bit 62	0	0	bit 106	0	0
bit 19	408	115	bit 63	0	0	bit 107	0	0
bit 20	7280	970	bit 64	0	0	bit 108	0	0
bit 21	19508	1868	bit 65	0	0	bit 109	0	0
bit 22	24478	2187	bit 66	0	0	bit 110	0	0
bit 23	321	646	bit 67	0	0	bit 111	0	0
bit 24	7943	2233	bit 68	0	0	bit 112	0	0
bit 25	89	0	bit 69	0	0	bit 113	1240	27
bit 26	771	27	bit 70	0	0	bit 114	4	0
bit 27	0	0	bit 71	0	0	bit 115	4	0
bit 28	0	0	bit 72	0	0	bit 116	0	0
bit 29	0	0	bit 73	0	0	bit 117	1557	28
bit 30	0	0	bit 74	0	0	bit 118	0	0
bit 31	620	23	bit 75	0	0	bit 119	0	0
bit 32	2280	287	bit 76	0	0	bit 120	0	0
bit 33	240	0	bit 77	0	0	bit 121	34	0
bit 34	1890	139	bit 78	0	0	bit 122	142	2
bit 35	5308	523	bit 79	0	0	bit 123	0	0
bit 36	8	0	bit 80	0	0	bit 124	0	0
bit 37	183	11	bit 81	0	0	bit 125	0	0
bit 38	3485	222	bit 82	0	0	bit 126	211	2
bit 39	12513	1135	bit 83	0	0	bit 127	324	1
bit 40	9	0	bit 84	0	0	bit 128	121	1
bit 41	19	0	bit 85	0	0	bit 129	314	14
bit 42	175	16	bit 86	0	0	bit 130	233	14
bit 43	29	0	bit 87	0	0	bit 131	476	13
bit 44	407	9	bit 88	0	0	bit 132	5	0

	ZINC	ZINClick
bit 133	3	0
bit 134	53	0
bit 135	834	27
bit 136	58	0
bit 137	16533	2320
bit 138	16	0
bit 139	11	0
bit 140	51	0
bit 141	1	0
bit 142	1	0
bit 143	0	0
bit 144	84	0
bit 145	3	0
bit 146	6419	2013
bit 147	7495	1446
bit 148	5475	1345
bit 149	1941	90
bit 150	9161	1838
bit 151	7659	1761
bit 152	22	2
bit 153	84	137
bit 154	1	0
bit 155	1539	1111
bit 156	1649	709
bit 157	941	667
bit 158	704	15
bit 159	2089	827
bit 160	1302	700
bit 161	11	31
bit 162	6	20
bit 163	0	0
bit 164	330	300
bit 165	233	161
bit 166	81	137
bit 167	144	12
bit 168	197	185
bit 169	13	0
bit 170	2	3
bit 171	2	1
bit 172	0	0
bit 173	48	54
bit 174	28	27
bit 175	8	18
bit 176	60	12
bit 177	5863	578
bit 178	4822	367

	ZINC	ZINClick
bit 179	2980	543
bit 180	2861	527
bit 181	8691	1206
bit 182	18098	1900
bit 183	3	3
bit 184	0	2
bit 185	1313	130
bit 186	1052	101
bit 187	1435	76
bit 188	203	58
bit 189	192	57
bit 190	3029	633
bit 191	9250	1201
bit 192	6974	661
bit 193	1654	330
bit 194	264	18
bit 195	214	16
bit 196	885	46
bit 197	9	6
bit 198	9	6
bit 199	663	253
bit 200	3873	670
bit 201	17	7
bit 202	606	126
bit 203	86	1
bit 204	75	1
bit 205	650	41
bit 206	1	1
bit 207	1	1
bit 208	110	51
bit 209	10	1
bit 210	15	2
bit 211	1699	73
bit 212	13	0
bit 213	10	0
bit 214	63	3
bit 215	0	0
bit 216	0	0
bit 217	0	0
bit 218	0	0
bit 219	1	0
bit 220	270	0
bit 221	1058	21
bit 222	820	21
bit 223	425	7
bit 224	11	1

	ZINC	ZINClick
bit 225	992	58
bit 226	218	17
bit 227	203	17
bit 228	2	0
bit 229	2515	152
bit 230	132	0
bit 231	97	0
bit 232	93	0
bit 233	118	0
bit 234	678	52
bit 235	3	0
bit 236	2	0
bit 237	1	0
bit 238	870	57
bit 239	1124	53
bit 240	878	38
bit 241	1669	337
bit 242	1469	331
bit 243	321	15
bit 244	1060	203
bit 245	911	188
bit 246	13	0
bit 247	4443	860
bit 248	163	0
bit 249	15394	2194
bit 250	896	36
bit 251	708	29
bit 252	352	11
bit 253	429	122
bit 254	353	105
bit 255	421	62
bit 256	2896	333
bit 257	0	0
bit 258	0	0
bit 259	0	0
bit 260	0	0
bit 261	0	0
bit 262	3412	1079
bit 263	8247	1686
bit 264	11074	1974
bit 265	0	0
bit 266	0	0
bit 267	0	0
bit 268	0	0
bit 269	0	0
bit 270	0	0

	ZINC	ZINClick
bit 271	0	0
bit 272	0	0
bit 273	0	0
bit 274	0	0
bit 275	0	0
bit 276	0	3
bit 277	0	0
bit 278	0	3
bit 279	0	0
bit 280	0	0
bit 281	2987	411
bit 282	22987	2126
bit 283	24391	2323
bit 284	27116	2323
bit 285	26994	2323
bit 286	0	0
bit 287	0	0
bit 288	0	0
bit 289	0	0
bit 290	5290	523
bit 291	12145	1113
bit 292	461	21
bit 293	0	0
bit 294	0	0
bit 295	0	0
bit 296	0	0
bit 297	0	0
bit 298	6	0
bit 299	4287	444
bit 300	8856	2323
bit 301	14845	1691
bit 302	174	16
bit 303	2585	193
bit 304	0	0
bit 305	0	0
bit 306	0	0
bit 307	12	0
bit 308	4548	863
bit 309	3	0
bit 310	14	0
bit 311	3063	259
bit 312	293	4
bit 313	0	0
bit 314	0	0
bit 315	0	0
bit 316	1	0

	ZINC	ZINClick
bit 317	0	0
bit 318	632	27
bit 319	0	0
bit 320	0	0
bit 321	2529	192
bit 322	0	0
bit 323	0	0
bit 324	3	0
bit 325	21	0
bit 326	0	0
bit 327	0	0
bit 328	0	0
bit 329	7134	431
bit 330	3217	187
bit 331	17998	1732
bit 332	25902	2319
bit 333	125	13
bit 334	1792	143
bit 335	359	36
bit 336	2017	131
bit 337	666	17
bit 338	5138	509
bit 339	11412	1290
bit 340	15087	2294
bit 341	3694	458
bit 342	5089	550
bit 343	1779	186
bit 344	1635	64
bit 345	23797	2323
bit 346	171	16
bit 347	5937	595
bit 348	226	16
bit 349	483	61
bit 350	10634	1274
bit 351	15829	2322
bit 352	26502	2323
bit 353	1795	240
bit 354	8419	1842
bit 355	4219	1599
bit 356	8228	1212
bit 357	13392	2101
bit 358	0	0
bit 359	10330	1011
bit 360	22159	2097
bit 361	741	91
bit 362	12915	1533

