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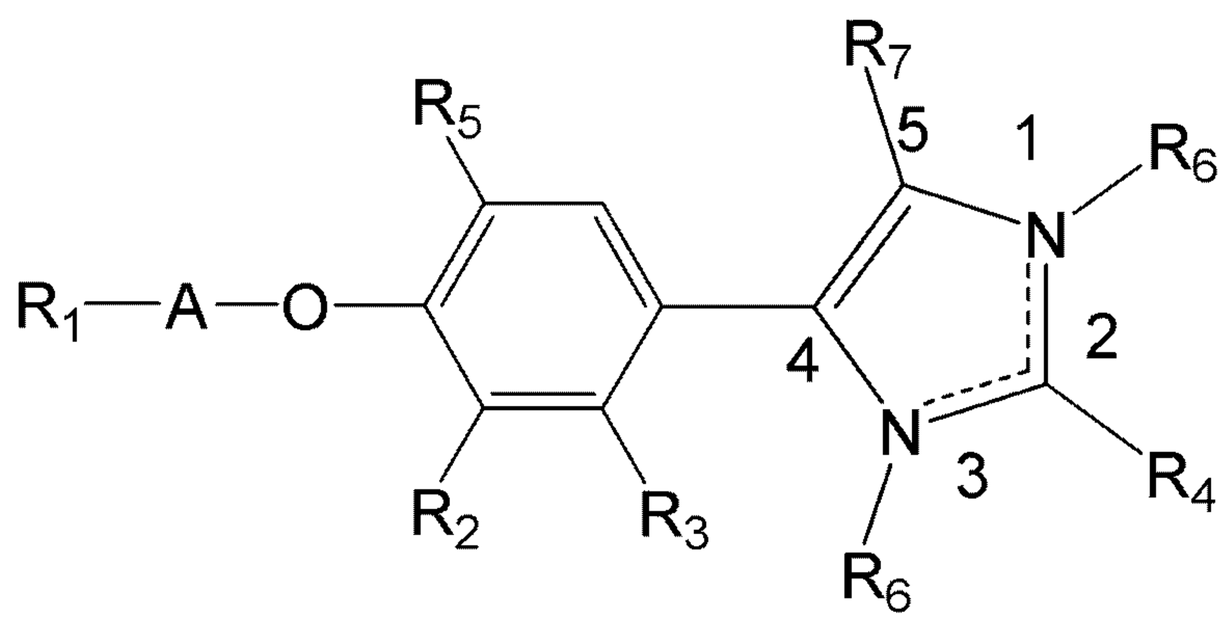
申請專利範圍項數：12 項　圖式數：0　共 146 頁

(54)名稱

苯基咪唑化合物

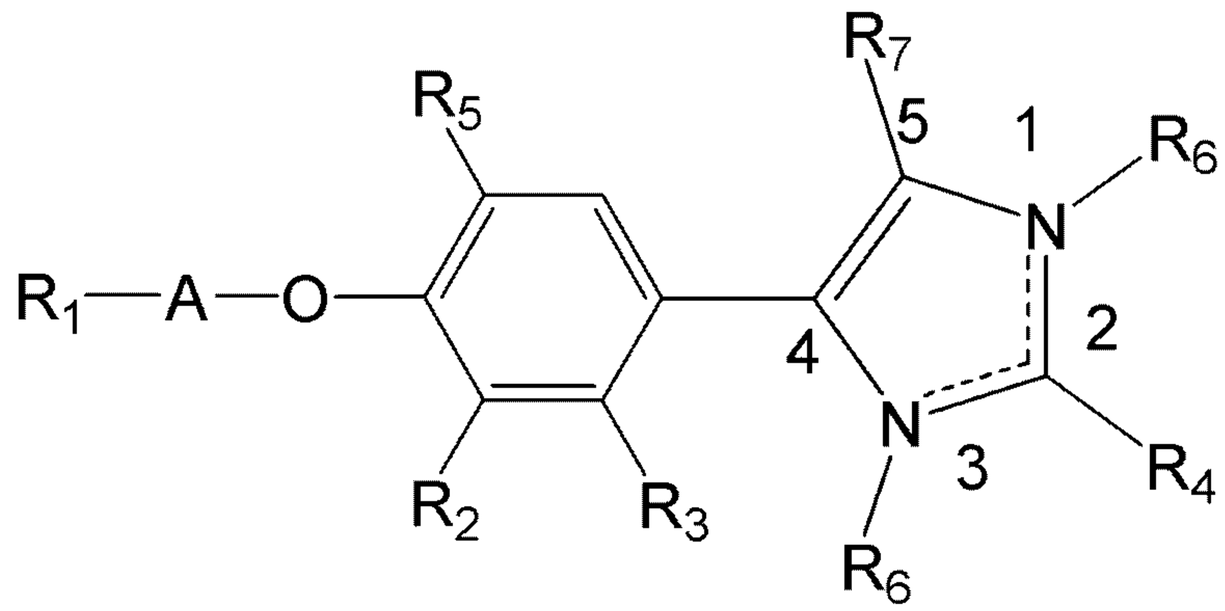
(57)摘要

本發明提供一種在預防及治療高血脂症或肥胖等上有效之化合物(化學療法劑)。即，下述通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽。



