Journal of Medicinal Chemistry

Addition/Correction

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Correction to Acenaphtho[1,2-*b*]pyrrole-Based Selective Fibroblast Growth Factor Receptors 1 (FGFR1) Inhibitors: Design, Synthesis, and Biological Activity

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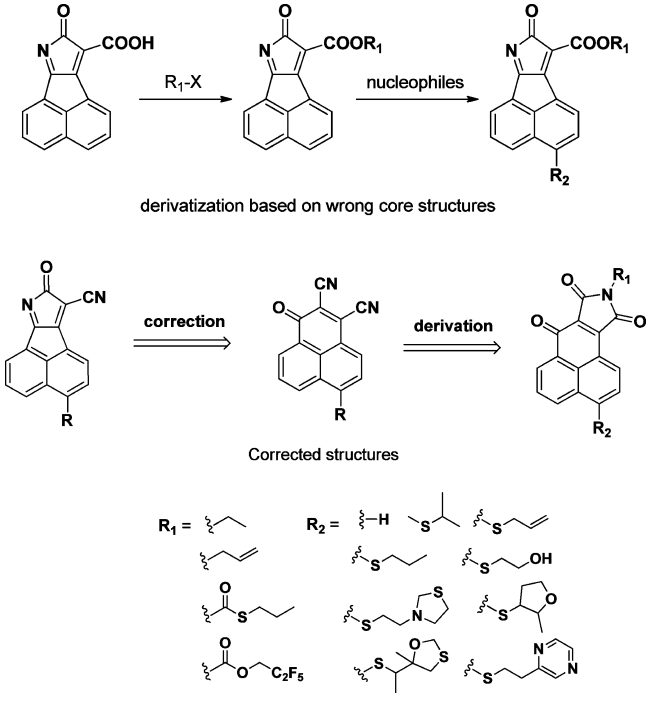
Supporting Information

The scaffold 8-oxo-8*H*-acenaphtho[1,2-*b*]pyrrol-9-carbonitrile was synthesized and reported in 2005. Because of its convenient synthesis and easy derivation, the derivatives were widely applied in the development of ion sensing,[1] biomolecule imaging,[2] tumor diagnosis,[3,4] and antitumor agents.[5,6] Recently Wang and Qian and co-workers.[7] found that the original structure was not correctly assigned. On the basis of 2D NMR spectroscopies and X-ray crystal structures of corresponding compounds, the scaffold was corrected as 1-oxo-1*H*-phenalene-2,3-dicarbonitrile.



Because of the correction of the core structures, we corrected the paper DOI: 10.1021/jm200258t from the viewpoint of chemical structures, chemical names, and related molecular docking results. Abbreviations in the following tables included: LC, left-hand column; RC, right-hand column.

Part 1: Corrections of Chemical Structures throughout Manuscript. See Chart 1.

Part 2: Corrections of Chemical Names throughout Manuscript. See Table 1 in this Addition and Correction.

In the Experimental Section, the target compounds were renamed because of the correction of the core structures. See Table 2 in this Addition and Correction.

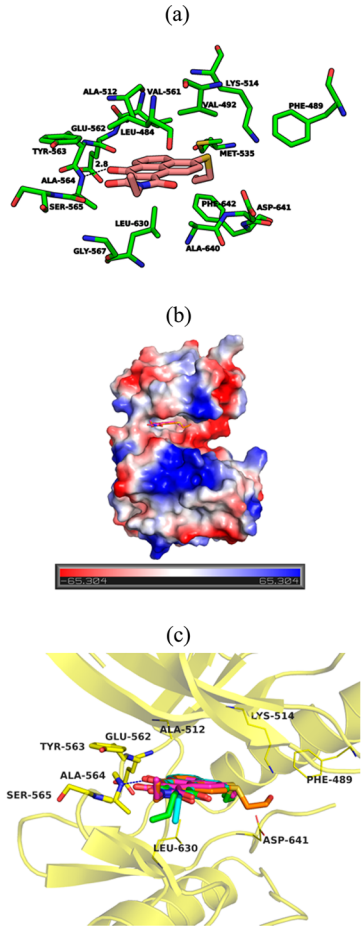


Figure 3.