	ZINC	ZINClick
bit 363	17510	2322
bit 364	851	144
bit 365	2053	265
bit 366	3463	428
bit 367	693	17
bit 368	541	0
bit 369	10902	1492
bit 370	17178	1581
bit 371	3556	1624
bit 372	2594	1550
bit 373	10588	1495
bit 374	12002	2089
bit 375	0	0
bit 376	7025	691
bit 377	5520	581
bit 378	3055	448
bit 379	5141	810
bit 380	8005	976
bit 381	5822	907
bit 382	1635	404
bit 383	4516	903
bit 384	9718	2016
bit 385	8935	1056
bit 386	20043	2294
bit 387	3948	590
bit 388	307	68
bit 389	6945	1793
bit 390	764	216
bit 391	1108	206
bit 392	12258	1660
bit 393	1574	246
bit 394	3543	1028
bit 395	1412	250
bit 396	7110	1721
bit 397	4085	442
bit 398	3334	1025
bit 399	14612	1681
bit 400	9683	1490
bit 401	437	22
bit 402	4133	841
bit 403	12288	1484
bit 404	134	27
bit 405	5830	973
bit 406	29	0
bit 407	1958	222
bit 408	759	172

	ZINC	ZINClick
bit 409	0	0
bit 410	3442	341
bit 411	180	167
bit 412	8393	901
bit 413	521	23
bit 414	182	6
bit 415	1323	191
bit 416	18	8
bit 417	3064	414
bit 418	5830	2253
bit 419	5708	593
bit 420	17981	1712
bit 421	2408	138
bit 422	15270	2320
bit 423	377	64
bit 424	19081	2242
bit 425	6631	2257
bit 426	11045	1455
bit 427	2325	138
bit 428	198	2
bit 429	371	64
bit 430	0	0
bit 431	515	27
bit 432	53	0
bit 433	9850	809
bit 434	4047	872
bit 435	8696	1891
bit 436	620	106
bit 437	3899	2316
bit 438	14046	1746
bit 439	127	4
bit 440	3831	478
bit 441	5055	2316
bit 442	16174	2205
bit 443	3577	1673
bit 444	157	4
bit 445	16354	1591
bit 446	13115	2320
bit 447	18570	2214
bit 448	5998	805
bit 449	1932	13
bit 450	2893	412
bit 451	10612	2262
bit 452	6961	901
bit 453	11933	1035
bit 454	8158	1414

	ZINC	ZINClick
bit 455	12098	2076
bit 456	766	122
bit 457	29	0
bit 458	2185	205
bit 459	2055	815
bit 460	242	58
bit 461	3575	353
bit 462	449	47
bit 463	3430	341
bit 464	429	23
bit 465	2017	212
bit 466	10893	1505
bit 467	44	0
bit 468	239	38
bit 469	5565	467
bit 470	1447	101
bit 471	2983	258
bit 472	11906	1674
bit 473	1081	78
bit 474	483	169
bit 475	3116	1720
bit 476	3906	618
bit 477	3243	294
bit 478	1499	162
bit 479	2278	243
bit 480	5089	858
bit 481	6034	902
bit 482	2875	335
bit 483	1949	1505
bit 484	4027	681
bit 485	1816	118
bit 486	4545	988
bit 487	186	15
bit 488	3244	359
bit 489	7250	1715
bit 490	1383	250
bit 491	4341	621
bit 492	728	107
bit 493	2873	1521
bit 494	15951	2000
bit 495	4771	414
bit 496	1776	778
bit 497	2809	388
bit 498	7281	1853
bit 499	3316	414
bit 500	3947	461

	ZINC	ZINClick
bit 501	2452	1526
bit 502	5596	737
bit 503	655	157
bit 504	2412	1459
bit 505	1874	99
bit 506	1034	110
bit 507	1712	137
bit 508	3218	286
bit 509	7815	741
bit 510	5089	858
bit 511	393	47
bit 512	3669	574
bit 513	6518	1083
bit 514	2496	152
bit 515	4169	737
bit 516	11691	1544
bit 517	6628	2142
bit 518	3277	227
bit 519	1853	247
bit 520	0	0
bit 521	1161	205
bit 522	471	50
bit 523	0	0
bit 524	15505	1840
bit 525	5600	1688
bit 526	2425	178
bit 527	4138	1180
bit 528	10893	1505
bit 529	13137	1403
bit 530	276	30
bit 531	2174	235
bit 532	3793	479
bit 533	4915	502
bit 534	4741	937
bit 535	568	51
bit 536	7335	920
bit 537	1089	227
bit 538	3323	571
bit 539	4462	642
bit 540	14710	1981
bit 541	9124	2313
bit 542	10791	2269
bit 543	2185	205
bit 544	4648	567
bit 545	785	59
bit 546	4219	485

	ZINC	ZINClick
bit 547	9217	1513
bit 548	5781	1019
bit 549	2711	1544
bit 550	6076	1799
bit 551	8438	1875
bit 552	689	83
bit 553	1416	128
bit 554	2037	351
bit 555	167	7
bit 556	15951	2000
bit 557	7465	1467
bit 558	2183	166
bit 559	7428	884
bit 560	10771	1470
bit 561	2729	397
bit 562	6967	1079
bit 563	3115	553
bit 564	11717	1624
bit 565	1420	150
bit 566	231	10
bit 567	467	21
bit 568	8239	1001
bit 569	656	107
bit 570	5165	758
bit 571	7634	1139
bit 572	3383	562
bit 573	2142	414
bit 574	12110	1807
bit 575	6704	1686
bit 576	2135	138
bit 577	273	37
bit 578	19270	2019
bit 579	2139	240
bit 580	4326	508
bit 581	10310	1109
bit 582	9958	1373
bit 583	1857	646
bit 584	3960	988
bit 585	3712	416
bit 586	905	121
bit 587	2971	460
bit 588	1104	100
bit 589	183	36
bit 590	6025	672
bit 591	6132	1621
bit 592	10101	1407

	ZINC	ZINClick
bit 593	13412	1991
bit 594	3011	386
bit 595	3529	505
bit 596	5720	897
bit 597	10582	1590
bit 598	5133	849
bit 599	5655	1103
bit 600	16333	1946
bit 601	7663	1218
bit 602	3930	557
bit 603	1639	170
bit 604	3825	737
bit 605	10241	1390
bit 606	3294	412
bit 607	2671	521
bit 608	6174	1001
bit 609	4730	759
bit 610	8221	1023
bit 611	15371	2016
bit 612	2460	494
bit 613	5982	1581
bit 614	1184	142
bit 615	957	81
bit 616	10582	1590
bit 617	3578	497
bit 618	287	33
bit 619	2457	456
bit 620	1867	383
bit 621	6503	884
bit 622	9199	1299
bit 623	3400	747
bit 624	1903	230
bit 625	157	20
bit 626	613	78
bit 627	771	81
bit 628	6960	1225
bit 629	0	0
bit 630	2971	460
bit 631	661	85
bit 632	1878	343
bit 633	1998	361
bit 634	4999	943
bit 635	12036	1456
bit 636	4937	669
bit 637	1909	191
bit 638	10738	1475