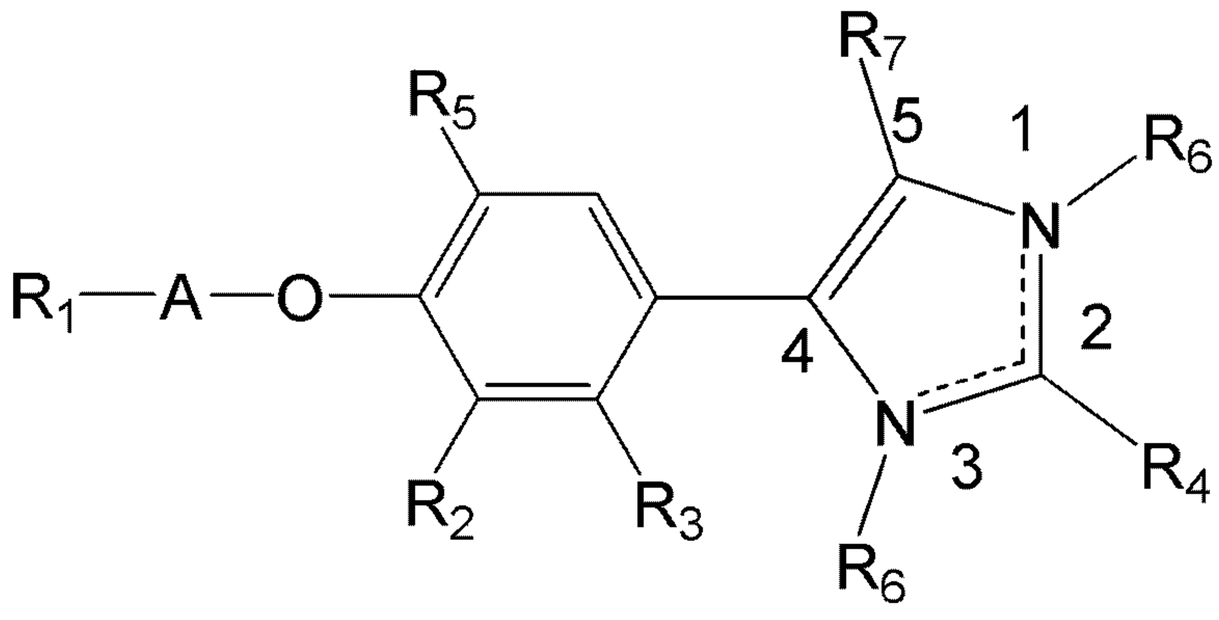
(1)

Provided is a compound (chemotherapeutic agent) effective in the prevention and treatment of hyperlipidemia, obesity, or the like. A phenylimidazole compound or a pharmaceutically acceptable salt thereof represented by the following formula (1):



(1)

特徵化學式：



(1)

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申請日：105年12月5日

IPC分類：*C07D 401/14* (2006.01)
A61K 31/444 (2006.01)
A61P 3/04 (2006.01)
A61P 3/06 (2006.01)
A61P 9/10 (2006.01)

