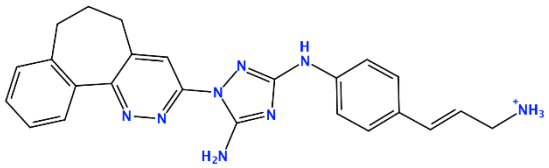
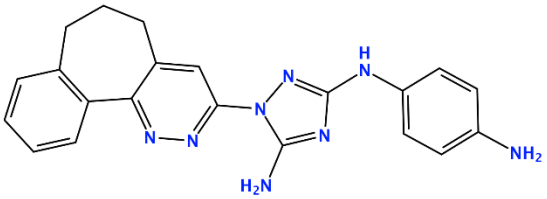
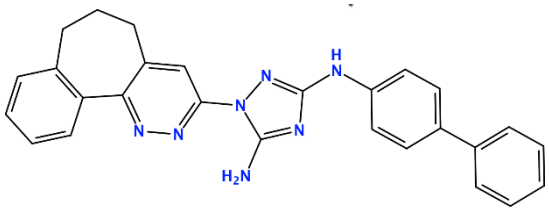
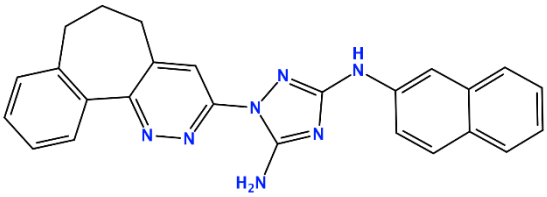
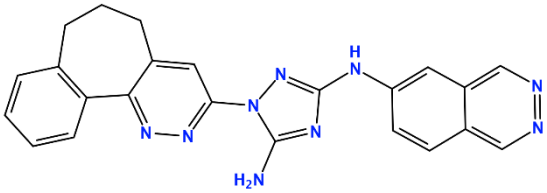
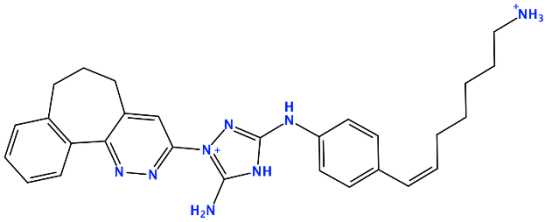
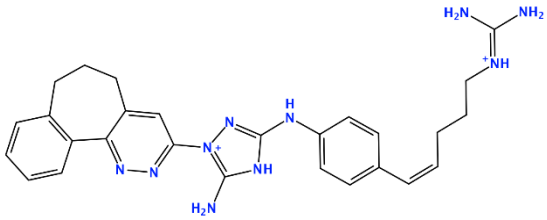
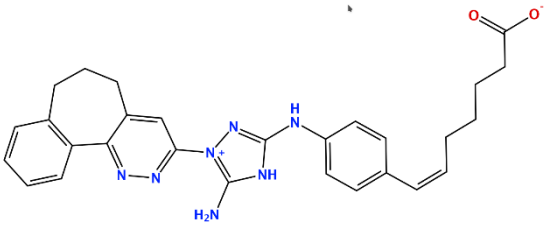
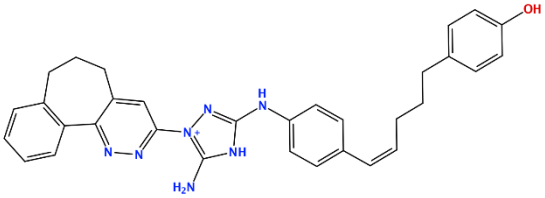
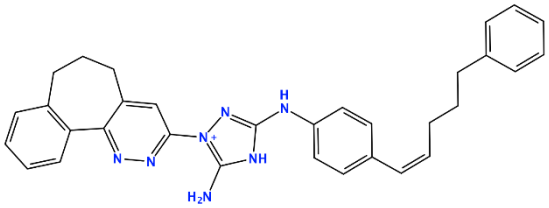
Supplementary Material

Contents:

Table S1. **Docking scores according to GOLD, MOE and AutoDock for modifications of R428_2, R428_3 and R428_4 compounds**.[1]

[1]The modifications of R428_2, R428_3 and R428_4 corresponding to the following PubChem CIDs: 67104254, 67106757 and 67103760, respectively.