	ZINC	ZINClick
bit 639	8011	1188
bit 640	1867	383
bit 641	2799	259
bit 642	6275	702
bit 643	8451	841
bit 644	4579	352
bit 645	9963	1013
bit 646	2139	240
bit 647	6023	908
bit 648	13425	1735
bit 649	5119	795
bit 650	7590	923
bit 651	385	63
bit 652	1220	228
bit 653	3795	544
bit 654	1366	127
bit 655	178	36
bit 656	777	188
bit 657	901	218
bit 658	2389	364
bit 659	1305	148
bit 660	13736	1692
bit 661	5304	709
bit 662	4335	466
bit 663	6132	1621
bit 664	13067	1760
bit 665	5976	742
bit 666	1590	136
bit 667	312	12
bit 668	10738	1475
bit 669	1460	302
bit 670	5133	849
bit 671	6784	1399
bit 672	10900	1528
bit 673	15780	1727
bit 674	13736	1692
bit 675	10101	1407
bit 676	1415	93
bit 677	1562	128
bit 678	3122	719
bit 679	2963	425
bit 680	4414	640
bit 681	1527	128
bit 682	1979	182
bit 683	2995	413
bit 684	7459	918

	ZINC	ZINClick
bit 685	13456	1732
bit 686	3457	598
bit 687	1481	231
bit 688	9747	1254
bit 689	2081	360
bit 690	1053	62
bit 691	1697	181
bit 692	5366	650
bit 693	2953	544
bit 694	1625	254
bit 695	7533	1007
bit 696	11453	1299
bit 697	1080	301
bit 698	2114	394
bit 699	1101	164
bit 700	1209	167
bit 701	2642	266
bit 702	4882	653
bit 703	5532	622
bit 704	7034	978
bit 705	2846	166
bit 706	12220	1267
bit 707	12542	1272
bit 708	14816	1427
bit 709	706	175
bit 710	429	31
bit 711	816	102
bit 712	4369	512
bit 713	191	23
bit 714	314	27
bit 715	680	105
bit 716	726	175
bit 717	452	87
bit 718	971	144
bit 719	756	171
bit 720	4776	469
bit 721	124	0
bit 722	303	26
bit 723	243	40
bit 724	26	10
bit 725	225	16
bit 726	333	28
bit 727	370	65
bit 728	146	15
bit 729	886	125
bit 730	971	193

	ZINC	ZINClick
bit 731	30	0
bit 732	22	0
bit 733	167	5
bit 734	222	30
bit 735	413	46
bit 736	267	100
bit 737	189	15
bit 738	294	73
bit 739	121	13
bit 740	307	57
bit 741	505	40
bit 742	636	96
bit 743	787	182
bit 744	414	50
bit 745	119	15
bit 746	454	59
bit 747	299	101
bit 748	55	5
bit 749	174	10
bit 750	244	31
bit 751	34	3
bit 752	116	6
bit 753	692	62
bit 754	961	258
bit 755	447	55
bit 756	943	122
bit 757	1269	202
bit 758	111	0
bit 759	95	0
bit 760	495	48
bit 761	323	66
bit 762	18	0
bit 763	204	5
bit 764	336	36
bit 765	366	65
bit 766	117	13
bit 767	597	79
bit 768	228	10
bit 769	22	0
bit 770	25	0
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bit 772	127	14
bit 773	353	26
bit 774	509	113
bit 775	34	0
bit 776	170	3

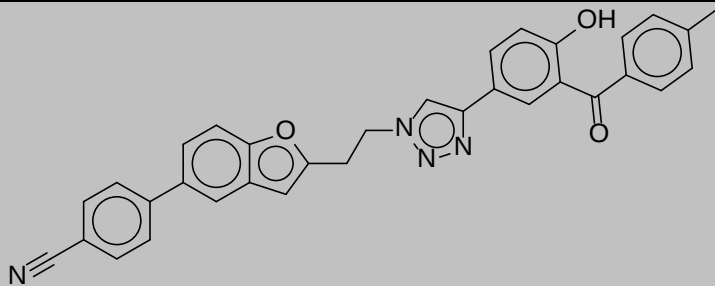
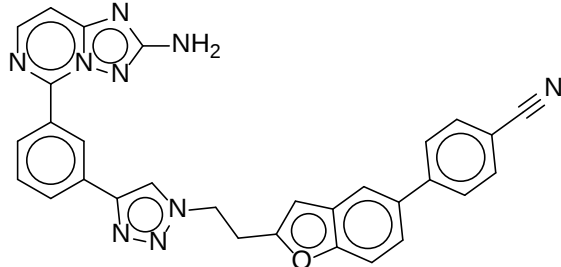
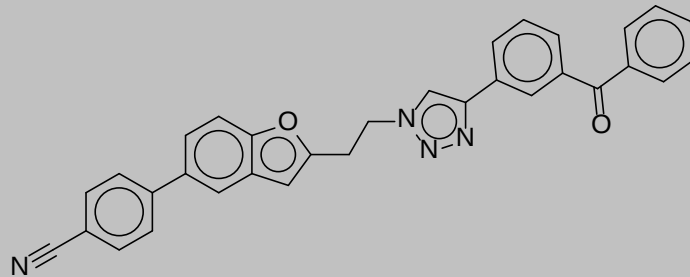
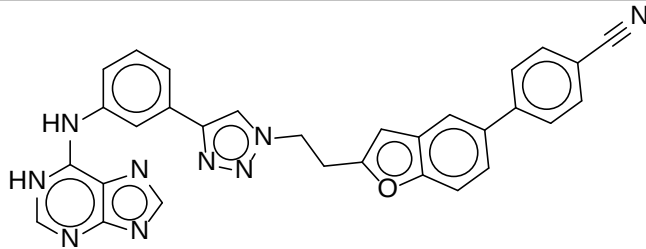
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bit 778	248	26
bit 779	344	27
bit 780	709	105
bit 781	1010	196
bit 782	532	87
bit 783	1330	185
bit 784	1611	201
bit 785	299	103
bit 786	125	0
bit 787	304	26
bit 788	249	40
bit 789	31	10
bit 790	230	16
bit 791	337	28
bit 792	463	78
bit 793	552	50
bit 794	1482	142
bit 795	2479	251
bit 796	31	0
bit 797	23	0
bit 798	173	5
bit 799	225	30
bit 800	414	54
bit 801	121	6
bit 802	197	15
bit 803	354	86
bit 804	130	13
bit 805	395	60
bit 806	571	40
bit 807	693	96
bit 808	1351	196
bit 809	504	48
bit 810	123	15
bit 811	459	59
bit 812	348	111
bit 813	55	5
bit 814	175	10
bit 815	254	31
bit 816	40	3
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bit 818	734	62
bit 819	1429	282
bit 820	617	56
bit 821	1498	142
bit 822	2115	234