公告本

【發明摘要】

【中文發明名稱】

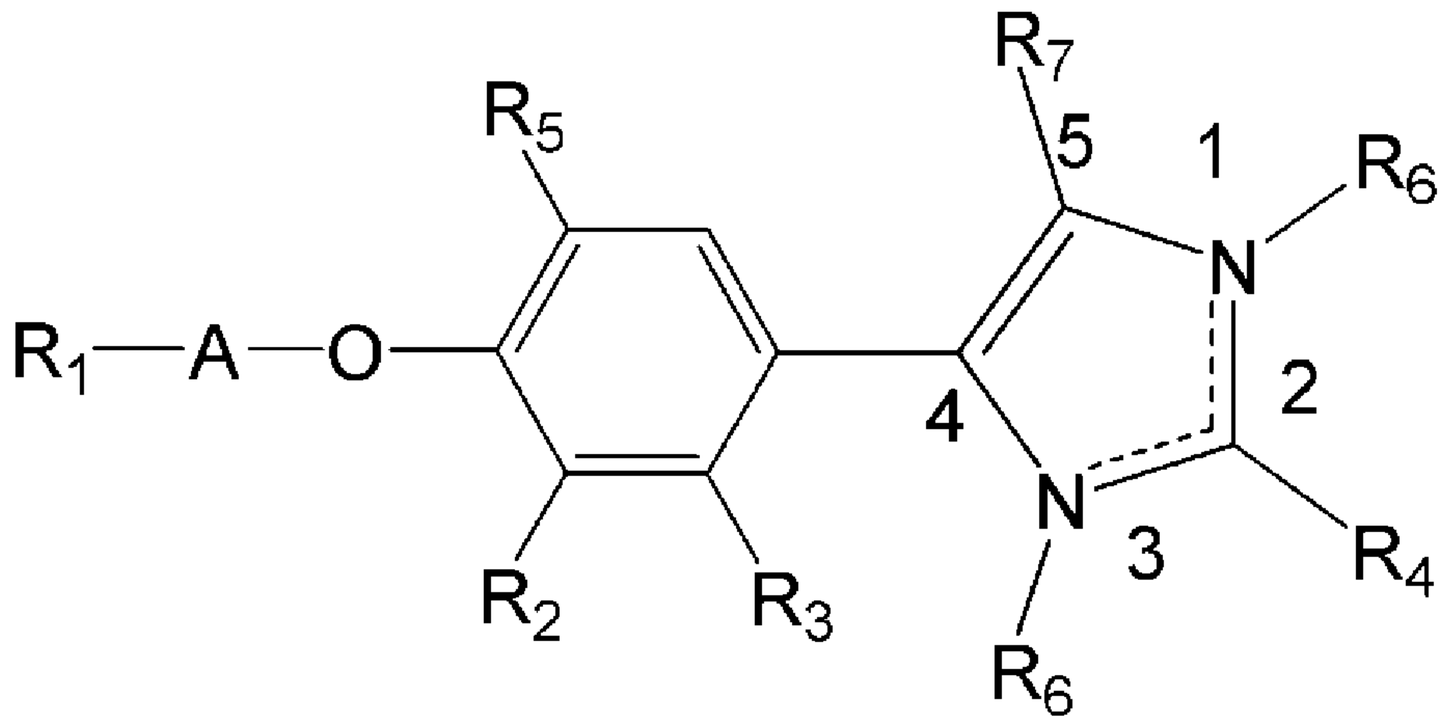
苯基咪唑化合物

【英文發明名稱】

PHENYLIMIDAZOLE COMPOUNDS

【中文】

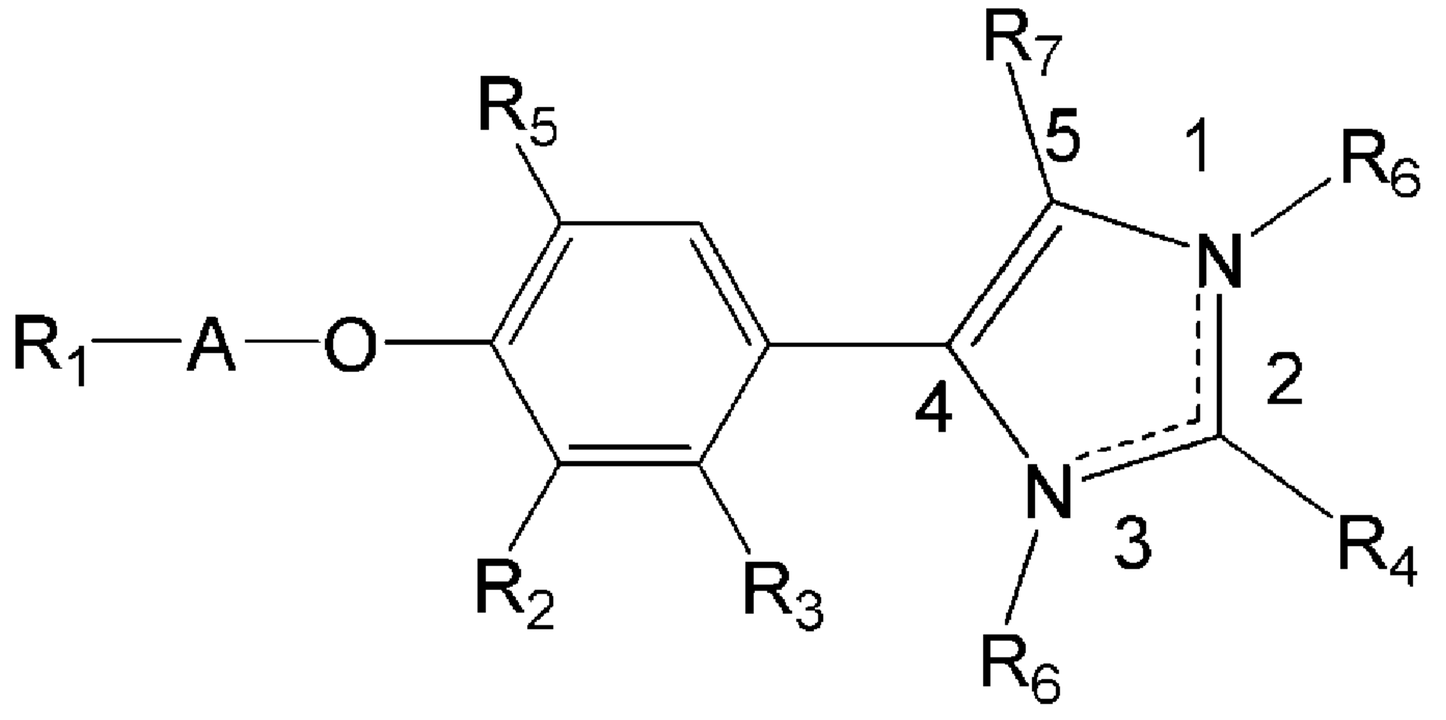
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(1)

【英文】

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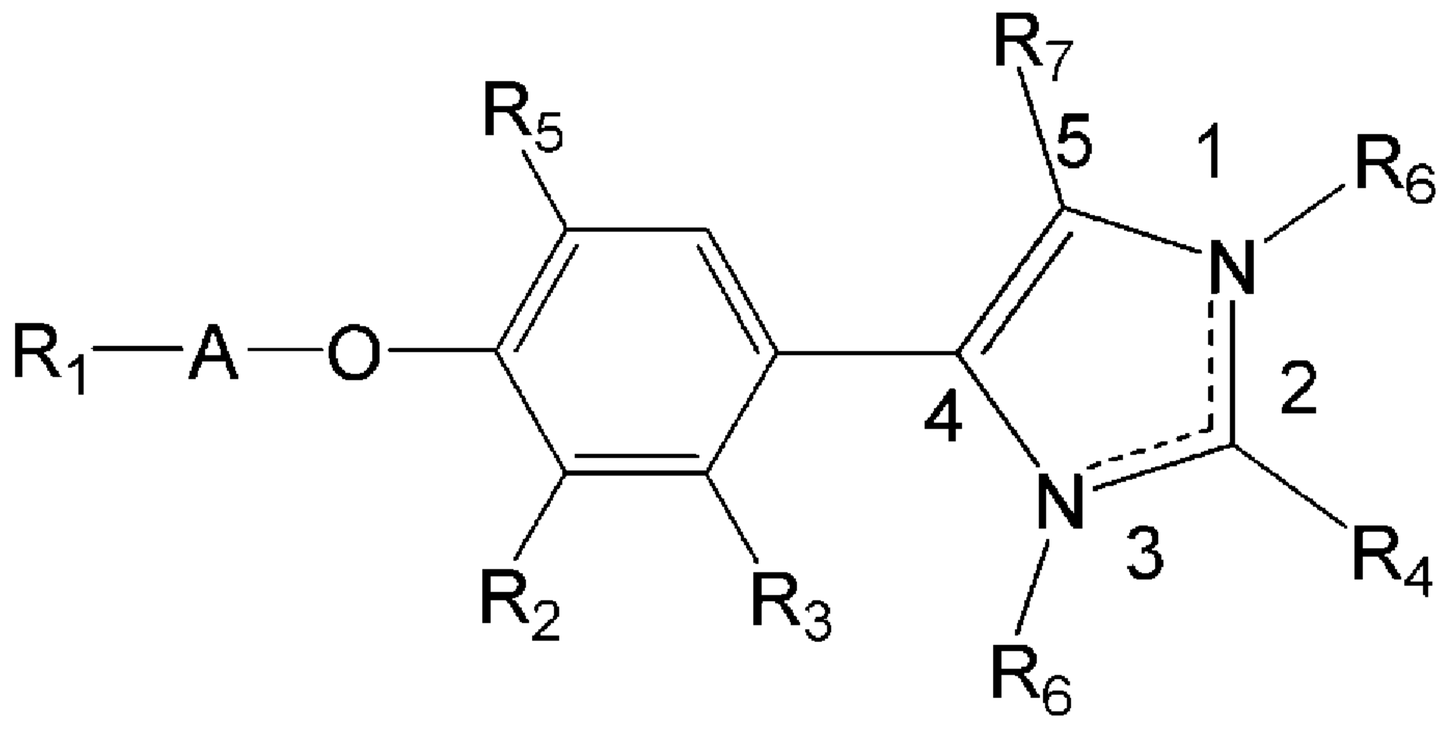
(1)

【指定代表圖】(無)

【代表圖之符號簡單說明】

(無)

【特徵化學式】



(1)