Compound No.	**2D Structure**	**Score (GOLD)**	**Score, kcal/mol (MOE)**	**ΔG, kcal/mol**
R1’		67	-6.42	-9.99
R2’		57	-6.71	-8.56
R3’		67	-7.10	-10.24
R4’		65.2	-7.17	-11.49

R5’		58.55	-6.97	-10.84
R6’		83.3	-7.61	-9.11
R7’		83.46	-7.77	-8.94
R8’		82.35	-7.41	-7.76
R9’		85.27	-8.01	-9.92
R10’		85.28	-8.29	-10.34

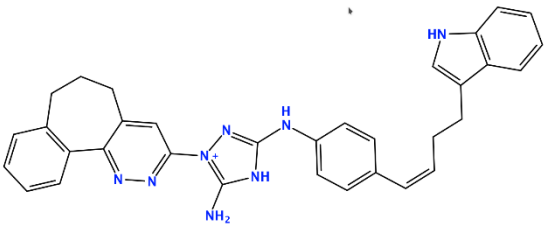
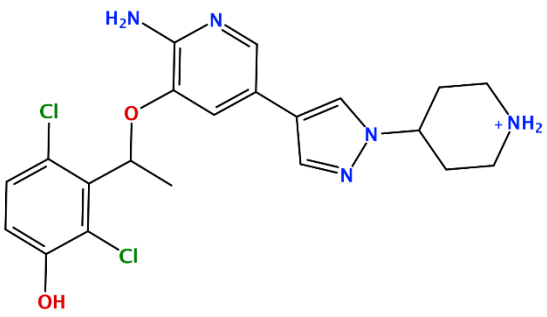