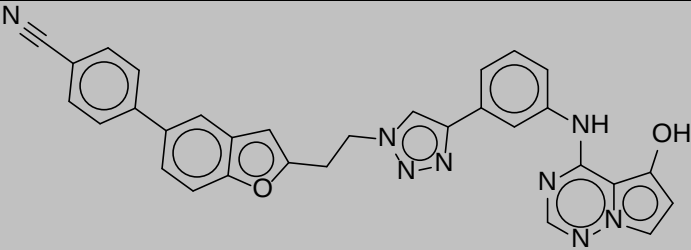
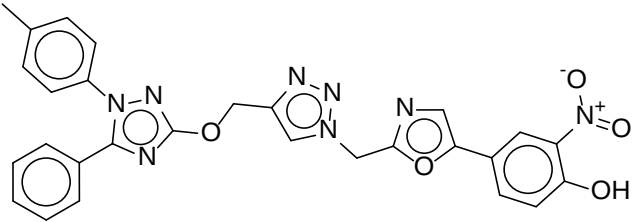
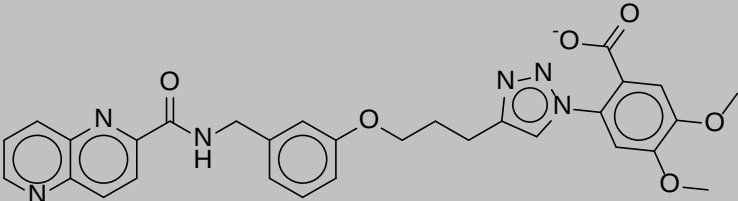
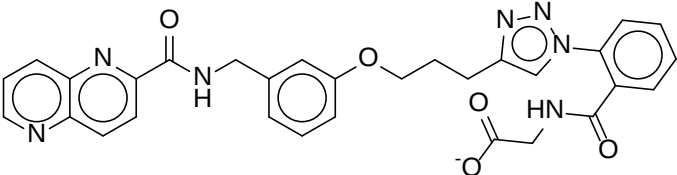
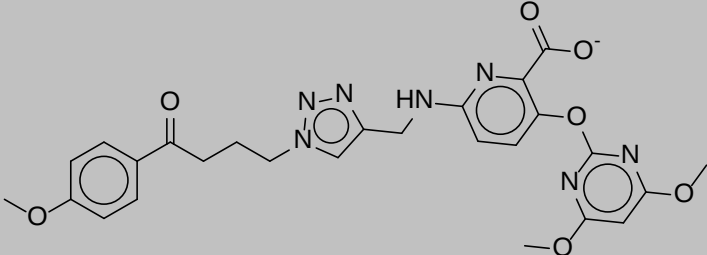
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bit 825	177	3
bit 826	388	66
bit 827	24	0
bit 828	216	5
bit 829	348	44
bit 830	449	71
bit 831	140	13
bit 832	702	82
bit 833	1021	43
bit 834	32	0
bit 835	25	0
bit 836	380	49
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bit 838	358	26
bit 839	603	128
bit 840	37	0
bit 841	28	1
bit 842	5	0

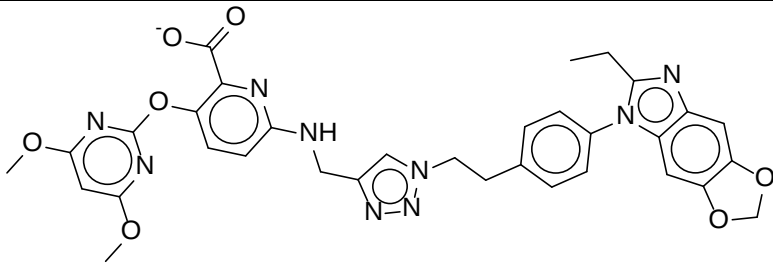
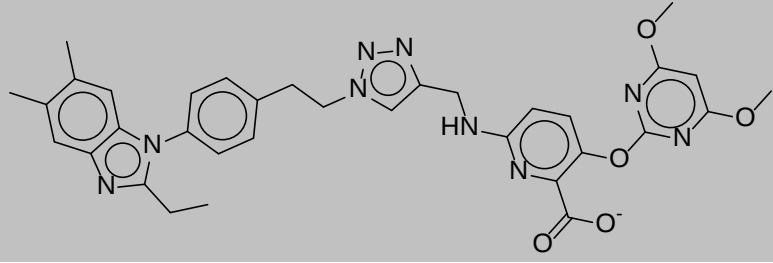
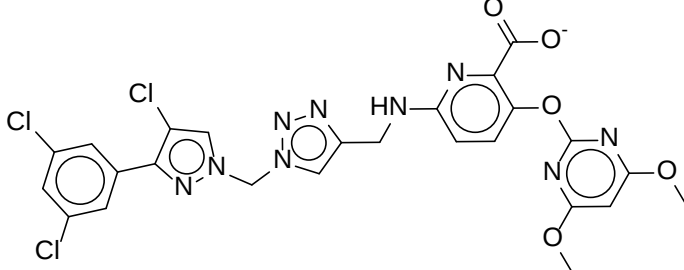
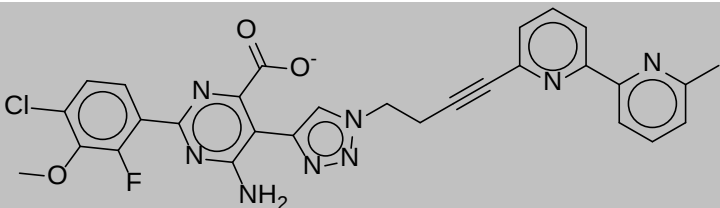
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bit 845	62	0
bit 846	344	23
bit 847	81	3
bit 848	378	9
bit 849	2	0
bit 850	13	4
bit 851	3	0
bit 852	1	0
bit 853	18	3
bit 854	1	0
bit 855	4	0
bit 856	8	0
bit 857	347	18
bit 858	115	3
bit 859	370	9
bit 860	1083	62
bit 861	1	0
bit 862	1	0

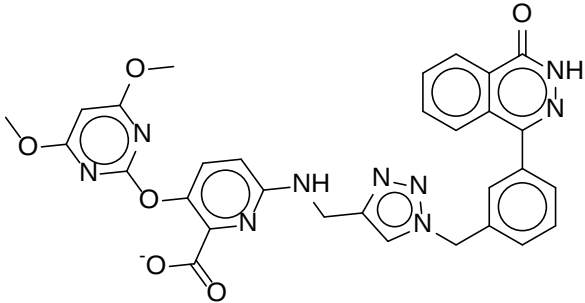
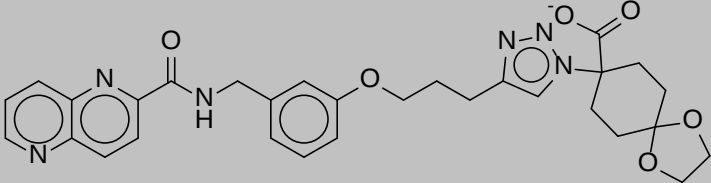
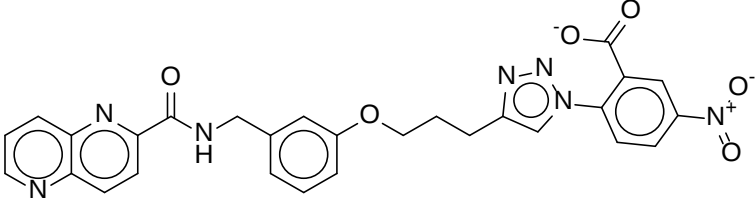
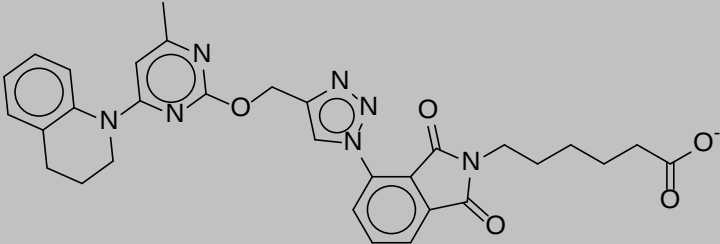
	ZINC	ZINClick
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bit 864	3	0
bit 865	8	0
bit 866	15	0
bit 867	13	0
bit 868	89	4
bit 869	11	0
bit 870	44	0
bit 871	52	0
bit 872	58	0
bit 873	0	0
bit 874	17	0
bit 875	8	0
bit 876	0	0
bit 877	42	6
bit 878	1	0
bit 879	8	0
bit 880	21	0
bit 881	0	0