【發明說明書】

【中文發明名稱】

苯基咪唑化合物

【英文發明名稱】

PHENYLIMIDAZOLE COMPOUNDS

【技術領域】

【0001】本發明關於一種新穎苯基咪唑化合物。

【先前技術】

【0002】背景技術

現代社會被稱為飽食的社會，被診斷為高血脂症或肥胖等之人急遽增加。高血脂症或肥胖等狀態會引起糖尿病，或者成為動脈硬化或肇因於動脈硬化之心肌梗塞或腦梗塞等之原因。

【0003】因此，關於用以預防或治療高血脂症或肥胖等之醫藥品及化學療法等，刻正進行各種研究。使脂蛋白脂酶(LPL)活性化之化學療法被舉為其中之一。現稱LPL之活性化在高血脂症或肥胖等之預防及治療上有效。就具有LPL活性化作用之化合物而言，目前已有具苯基咪唑骨架之化合物被報告指出(例如專利文獻1及2)。

先行技術文獻

專利文獻

【0004】[專利文獻1]國際公開WO2009/139076

[專利文獻2]國際公開WO2010/090200

【發明內容】

【0005】發明概要

發明欲解決之課題

本發明主要目的在於提供一種在預防及治療高血脂症或肥胖等上有效之化合物(化學療法劑)。

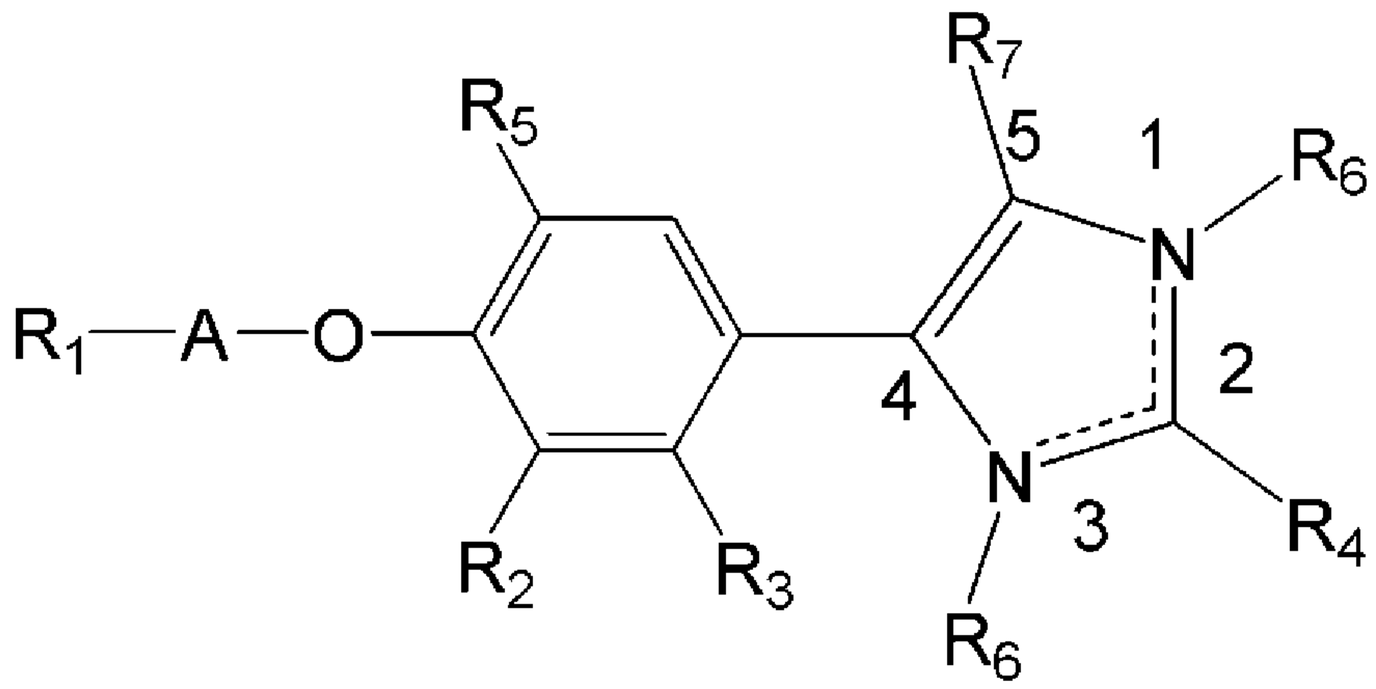
用以解決課題之手段

【0006】本案發明人以提供一種在預防及治療高血脂症或肥胖等上有效之化合物(化學療法劑)為目的，為了開發出具有LPL活性化作用(特別是骨骼肌專一性LPL活性化作用)之化合物，迄今不斷反覆精心研討。在研究過程中，成功合成出下述通式(1)所示苯基咪唑化合物，並發現該化合物具有較習知具苯基咪唑骨架化合物更為優良之所需性質。基於此種及更進一步之知識見解，而提供以下述者為代表之發明。

【0007】(Reclaims)

第1項 一種下述通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽：

【0008】[化學式1]



(1)

【0009】[式中，R^1為

(1-1)氫原子；

(1-2)吡唑基；

(1-3)嘧啶基；

(1-4)吡啶基，其具有1或2個選自於由鹵素原子、氰基、C1~C6烷基、C1~C6烷基磺醯基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基；

(1-5)具有C1~C6烷基之噁唑基；

(1-6)吡咔基，其可經選自於由鹵素原子及C1~C6烷基所構成群組中之至少一種基取代；

(1-7)苯基，其具有1或2個選自於由鹵素原子及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基；

(1-8)(1-氧吡啶)基，其具有1或2個選自於由鹵素原子及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基；

(1-9)經鹵素原子取代之噻唑基；

(1-10)經C1~C6烷基取代之異噁唑基；

(1-11)經C3~C8環烷基取代之1,2,4-噁二唑基；或

(1-12)苯基；

R^2表示氫原子或C1~C6烷氧基；

R^3為

(3-1)氫原子、

(3-2)C1~C6烷氧基、

(3-3)C1~C6烷氧基C1~C6烷氧基、

(3-4)C1~C6烷基、

(3-5)鹵素原子、

(3-6)苄氧基、或

(3-7)羥基；

R^4為

(4-1)吡啶基，其具有選自於由鹵素原子、氰基、羥基、吡咯啶基、C1~C6烷基、C1~C6烷硫基、C1~C6烷基磺醯基、C1~C6烷氧基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基；