Part 3: Correction of Related Molecular Docking Results throughout Manuscript. In silico target screening using PharmMapper Server was performed to predict the molecular target of compound **2** with the revised structure. The binding modes of representative compounds with revised structures at the ATP-binding site of FGFR1 were performed using Glide 4.0 module. The physicochemical properties of all the compounds with corrected structures

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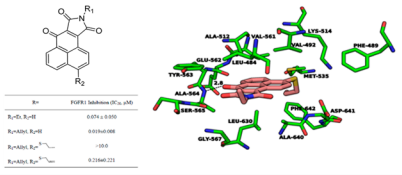
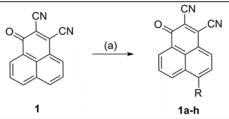
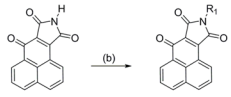
Chart 1

Position	Corrected
P3732, TOC	
P3733, Figure 1	
P3734, Scheme 1	
P3734, Scheme 2	

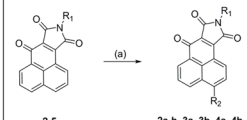
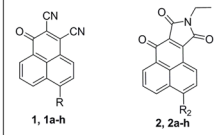
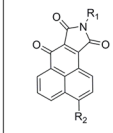
Position	Corrected
P3734, Scheme 3	
P3735, Table 2	
P3736, Table 3	

Table 1

position	past	corrected
P3732: Title; Abstract, Line 1	Acenaphtho[1,2-*b*]pyrrole	1-oxo-1*H*-phenalene
P3733: Lines 34, 37 and 38, LC; Line 3, RC		
P3734: Lines 6−7, LC; Lines 7, 10, 13 and 25, RC		
P3735: Lines 21−22, LC		
P3736: Lines 24, LC; Lines 40−41 and 60, RC		
P3737: Tables 4 and 5; Line 18, LC		
P3739: Lines 5−6, 12 and 25, LC; Lines 4 and 6, RC		
P3732: Abstract, Line 5	acenaphtho[1,2-*b*]pyrrole carboxylic acid esters	N-alkylation derivatives of naphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione
P3734: Lines 1−2, and 29, RC		
P3735: Lines 13−14, LC		
P3736: Lines 3−4, 8−9, 28−29, and 49, RC		
P3739: Lines 13 and 16−17, LC		
P3733: Lines 29, LC	8-Oxo-8*H*-acenaphtho[1,2-*b*]pyrrolecarbonitrile (**1**)	1-oxo-1*H*-phenalene-2,3-dicarbonitrile (**1**)
P3733, Lines 6−7, RC	Ethyl 8-oxo-8*H*-acenaphtho[1,2-*b*]pyrrole-9-carboxylate (**2**)	9-ethylnaphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**2**)
P3734: Lines 9 and 20, LC	esterification	alkylation
P3734: Lines 10, LC	hydrolysis	condensation
P3734: Lines 11−12, LC	via Knoevenagel condensation and cyclization	via a base-catylsed and cyano-assisted ring expansion mechanism
P3734: Line 18, LC	8-Oxo-8*H*-acenaphtho[1,2-*b*]pyrrole-9-carboxylic acid (**D1**)	naphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**D1**)
P3734: Lines 2−3, RC	3-thiolacenaphtho[1,2-*b*]pyrrole carboxylic acid esters	3-thiol derivatives
P3734: Lines 25 and 33, RC	9-ester	9-imide
P3736: Line 7, LC; Line 24, RC		
P3739: Lines 11 and 23, LC		
P3736: Table 3	Acenaphtho[1,2-*b*]pyrrole carboxylic acid esters (**3**−**5**)	Compounds **3**−**5**

were calculated with QikProp module in Maestro and XLOGP3 online service.

Corrections were made according to the new results shown in Table 3 of this Addition and Correction.

Page 3737. The body of Table 4 of the original manuscript should be corrected as shown in Table 4 of this Addition and Correction.