Table S5. Detail of top-ranking hit compounds from Case study 1. (n.e.: not evaluated)

Compound	Rank	Structure	Name	Shape Tanimoto	Electrostatic Tanimoto
Nrd-click-1	1		Azi690-Alk539	0.766	n.e.
Nrd-click-2	2		Azi690-Alk993	0.764	n.e.
Nrd-click-3	3		Azi690-Alk1058	0.751	n.e.
Nrd-click-4	4		Azi690-Alk575	0.748	n.e.

Compound	Rank	Structure	Name	Shape Tanimoto	Electrostatic Tanimoto
Nrd-click-9	9		Azi690-Alk1632	0.739	n.e.
Nrd-click-10	10		Azi582-Alk3480	0.737	n.e.
Ned-click-1	1		Azi940-Alk3839	0.691	0.638
Ned-click-2	2		Azi945-Alk3839	0.690	0.637
Ned-click-3	3		Azi2054-Alk755	0.683	0.619

Compound	Rank	Structure	Name	Shape Tanimoto	Electrostatic Tanimoto
Ned-click-4	4		Azi664-Alk755	0.686	0.618
Ned-click-5	5		Azi666-Alk755	0.681	0.614
Ned-click-6	6		Azi1908-Alk755	0.696	0.612
Ned-click-7	7		Azi2681-Alk1790	0.655	0.601

Compound	Rank	Structure	Name	Shape Tanimoto	Electrostatic Tanimoto
Ned-click-8	8		Azi1957-Alk755	0.685	0.590
Ned-click-9	9		Azi2527-Alk3839	0.689	0.584
Ned-click-10	10		Azi1191-Alk3839	0.696	0.575
Ned-click-11	11		Azi1333-Alk3556	0.696	0.548

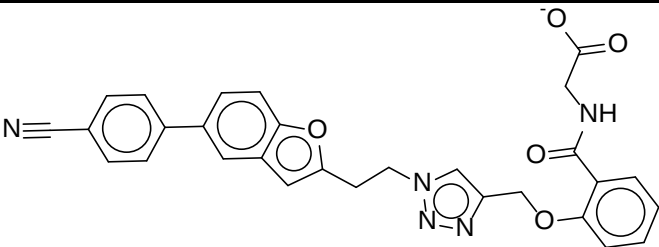
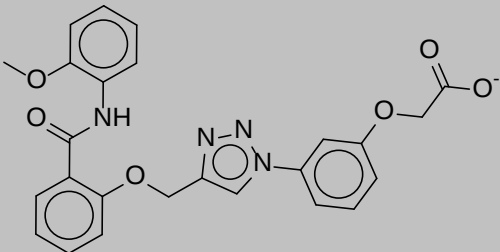
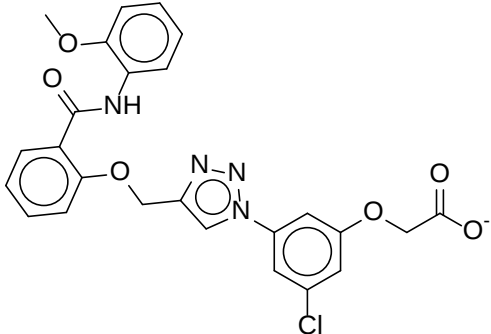
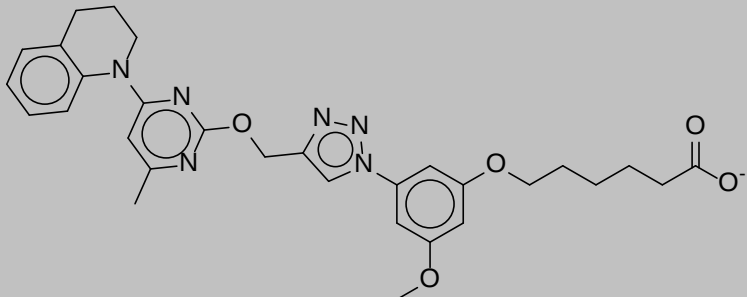
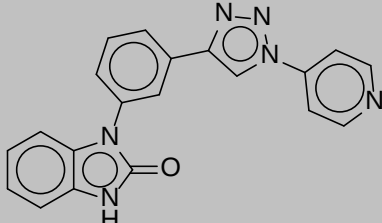
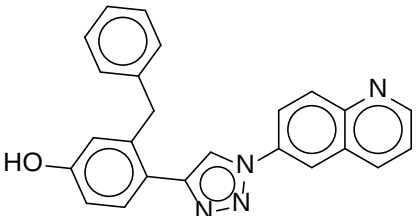
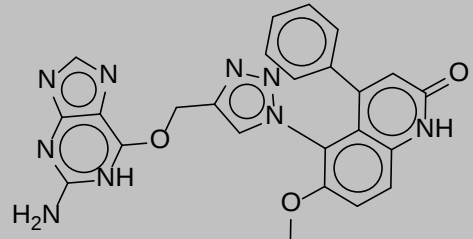
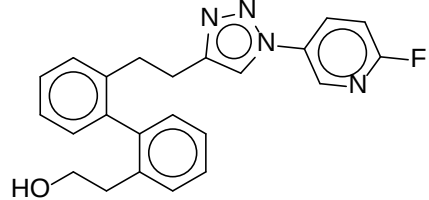
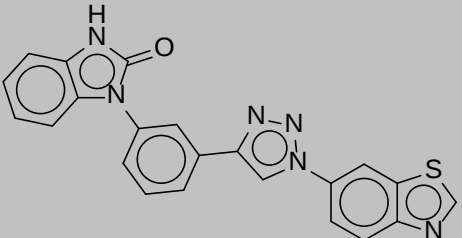
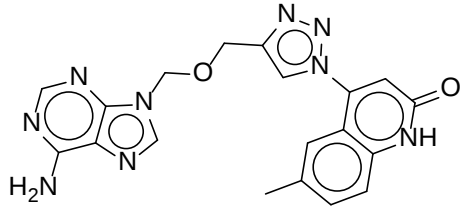
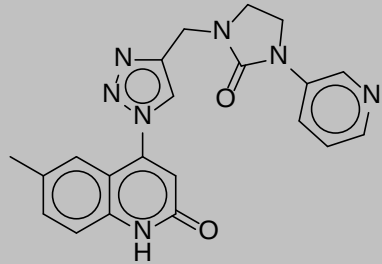
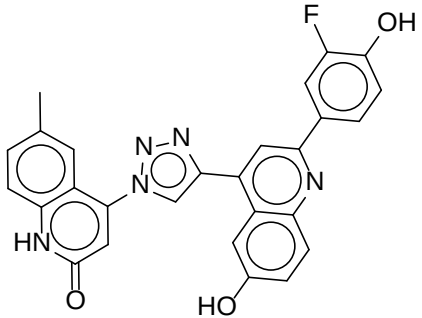
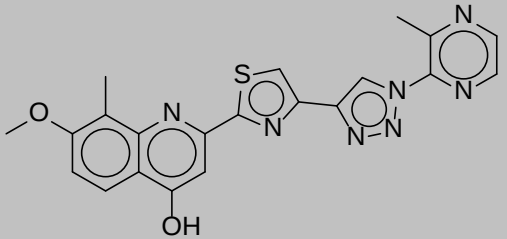
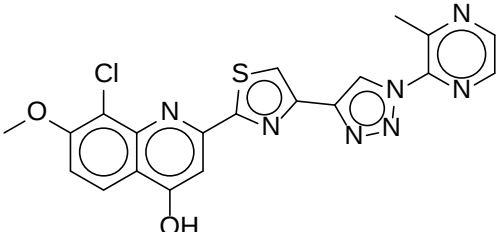
Compound	Rank	Structure	Name	Shape Tanimoto	Electrostatic Tanimoto
Ned-click-12	12		Azi690-Alk3143	0.729	0.545
Ned-click-13	13		Azi1643-Alk3525	0.681	0.523
Ned-click-14	14		Azi1185-Alk3525	0.678	0.511
Ned-click-15	15		Azi2963-Alk3556	0.688	0.506