(4-2)C3~C10環烷基，其可具有1或2個選自於由鹵素原子及C1~C6烷基所構成群組中之至少一種基作為取代基；或

(4-3)低級烷基；

R^5為

(5-1)氫原子、

(5-2)C1~C6烷基、或

(5-3)C1~C6烷氧基；

R^6為

(6-1)氫原子、

(6-2)C1~C6烷氧基C1~C6烷基、或

(6-3)可經C3~C10環烷基取代之C1~C6烷基。

R^6僅取代在咪唑骨架1位之N及3位之N中之任一者上，且咪唑骨架3位之N與2位之C的鍵結為雙鍵時，R^6取代在1位之N上，3位之N與2位之C的鍵結為單鍵時，R^6則

取代在3位之N上；

R^7為

(7-1)氫原子、

(7-2)鹵素原子、

(7-3)C1~C6烷基、

(7-4)羥甲基、

(7-5)經鹵素取代之C1~C6烷基、或

(7-6)氰基；

A在上述R^1為氫原子時為單鍵，R^1為氫原子以外之基時則為C1~C6伸烷基；

咪唑骨架3位之N與2位之C的鍵結為雙鍵時，2位之C與1位之N的鍵結為單鍵，3位之N與2位之C的鍵結為單鍵時，2位之C與1位之N的鍵結為雙鍵；

但，R^1為(1-7)或(1-12)且R^4為(4-3)之化合物除外]。

【0010】第2項 如第1項之苯基咪唑化合物或其藥學上可接受之鹽，其中R^4為(4-1)之基。

【0011】第3項 如第1項之苯基咪唑化合物或其藥學上可接受之鹽，其中R^4為吡啶基或(4-2)之基，該吡啶基可具有選自於由鹵素原子、氰基、羥基、吡咯啶基、C1~C6烷基、C1~C6烷氧基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基。

【0012】第4項 如第1至3項中任一項之苯基咪唑化合物或其藥學上可接受之鹽，其中R^1為(1-4)之基。

【0013】第5項 如第1至4項中任一項之苯基咪唑化合

物或其藥學上可接受之鹽，其中R^3為氫原子或C1~C6烷氧基，R^5為氫原子或C1~C6烷氧基。

【0014】第6項 如第1至5項中任一項之苯基咪唑化合物或其藥學上可接受之鹽，其中R^4為具有鹵素原子作為取代基之吡啶基。

【0015】第7項 如第1至6項中任一項之苯基咪唑化合物或其藥學上可接受之鹽，其中R^1為吡啶基，其具有1或2個選自於由鹵素原子及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基。

【0016】第8項 如第1至7項中任一項之苯基咪唑化合物或其藥學上可接受之鹽，其中R^2及R^5均為氫原子，R^3為C1~C6烷氧基。

【0017】第9項 如第1至8項中任一項之苯基咪唑化合物或其藥學上可接受之鹽，其中R^6為氫原子，R^7為鹵素原子。

【0018】第10項 如第1至8項中任一項之苯基咪唑化合物或其藥學上可接受之鹽，其中該苯基咪唑化合物係選自下列化合物：

・5-[[4-(5-氯-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-2-(三氟甲基)吡啶；

・2-[[4-(5-氯-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-3-氟-5-(三氟甲基)吡啶；

・2-[[4-(5-溴-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-3-氟-5-(三氟甲基)吡啶；

・3-氯-2-[[4-(5-氯-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-5-(三氟甲基)吡啶；

・2-[[4-(5-溴-2-(6-氯吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-5-(三氟甲基)吡啶；

・5-溴-2-[[4-(4-氯-2-(6-氟吡啶-3-基)-1H-咪唑-5-基)-3-甲氧基苯氧基]甲基]-3-氟吡啶；及

・5-[4-氯-5-[2-甲氧基-4-((6-三氟甲基)吡啶-2-基)甲氧基)苯基]-1H-咪唑-2-基)]-2-氟吡啶。

【0019】第11項 一種醫藥組成物，含有如第1至10項中任一項之化合物或其藥學上可接受之鹽。

【0020】第12項 一種LPL活性化劑，含有如第1至10項中任一項之化合物或其藥學上可接受之鹽。

【0021】第13項 如第11項之醫藥組成物，其係用以預防或治療高血脂症、動脈硬化或肥胖。

【0022】第14項 一種LPL活性之活性化方法，包含：對需要LPL活性之活性化的受測體投予第1至10項中任一項之化合物或其藥學上可接受之鹽。

【0023】第15項 一種預防或治療高血脂症、動脈硬化或肥胖之方法，包含：對需要預防或治療高血脂症、動脈硬化或肥胖之受測者投予第1至10項中任一項之化合物或其藥學上可接受之鹽。

【0024】第16項 一種如第1至10項之任一項之化合物或其藥學上可接受之鹽的用途，係用以製造LPL活性化劑者。

【0025】第17項 一種如第1至10項之任一項之化合物或其藥學上可接受之鹽的用途，係用以製造預防或治療高血脂症、動脈硬化或肥胖用之醫藥組成物者。

發明效果

【0026】本發明之苯基咪唑化合物具有脂蛋白脂酶(LPL)之活性化作用，其作為LPL活性化劑而在高血脂症、動脈硬化、肥胖等之預防及/或治療上甚是有用。此外，本發明之苯基咪唑化合物對於水(例如pH1.2及pH6.8之水)具有優異溶解性。於一實施形態中，本發明之苯基咪唑化合物對於pH1.2之水及/或pH6.8之水的溶解度為0.3μg/ml以上而甚理想。

【實施方式】

【0027】用以實施發明之形態

1.取代基之定義

吡唑基包含諸如1H-吡唑-3-基、1H-吡唑-4-基及1H-吡唑-1-基。

【0028】嘧啶基包含諸如2-嘧啶基、4-嘧啶基及5-嘧啶基。

【0029】鹵素原子包含諸如氟、氯、溴及鿱等。

【0030】C1~C6烷基包含諸如甲基、乙基、正丙基、正丁基、正戊基、正己基、1-甲基乙基、三級丁基及2-甲基丁基等直鏈或分枝鏈狀且碳數為1~6個之烷基。

【0031】C1~C6烷基磺醯基包含諸如甲磺醯基、乙磺醯基、正丙磺醯基、正丁磺醯基、正戊磺醯基、正己磺

醯基、1-甲基乙基磺醯基、三級丁基磺醯基及2-甲基丁基磺醯基等直鏈或分枝鏈狀且碳數為1~6個之烷基磺醯基。

【0032】經鹵素取代之C1~C6烷基包含：諸如具有選自於由氟、氯、溴及碘原子所構成群組中之鹵素原子來作為取代基，且烷基部分為碳數1~6個之直鏈狀或分枝狀烷基的鹵烷基。較佳之經鹵素取代之C1~C6烷基為全鹵烷基，更宜為全氟烷基。具體之經鹵素取代之C1~C6烷基可列舉如：三氟甲基、五氟乙基、七氟丙基、九氟丁基、十一氟戊基及十三氟己基、2,2,2-三氟乙基、3,3,3-三氟丙基、4,4,4-三氟丁基、5,5,5-三氟戊基、6,6,6-三氟己基等。