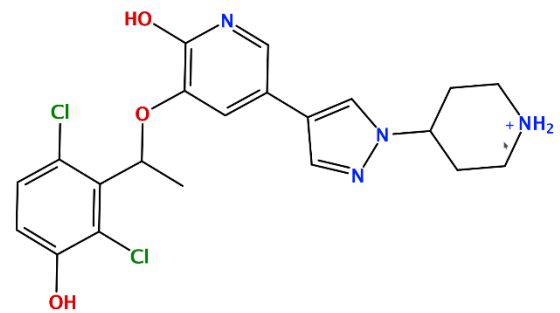
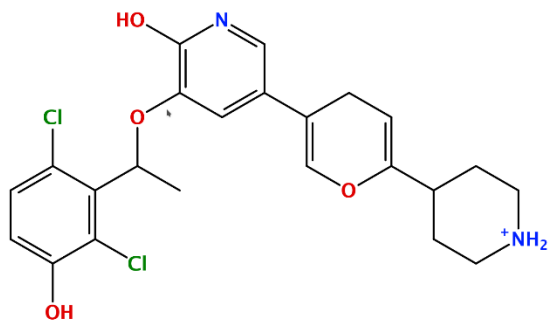
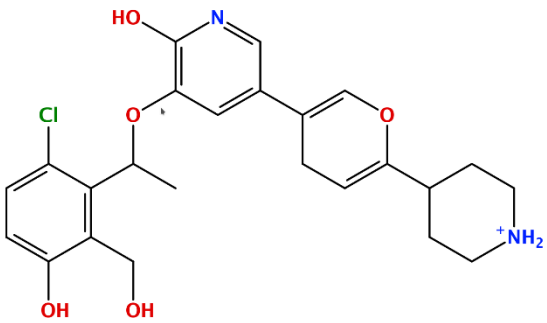
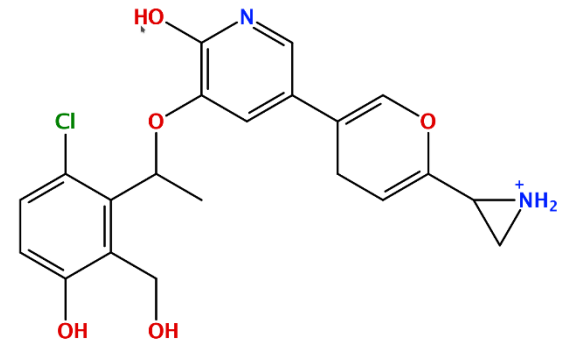
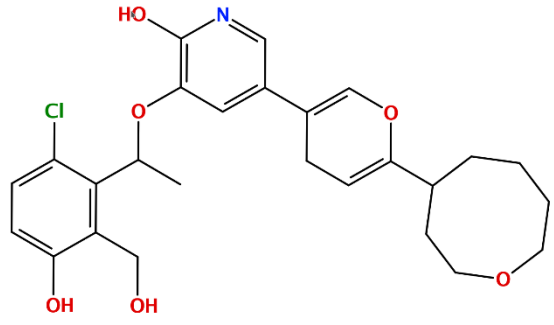
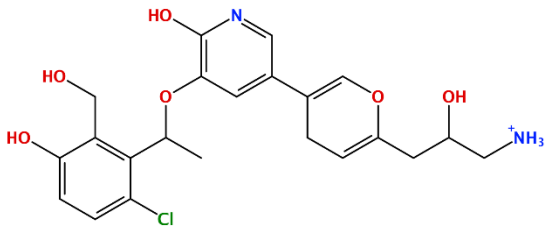
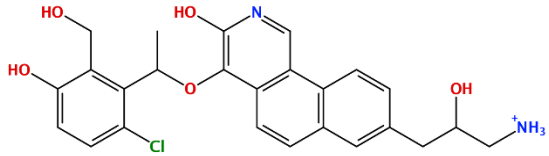
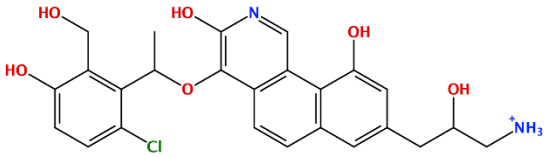
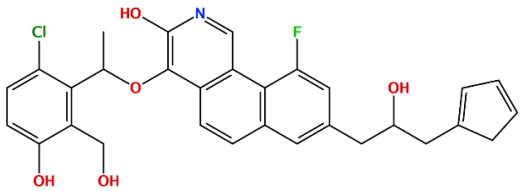
R11’		84.75	-7.52	-9.76