Page 3738. Figure 3a−c of the original manuscript should be corrected as shown in Figure 3 of this Addition and Correction.

Supporting Information of DOI: 10/1021/jm200258. Corrections to Table S1 in the Supporting Information file of the original manuscript, pp S2 and S3, are indicated in Tables 5 and 6 of this Addition and Correction.

dx.doi.org/10.1021/jm401869n | *J. Med. Chem.* 2014, 57, 1621−1624

Table 2

position	corrected
P3740: Lines 7−8, LC	1-oxo-6-(propylthio)-1*H*-phenalene-2,3-dicarbonitrile (**1a**)
P3740: Lines 15−16, LC	6-(allylthio)-1-oxo-1*H*-phenalene-2,3-dicarbonitrile (**1b**)
P3740: Lines 23−24, LC	6-(isopropylthio)-1-oxo-1*H*-phenalene-2,3-dicarbonitrile (**1c**)
P3740: Lines 31−32, LC	1-oxo-6-(2-(pyrazin-2-yl)ethylthio)-1*H*-phenalene-2,3-dicarbonitrile (**1d**)
P3740: Lines 43−44, LC	6-(2-hydroxyethylthio)-1-oxo-1*H*-phenalene-2,3-dicarbonitrile (**1e**)
P3740: Lines 51−52, LC	6-(2-methyltetrahydrofuran-3-ylthio)-1-oxo-1*H*-phenalene-2,3-dicarbonitrile (**1f**)
P3740: Lines 1−2, RC	6-(1-(5-methyl-1,3-oxathiolan-5-yl)ethylthio)-1-oxo-1*H*-phenalene-2,3-dicarbonitrile(**1g**)
P3740: Lines 17−18, RC	1-oxo-6-(2-(thiazolidin-3-yl)ethylthio)-1*H*-phenalene-2,3-dicarbonitrile (**1h**)
P3740: Lines 30−31, RC	9-allylnaphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**3**)
P3740: Lines 47−48, RC	*S*-propyl 2-(7,8,10-trioxonaphtho[1,8-*ef*]isoindol-9(7*H*,8*H*,10*H*)-yl)ethanethioate (**4**)
P3741: Lines 11−12, LC	2,2,3,3,3-pentafluoropropyl 2-(7,8,10-trioxonaphtho[1,8-*ef*]isoindol-9(7*H*,8*H*,10*H*)-yl)acetate (**5**)
P3741: Lines 45−46, LC	9-ethyl-3-(propylthio)naphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**2a**)
P3741: Lines 57−58, LC	3-(allylthio)-9-ethylnaphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**2b**)
P3741: Lines 5−6, RC	9-ethyl-3-(isopropylthio)naphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**2c**)
P3741: Lines 16−17, RC	9-ethyl-3-(2-(pyrazin-2-yl)ethylthio)naphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**2d**)
P3741: Lines 26−27, RC	9-ethyl-3-(2-hydroxyethylthio)naphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**2e**)
P3741: Lines 35−36, RC	9-ethyl-3-(2-methyltetrahydrofuran-3-ylthio)naphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**2f**)
P3741: Lines 50−51, RC	9-ethyl-3-(1-(5-methyl-1,3-oxathiolan-5-yl)ethylthio)naphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**2g**)
P3742: Lines 1−2, LC	9-allyl-3-(propylthio)naphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**3a**)
P3742: Lines 14−15, LC	9-allyl-3-(allylthio)naphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**3b**)
P3742: Lines 26−27, LC	*S*-propyl 2-(7,8,10-trioxo-3-(propylthio)naphtho[1,8-*ef*]isoindol-9(7*H*,8*H*,10*H*)-yl)ethanethioate (**4a**)
P3742: Lines 39−40, LC	*S*-propyl 2-(3-(allylthio)-7,8,10-trioxonaphtho[1,8-*ef*]isoindol-9(7*H*,8*H*,10*H*)-yl)ethanethioate (**4b**)
P3742: Lines 52−53, LC	2,2,3,3,3-pentafluoropropyl 2-(7,8,10-trioxo-3-(propylthio)naphtho[1,8-*ef*]isoindol-9(7*H*,8*H*,10*H*)-yl)acetate (**5a**)
P3742: Line 1−2, RC	2,2,3,3,3-pentafluoropropyl 2-(3-(allylthio)-7,8,10-trioxonaphtho[1,8-*ef*]isoindol-9(7*H*,8*H*,10*H*)-yl)acetate (**5b**)
P3742: Lines 14−15, RC	9-ethyl-3-(2-(thiazolidin-3-yl)ethylthio)naphtho[1,8-*ef*]isoindole-7,8,10(9*H*)-trione (**2h**)