【0033】具有1或2個選自於由鹵素原子、氰基、C1~C6烷基、C1~C6烷基磺醯基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基來作為取代基的吡啶基可舉例如：3-氟吡啶-2-基、4-氟吡啶-2-基、5-氟吡啶-2-基、6-氟吡啶-2-基、2-氟吡啶-3-基、4-氟吡啶-3-基、5-氟吡啶-3-基、6-氟吡啶-3-基、2-氟吡啶-4-基、3-氟吡啶-4-基、3-氯吡啶-2-基、3-溴吡啶-2-基、3-碘吡啶-2-基、3,5-二氟吡啶-2-基、4,5-二氟吡啶-2-基、3,5-二氯吡啶-2-基、3,5-二溴吡啶-2-基、5-溴-3-氟吡啶-2-基、3-溴-5-氯吡啶-2-基、5-氯-3-氟吡啶-2-基、3-氰基吡啶-2-基、4-氰基吡啶-2-基、5-氰基吡啶-2-基、6-氰基吡啶-2-基、2-氰基吡啶-3-基、4-氰基吡啶-3-基、5-氰基吡啶-3-基、6-氰基吡啶-3-基、2-氰基吡啶-4-基、3-氰基吡啶

-4-基、3,5-二氰基吡啶-2-基、4,5-二氰基吡啶-2-基、3-甲基吡啶-2-基、4-甲基吡啶-2-基、5-甲基吡啶-2-基、6-甲基吡啶-2-基、2-甲基吡啶-3-基、4-甲基吡啶-3-基、5-甲基吡啶-3-基、6-甲基吡啶-3-基、2-甲基吡啶-4-基、3-甲基吡啶-4-基、3-乙基吡啶-2-基、3-正丙基吡啶-2-基、3-正丁基吡啶-2-基、3-正戊基吡啶-2-基、3-正己基吡啶-2-基、3,5-二甲基吡啶-2-基、4,5-二甲基吡啶-2-基、3,5-二乙基吡啶-2-基、3-甲磺醯基吡啶-2-基、4-甲磺醯基吡啶-2-基、5-甲磺醯基吡啶-2-基、6-甲磺醯基吡啶-2-基、2-甲磺醯基吡啶-3-基、4-甲磺醯基吡啶-3-基、5-甲磺醯基吡啶-3-基、6-甲磺醯基吡啶-3-基、2-甲磺醯基吡啶-4-基、3-甲磺醯基吡啶-4-基、5-乙磺醯基吡啶-2-基、5-正丙磺醯基吡啶-2-基、5-正丁磺醯基吡啶-2-基、5-正戊磺醯基吡啶-2-基、5-正己磺醯基吡啶-2-基、3,5-二甲磺醯基吡啶-2-基、4,5-二甲磺醯基吡啶-2-基、3,5-二乙磺醯基吡啶-2-基、3-三氟甲基吡啶-2-基、4-三氟甲基吡啶-2-基、5-三氟甲基吡啶-2-基、6-三氟甲基吡啶-2-基、2-三氟甲基吡啶-3-基、4-三氟甲基吡啶-3-基、5-三氟甲基吡啶-3-基、6-三氟甲基吡啶-3-基、2-三氟甲基吡啶-4-基、3-三氟甲基吡啶-4-基、6-五氟乙基吡啶-3-基、6-正七氟戊基吡啶-3-基、6-正九氟丁基吡啶-3-基、6-正十一氟戊基吡啶-3-基、6-正十三氟己基吡啶-3-基、3,5-雙三氟甲基吡啶-2-基、4,5-雙三氟甲基吡啶-2-基、3-氟-5-三氟甲基吡啶-2-基、3-氯-5-三氟甲基吡啶-2-基、3-溴-5-

三氟甲基吡啶-2-基、3-碘-5-三氟甲基吡啶-2-基、5-氟-3-三氟甲基吡啶-2-基、5-氯-3-三氟甲基吡啶-2-基、5-溴-3-三氟甲基吡啶-2-基、5-碘-3-三氟甲基吡啶-2-基、3-氟-5-甲基吡啶-2-基、3-氯-5-甲基吡啶-2-基、3-溴-5-甲基吡啶-2-基、3-碘-5-甲基吡啶-2-基、5-氟-3-甲基吡啶-2-基、5-氯-3-甲基吡啶-2-基、5-溴-3-甲基吡啶-2-基、5-碘-3-甲基吡啶-2-基、3-氟-5-甲磺醯基吡啶-2-基、3-氯-5-甲磺醯基吡啶-2-基、3-溴-5-甲磺醯基吡啶-2-基、3-碘-5-甲磺醯基吡啶-2-基、5-氟-3-甲磺醯基吡啶-2-基、5-氯-3-甲磺醯基吡啶-2-基、5-溴-3-甲磺醯基吡啶-2-基、5-碘-3-甲磺醯基吡啶-2-基、5-氰基-3-氟吡啶-2-基、3-氯-5-氰基吡啶-2-基、3-溴-5-氰基吡啶-2-基、5-氰基-3-碘吡啶-2-基、3-氰基-5-氟吡啶-2-基、5-氯-3-氰基吡啶-2-基、5-溴-3-氰基吡啶-2-基、3-氰基-5-碘吡啶-2-基、5-氰基-3-三氟甲基吡啶-2-基、3-氰基-5-三氟甲基吡啶-2-基、5-氰基-3-甲基吡啶-2-基、3-氰基-5-甲基吡啶-2-基、5-氰基-3-甲磺醯基吡啶-2-基、3-氰基-5-甲磺醯基吡啶-2-基、5-甲基-3-甲磺醯基吡啶-2-基、3-甲基-5-甲磺醯基吡啶-2-基、5-甲基-3-三氟甲基吡啶-2-基、3-甲基-5-三氟甲基吡啶-2-基、5-甲磺醯基-3-三氟甲基吡啶-2-基及3-甲磺醯基-5-三氟甲基吡啶-2-基等基團。