Table S6. Detail of top-ranking hit compounds from Case study 2.

Compound	Rank	Structure	Name	Chemgauss3
F-click-1	1		Azi2495-Alk1590	-15.12
F-click-2	2		Azi995-Alk1554	-15.05
F-click-3	3		Azi52-Alk653	-15.03
F-click-4	4		Azi2515-Alk3804	-15.00
F-click-5	5		Azi1298-Alk1590	-14.90

Compound	Rank	Structure	Name	Chemgauss3
F-click-6	6		Azi184-Alk2639	-14.87
F-click-7	7		Azi184-Alk3015	-14.87
F-click-8	8		Azi184-Alk1723	-14.86
F-click-9	9		Azi183-Alk3653	-14.86

Compound	Rank	Structure	Name	Chemgauss3
F-click-10	10		Azi183-Alk1781	-14.81

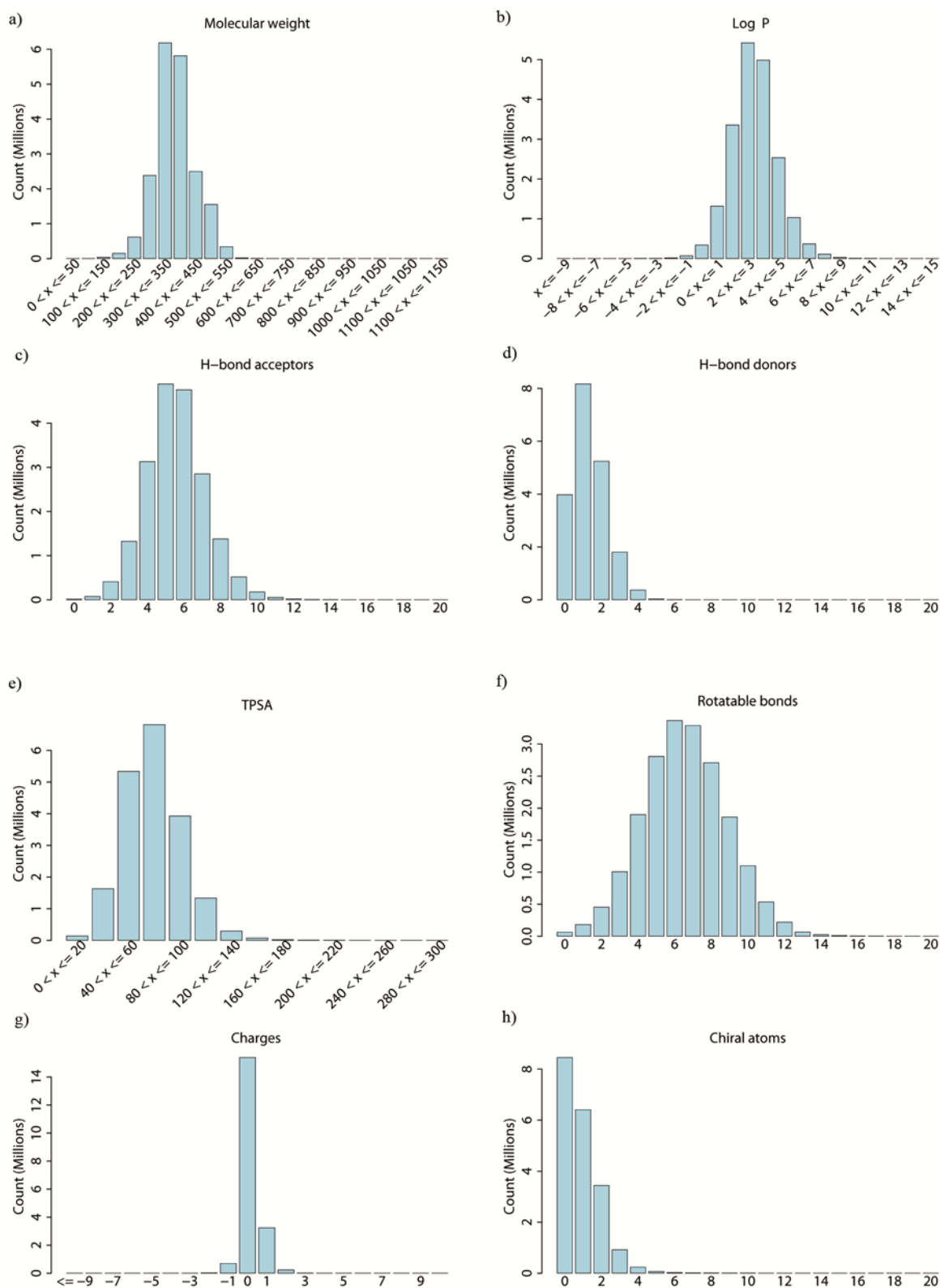


Figure S1. Distribution histograms of the descriptors MW, log P, HBA, HBD, TPSA, rotB, charges and chiral respectively for the compounds in the ZINC database.