Table S2. Docking scores according to GOLD, MOE and Autodock for the new designed compounds from Crizotinib.

Compound No.	2D Structure	Score (GOLD)	Score, kcal/mol (MOE)	ΔG, kcal/mol
C1		62.04	-7.41	-9.32
C2		64.33	-7.67	-9.82

C3		59.25	-7.05	-9.39
C4		65.78	-6.9	-8.92
C5		60.34	-7.24	-8.62
C6		62.75	-7.97	-8.27

C7		63.06	-7.21	-8.09
C8		63.41	-7.22	-8.76
C9		62.09	-7.23	-8.66
C10		68.35	-7.44	-8.46

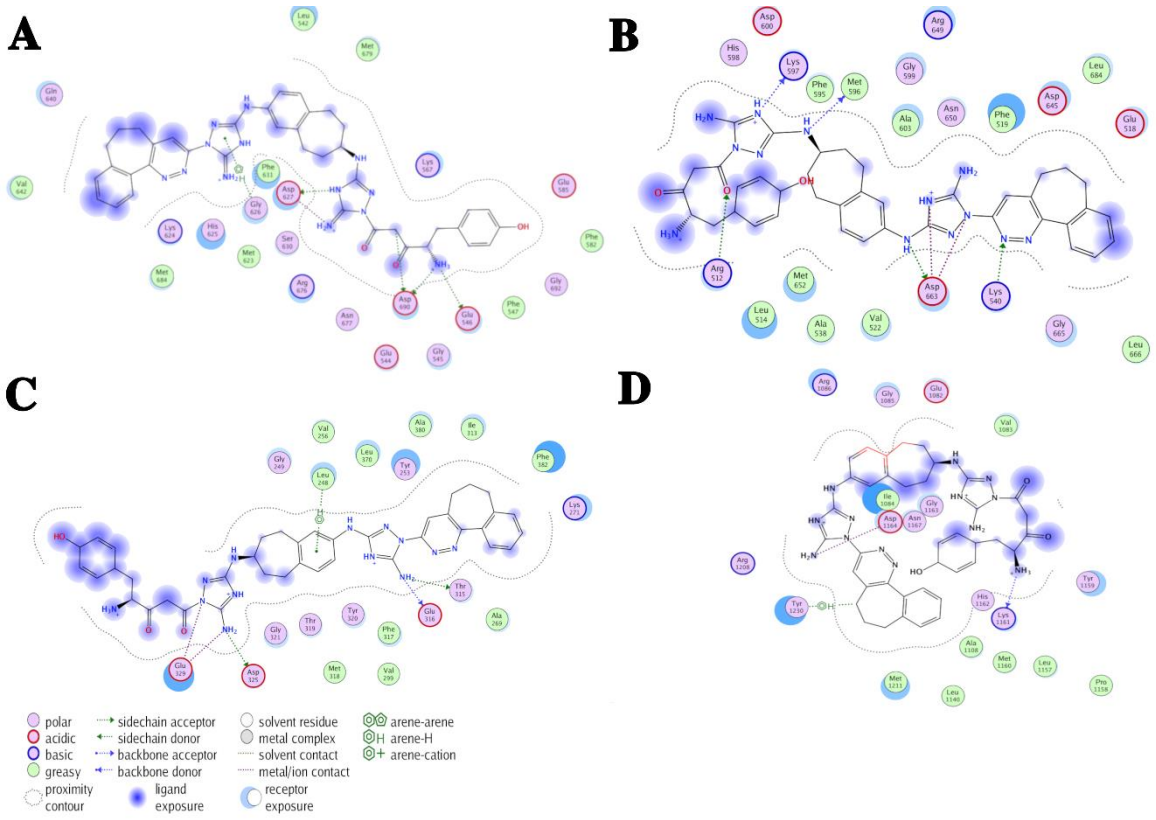


Figure S1. 2D interaction diagrams of designed compound R5 with the binding pockets of Axl (A), Tyro3 (B), ABL1 (C) and Met (D) kinases.

PubChem CIDs for R428 patented analogs:

25123113, 25123764, 25123765, 25123766, 25124093, 25124412, 25124413, 25124416, 25124748, 25126438, 25126441, 25126768, 25126769, 25126770, 25126771, 25127082, 25127084, 25127085, 25127087, 25127411, 25127412, 25127413, 25127729, 25127732, 25128065, 25242518, 44555405, 44608272, 44608274, 44608478, 46843554, 46843555, 46843556, 46843635, 46843636, 46843709, 46843710, 46843711, 46843712, 46843713, 46843779, 46843780, 46843781, 46843782, 46843783, 46843846, 46843849, 46843914, 46843915, 46843916, 46843917, 46843983, 46843984, 46843985, 46844040, 46844043, 46844099, 46844156, 46844158, 46844160, 58247200, 59276159, 66694799, 66694824, 66694833, 66694842, 66694868, 66694872, 66694875, 66694882, 66694895, 66694908, 66694911, 66694913, 66694927, 66694944, 66694947,66694949, 66694955, 66695119, 66695125, 66695128, 37103757, 67103760, 67103793, 67103828, 67103831, 67103892, 67103902, 67103980,

67103984, 67104015, 67104024, 67104046, 67104110, 67104115, 67104119, 67104124, 67104128, 67104199, 67104235, 67104240, 67104245, 67104254, 67104256, 67104272, 67104274, 67104292, 67104295, 67104296, 67104297, 67104298, 67104308, 67104314, 67104315, 67104323, 67104329, 67104341, 67104351, 67104364, 67104375, 67104390, 67201090, 67201627, 67202616, 67202697, 67202721, 67203099, 67262438, 67262504, 67300667, 67537244, 67537596, 68729332, 76714002, 90974101.

PubChem CIDs for Crizotinib patented analogs:

11575401, 11576617, 11597571, 11612136, 11625675, 11647759, 11647760, 11654090, 11656580, 11662380, 11667754, 117071753, 21110756, 21110757, 44256053, 44256477, 54579455, 56671814, 56671943, 66548953, 71621328, 71664254, 71664255, 72199381, 73386634, 76322034.