【0034】具有C1~C6烷基之噁唑基包含諸如2-甲基噁唑-4-基、2-甲基噁唑-5-基、4-甲基噁唑-2-基、4-甲基

噁唑-5-基、5-甲基噁唑-2-基、5-甲基噁唑-4-基、2-乙基噁唑-4-基、2-正丙基噁唑-4-基、2-正丁基噁唑-4-基、2-正戊基噁唑-4-基、2-正己基噁唑-4-基及2-三級丁基噁唑-4-基等經碳數1~6之直鏈或分枝鏈狀烷基取代的噁唑基。具有C1~C6烷基之噁唑基具有1個以上C1~C6烷基，且以具有1個為宜。

【0035】可經選自於由鹵素原子及C1~C6烷基所構成群組中之至少一種基取代的吡咯基包含諸如吡咯-2-基、吡咯-3-基、5-氟吡咯-2-基、5-氯吡咯-2-基、5-溴吡咯-2-基、5-碘吡咯-2-基、6-氯吡咯-2-基、5-甲基吡咯-2-基、5-乙基吡咯-2-基、5-正丙基吡咯-2-基、5-正丁基吡咯-2-基、5-正戊基吡咯-2-基、5-正己基吡咯-2-基、5-三級丁基吡咯-2-基及6-甲基吡咯-2-基等。可經選自於由鹵素原子及C1~C6烷基所構成群組中之至少一種基取代之吡咯基可具有1個以上選自於由鹵素原子及C1~C6烷基所構成群組中之至少一種基，且以具有1個為宜。

【0036】具有1或2個選自於由鹵素原子及經鹵素取代之C1~C6烷基所構成群組中之至少一種基來作為取代基的苯基包含諸如2-三氟甲基苯基、3-三氟甲基苯基、4-三氟甲基苯基、4-五氟乙基苯基、4-正七氟丙基苯基、4-正九氟丁基苯基、4-正十一氟戊基苯基、4-十三氟己基苯基、2,3-雙(三氟甲基)苯基、2,4-雙(三氟甲基)苯基、3,4-雙(三氟甲基)苯基、2,5-雙(三氟甲基)苯基、3,5-雙(三氟甲基)苯基、2-氟苯基、3-氟苯基、4-氟苯基、4-氯

苯基、4-溴苯基、4-碘苯基、2,3-二氟苯基、2,4-二氟苯基、3,4-二氟苯基、2,5-二氟苯基、2,6-二氟苯基、2,4-二氯苯基、2,4-二溴苯基、2,4-二碘苯基、4-溴-2-氟苯基、4-氯-2-氟苯基、2-氟-4-碘苯基、2-溴-4-氟苯基、2-溴-4-氯苯基及4-溴-2-氯苯基等。

【0037】C1~C6烷氧基包含諸如甲氧基、乙氧基、正丙氧基、正丁氧基、正戊氧基、正己氧基、1-甲基乙氧基、三級丁氧基及2-甲基丁氧基等直鏈或分枝鏈狀且碳數1~6個之烷氧基。

【0038】C1~C6烷氧基C1~C6烷氧基包含諸如甲氧基甲氧基、2-甲氧基乙氧基、3-甲氧基丙氧基、4-甲氧基丁氧基、5-甲氧基戊氧基、6-甲氧基己氧基、2-甲氧基-1-甲基乙氧基、乙氧基甲氧基、正丙氧基甲氧基、正丁氧基甲氧基、正戊氧基甲氧基、正己氧基甲氧基及1-甲基乙氧基甲氧基等經碳數1~6之直鏈或分枝鏈狀烷氧基取代之碳數為1~6個之直鏈或分枝鏈狀烷氧基。

【0039】吡咯啶基包含諸如1-吡咯啶基、2-吡咯啶基及3-吡咯啶基。

【0040】C1~C6烷硫基包含諸如甲硫基、乙硫基、正丙硫基、正丁硫基、正戊硫基、正己硫基、1-甲基乙硫基、三級丁硫基及2-甲基丁硫基等直鏈或分枝鏈狀且碳數為1~6個之烷硫基。

【0041】可具有選自於由鹵素原子、氰基、羥基、吡咯啶基、C1~C6烷基、C1~C6烷硫基、C1~C6烷基磺

醯基、C1~C6烷氧基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基的吡啶基包含諸如2-吡啶基、3-吡啶基、4-吡啶基、3-氟吡啶-2-基、4-氟吡啶-2-基、5-氟吡啶-2-基、6-氟吡啶-2-基、2-氟吡啶-3-基、4-氟吡啶-3-基、5-氟吡啶-3-基、6-氟吡啶-3-基、2-氟吡啶-4-基、3-氟吡啶-4-基、6-氯吡啶-3-基、6-溴吡啶-3-基、6-碘吡啶-3-基、5-氯吡啶-2-基、5-溴吡啶-2-基、5-碘吡啶-2-基、3-甲基吡啶-2-基、4-甲基吡啶-2-基、5-甲基吡啶-2-基、6-甲基吡啶-2-基、2-甲基吡啶-3-基、4-甲基吡啶-3-基、5-甲基吡啶-3-基、6-甲基吡啶-3-基、2-甲基吡啶-4-基、3-甲基吡啶-4-基、6-乙基吡啶-3-基、6-正丙基吡啶-3-基、6-正丁基吡啶-3-基、6-正戊基吡啶-3-基、6-正己基吡啶-3-基、6-三級丁基吡啶-3-基、3-氰基吡啶-2-基、4-氰基吡啶-2-基、5-氰基吡啶-2-基、6-氰基吡啶-2-基、2-氰基吡啶-3-基、4-氰基吡啶-3-基、5-氰基吡啶-3-基、6-氰基吡啶-3-基、2-氰基吡啶-4-基、3-氰基吡啶-4-基、3-羥基吡啶-2-基、4-羥基吡啶-2-基、5-羥基吡啶-2-基、6-羥基吡啶-2-基、2-羥基吡啶-3-基、4-羥基吡啶-3-基、5-羥基吡啶-3-基、6-羥基吡啶-3-基、2-羥基吡啶-4-基、3-羥基吡啶-4-基、3-甲氧基吡啶-2-基、4-甲氧基吡啶-2-基、5-甲氧基吡啶-2-基、6-甲氧基吡啶-2-基、2-甲氧基吡啶-3-基、4-甲氧基吡啶-3-基、5-甲氧基吡啶-3-基、6-甲氧基吡啶-3-基、2-甲氧基吡啶-4-基、3-甲氧基吡啶-4-基、6-乙氧基吡啶-3-基、6-正丙氧基吡啶-3-基、6-正丁