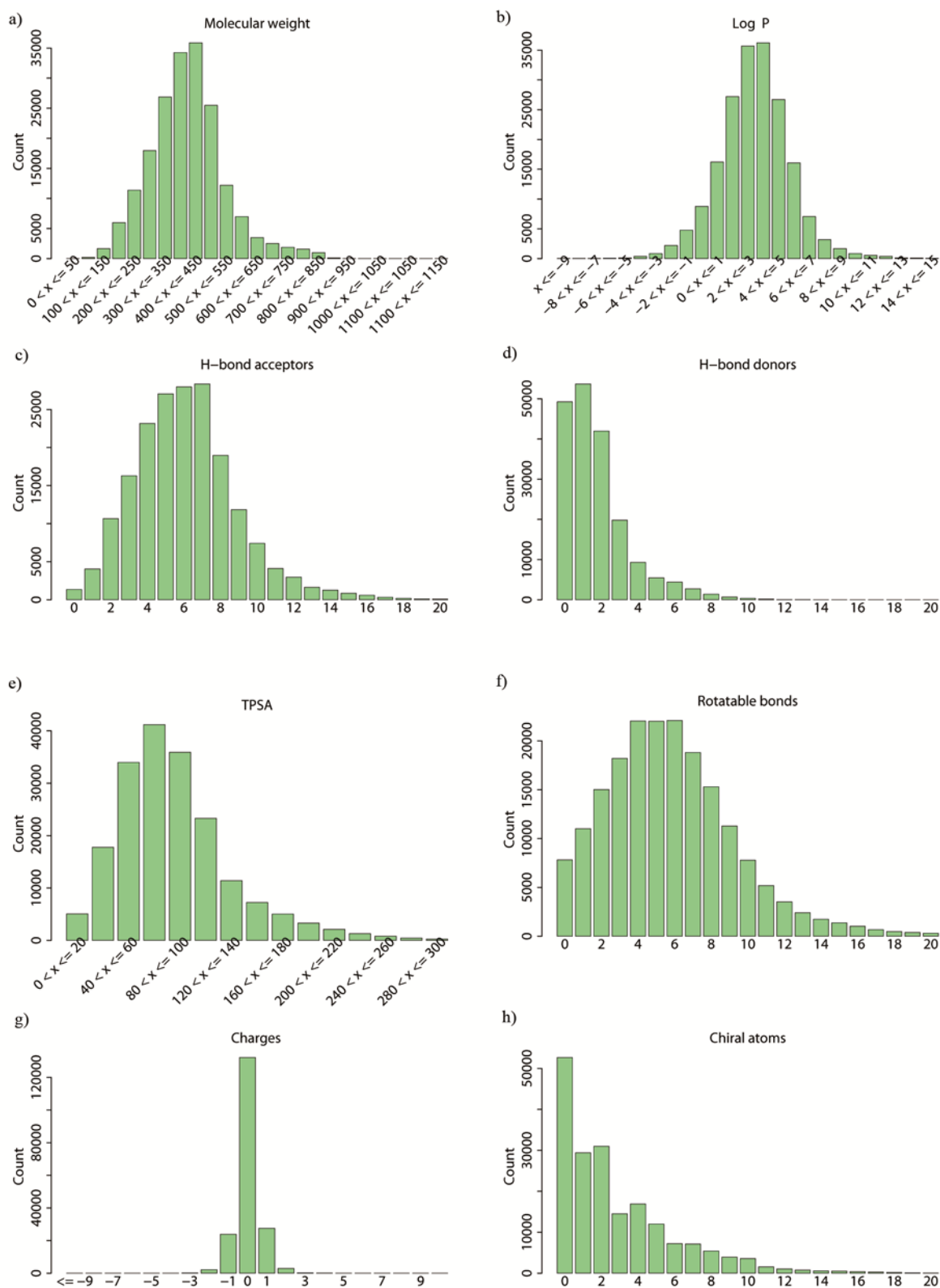


Figure S2. Distribution histograms of the MW, log P, HBA, HBD, TPSA, rotB, charges and chiral respectively for the compounds in the ZINC "Natural products" subset.

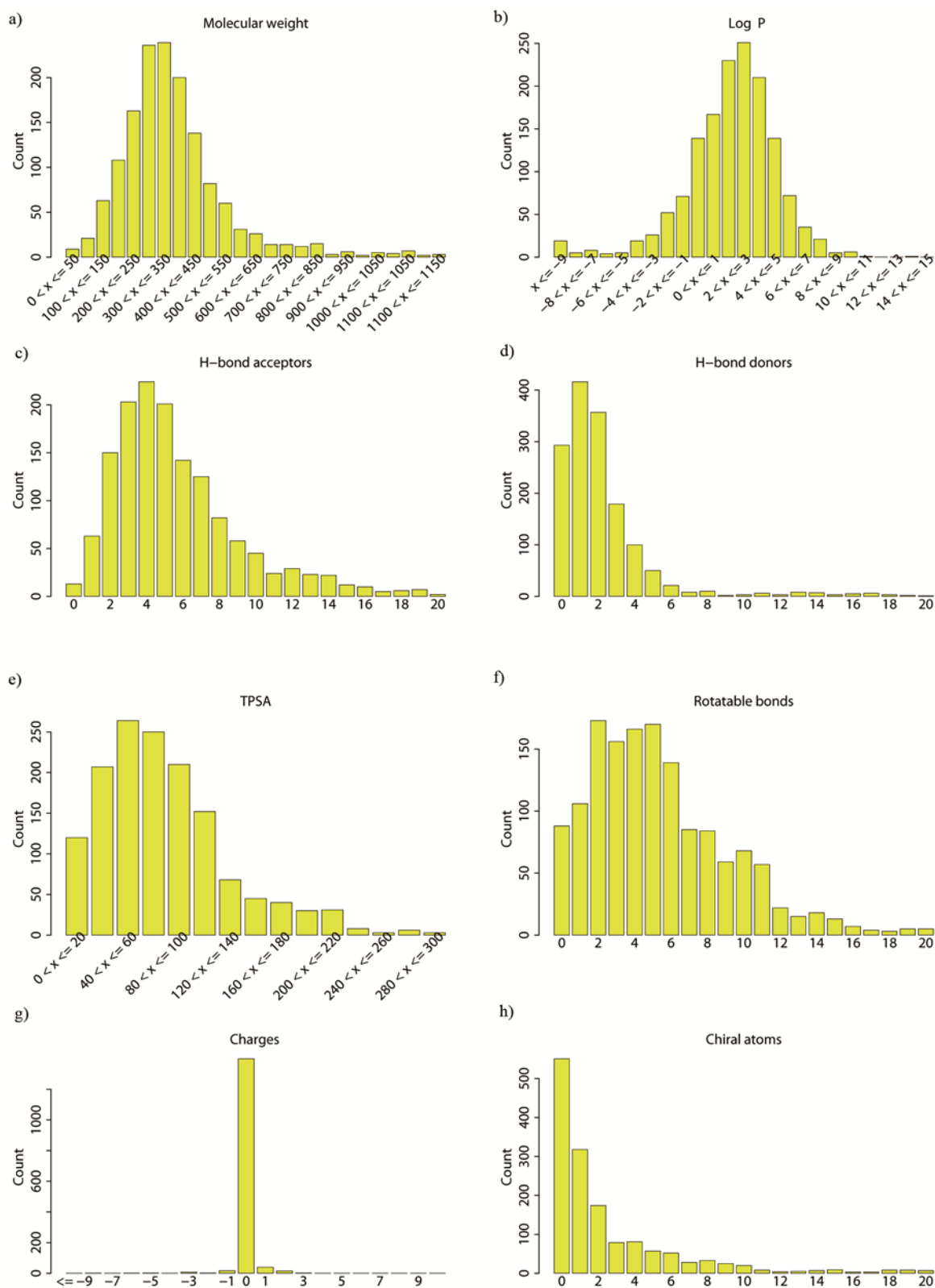


Figure S3. Distribution histograms of the descriptors MW, log P, HBA, HBD, TPSA, rotB, charges and chiral respectively for the compounds in the DrugBank database.