Table 3

position	past	corrected
P3733: Lines 18−20, RC	there are two tyrosine kinases (LCK and Src) and three serine/threonine kinases (MEK1, CDK2, and p38 MAPK) in the top 0.6% of prediction results	there are two tyrosine kinases (erbB-4, JAK2) and five serine/threonine kinases (MAPK) in the top 1% of prediction results
P3735: Line 20, LC; Line 2, RC	**3b**	**2b**
P3738: Figure 3		
P3735: Line 7, RC	Leu 484, Ala 512	Val 561, Ala 512, Met 535
P3735: Line 8, RC	allyl 9-ester side chains	9-ester side chains
P3735: Lines 9−10, RC	Tyr 563 and Leu 630	Leu 484
P3735: Line 12, RC	2*H*-pyrrol-2-one	cyclohexa-2,5-dienone

Table 4

compd	MW[a]	X log P [b]	CI log *S* [c]	QPPCaco2[d]
1	230.255	2.55	−3.422	235.941
2	277.279	2.45	−3.601	643.281
3	289.290	2.73	−3.856	649.966
4	365.403	3.44	−4.545	363.567
5	439.289	4.70	−6.114	281.834
2a	351.419	3.86	−4.944	640.522
2b	349.403	3.61	−4.901	640.595
3a	363.430	4.14	−5.199	652.164
3b	361.414	3.89	−5.156	652.141
4a	439.543	4.85	−5.888	427.717
4b	437.527	4.60	−5.845	305.817
5a	513.435	6.11	−7.457	289.514
5b	511.419	5.86	−7.414	289.514

■ ASSOCIATED CONTENT

Supporting Information

This Addition and Correction has a Supporting Information file containing NMR, COSY, NOESY, HSQC, and HMBS data and spectra for compound **5a**. This material is available free of charge via the Internet at http://pubs.acs.org.

■ REFERENCES

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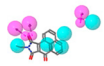
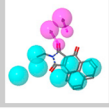
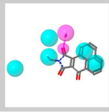
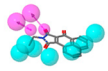
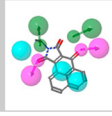
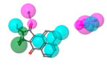
(2) Zhang, M.; Yu, M.; Li, F.; Zhu, M.; Li, M.; Gao, Y.; Li, L.; Liu, Z.; Zhang, J.; Zhang, D.; Yi, T.; Huang, C. A highly selective fluorescence turn-on sensor for cysteine/homocysteine and its application in bioimaging. *J. Am. Chem. Soc.* **2007**, *129* (34), 10322−10323.

Table 5(Corrected text for Table S1)

position	past	corrected
Page S2: Table S1 title area	top 40 (about 0.6%)	top 70 (1%)
Page S3: Table S1 footnote c	http://59.78.96.61/pharmmapper/result.php?job_id=100422201255	http://59.78.96.61/pharmmapper/result.php?job_id=13116114431

Table 6(Corrected table body for Table S1)

Rank	PDB ID	Target Name	Fit Score	Normalized Fit Score	Molecule and Pharmacophore Aligned Model
			Compound 2		
5	2ZB0	MAPK14	4.191	0.5238	
6	1S9J	MAPK1	4.190	0.4655	
12	1OUY	MAPK14	3.812	0.4765	
59	3BBT	erbB-4	3.562	0.5937	
62	3FC1	MAPK14	3.551	0.3945	
64	2B7A	JAK2	3.547	0.5067	
65	3E92	MAPK14	3.546	0.3546	

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