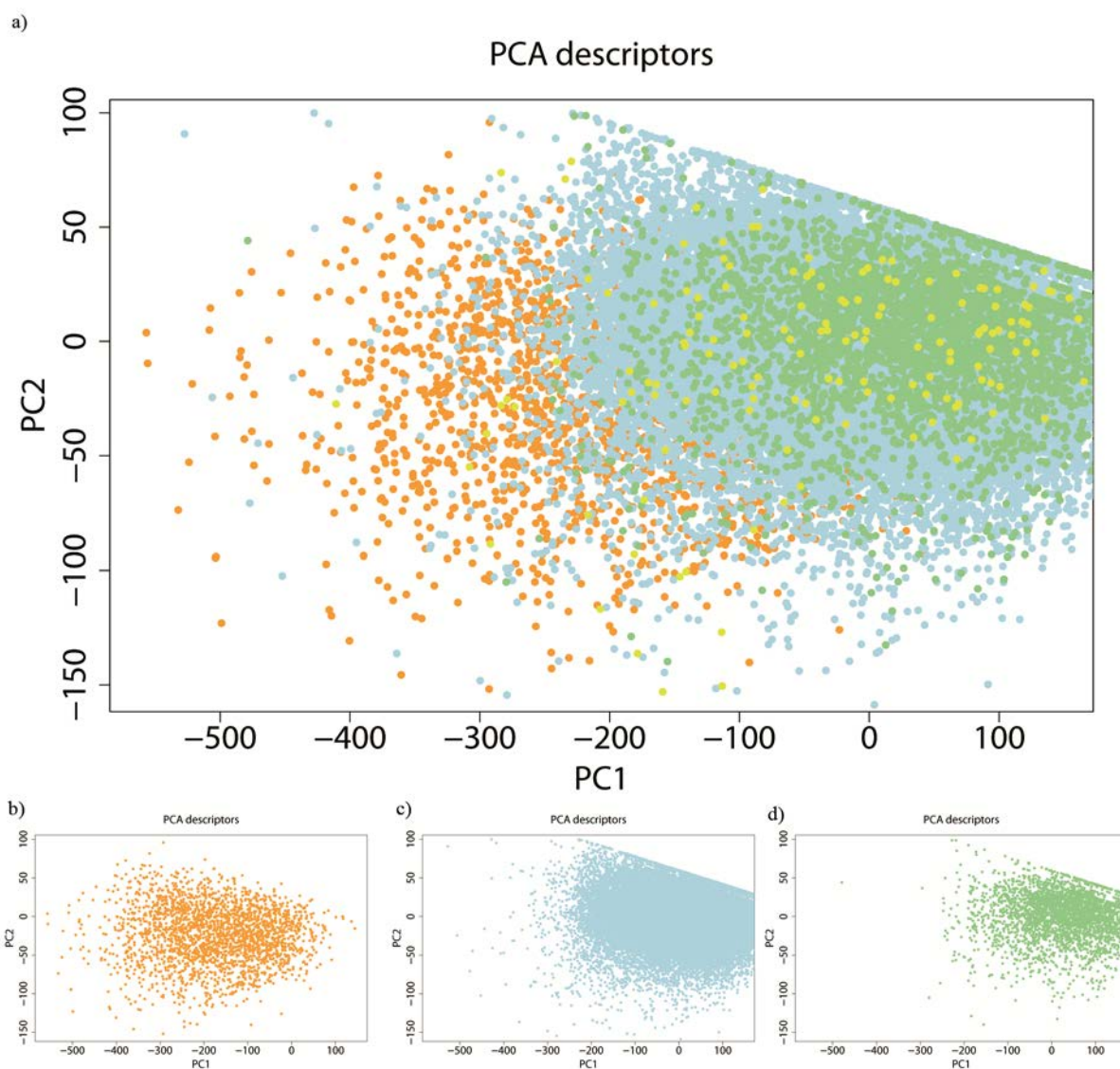


Figure S4. (a) A principal component analysis (PCA) plot, showing the comparison of chemical space defined by the ZINClick database (orange) and the chemical space by ZINC (cyan), ZINC “Natural product” (green) and DrugBank (yellow). The first two principal components accounted for 91.7% and 7.7% of the X-variance. Single plot of ZINClick (b), ZINC (c) and ZINC “Natural” (d) are show for more clarity.

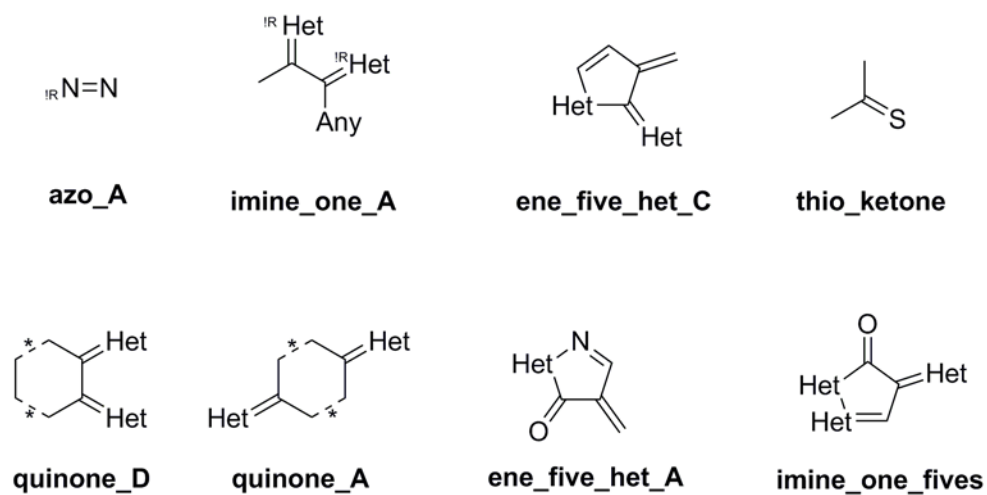


Figure S4. Structures of PAINS structural motifs present in ZINCclick.

References

- (1) FILTER, version 2.0.2; OpenEye Scientific Software, Santa Fe, NM. <http://www.eyesopen.com>
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- (5) Carr, R. A.; Congreve, M.; Murray, C. W.; Rees, D. C. Fragment-based lead discovery: leads by design. *Drug Discov. Today* **2005**, *10*, 987-992.
- (6) Baell, J. B.; Holloway, G. A. New substructure filters for removal of pan assay interference compounds (PAINS) from screening libraries and for their exclusion in bioassays. *J. Med. Chem.* **2010**, *53*, 2719-2740.