氧基吡啶-3-基、6-正戊氧基吡啶-3-基、6-正己氧基吡啶-3-基、6-三級丁氧基吡啶-3-基、3-甲硫基吡啶-2-基、4-甲硫基吡啶-2-基、5-甲硫基吡啶-2-基、6-甲硫基吡啶-2-基、2-甲硫基吡啶-3-基、4-甲硫基吡啶-3-基、5-甲硫基吡啶-3-基、6-甲硫基吡啶-3-基、2-甲硫基吡啶-4-基、3-甲硫基吡啶-4-基、5-乙硫基吡啶-2-基、2-乙硫基吡啶-5-基、5-正丙硫基吡啶-2-基、5-正丁硫基吡啶-2-基、5-正戊硫基吡啶-2-基、5-正己硫基吡啶-2-基、5-三級丁硫基吡啶-2-基、3-甲磺醯基吡啶-2-基、4-甲磺醯基吡啶-2-基、5-甲磺醯基吡啶-2-基、6-甲磺醯基吡啶-2-基、2-甲磺醯基吡啶-3-基、4-甲磺醯基吡啶-3-基、5-甲磺醯基吡啶-3-基、6-甲磺醯基吡啶-3-基、2-甲磺醯基吡啶-4-基、3-甲磺醯基吡啶-4-基、5-乙磺醯基吡啶-2-基、5-正丙磺醯基吡啶-2-基、5-正丁磺醯基吡啶-2-基、5-正戊磺醯基吡啶-2-基、5-正己磺醯基吡啶-2-基、3,5-二甲磺醯基吡啶-2-基、4,5-二甲磺醯基吡啶-2-基、3,5-二乙磺醯基吡啶-2-基、3-三氟甲基吡啶-2-基、4-三氟甲基吡啶-2-基、5-三氟甲基吡啶-2-基、6-三氟甲基吡啶-2-基、2-三氟甲基吡啶-3-基、4-三氟甲基吡啶-3-基、5-三氟甲基吡啶-3-基、6-三氟甲基吡啶-3-基、2-三氟甲基吡啶-4-基、3-三氟甲基吡啶-4-基、6-五氟乙基吡啶-3-基、6-正七氟丙基吡啶-3-基、6-正九氟丁基吡啶-3-基、6-正十一氟戊基吡啶-3-基、6-正十三氟己基吡啶-3-基、3-(1-吡咯啶基)吡啶-2-基、4-(1-吡咯啶基)吡啶-2-

基、5-(1-吡咯啶基)吡啶-2-基、6-(1-吡咯啶基)吡啶-2-基、2-(1-吡咯啶基)吡啶-3-基、4-(1-吡咯啶基)吡啶-3-基、5-(1-吡咯啶基)吡啶-3-基、6-(1-吡咯啶基)吡啶-3-基、2-(1-吡咯啶基)吡啶-4-基、3-(1-吡咯啶基)吡啶-4-基、6-(2-吡咯啶基)吡啶-2-基及6-(3-吡咯啶基)吡啶-2-基等基團。吡啶基可具有1個以上選自於由鹵素原子、氰基、羥基、吡咯啶基、C1~C6烷基、C1~C6烷硫基、C1~C6烷磺醯基、C1~C6烷氧基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基，且以具有1個為佳。

【0042】C3~C10環烷基包含諸如環丙基、環丁基、環戊基、環己基、環庚基、環辛基、環壬基、環癸基、降莰烷-2-基、金剛烷-1-基及金剛烷-2-基等碳數為3~10個之環烷基。

【0043】可具有1或2個選自於由鹵素原子及C1~C6烷基所構成群組中之至少一種基來作為取代基之C3~C10環烷基包含諸如上述C3~C10環烷基以及1-氟環丙基、2-氯環丙基、2-氟環丙基、2-溴環丙基、2-碘環丙基、2,2-二氟環丙基、2,3-二氟環丙基、2,2-二氟環丁基、3,3-二氟環丁基、2,2-二氟環戊基、3,3-二氟環戊基、3,3-二氟環己基、4,4-二氟環己基、4,4-二氟環庚基、4,4-二氟環辛基、4-甲基環己基、4,4-二甲基環己基、4-乙基環己基、4-正丙基環己基、4-正丁基環己基、4-正戊基環己基、4-正己基環己基及4-三級丁基環己基等經鹵素原子及/或碳數為1~6個之直鏈或分枝狀烷基取代的環烷基。

【0044】C1~C6烷氧基C1~C6烷基包含諸如甲氧基甲基、2-甲氧基乙基、3-甲氧基丙基、4-甲氧基丁基、5-甲氧基戊基、6-甲氧基己基、2-甲氧基-1-甲基乙基、乙氧基甲基、正丙氧基甲基、正丁氧基甲基、正戊氧基甲基、正己氧基甲基、1-甲氧基乙基、1-乙氧基乙基、1-正丙氧基乙基、1-正丁氧基乙基、1-正戊氧基乙基、1-正己氧基乙基及1-甲基乙氧基甲基等經碳數1~6直鏈或分枝鏈狀烷氧基取代之碳數為1~6個之直鏈或分枝鏈狀烷基。

【0045】可以C3~C10環烷基進行取代之C1~C6烷基包含諸如上述C1~C6烷基以及環丙基甲基、2-環丙基乙基、1-環丙基乙基、3-環丙基丙基、4-環丙基丁基、5-環丙基戊基、6-環丙基己基、2-環丙基-1-甲基乙基、環丁基甲基、環戊基甲基、環己基甲基、環庚基甲基、環辛基甲基、環壬基甲基、環癸基甲基、降莰烷-2-基甲基、金剛烷-1-基甲基及金剛烷-2-基甲基等。

【0046】C1~C6伸烷基包含諸如亞甲基、伸乙基、亞乙基、三亞甲基、四亞甲基、五亞甲基及六亞甲基等碳數為1~6個之直鏈狀或分岐鏈狀伸烷基。

【0047】具有1或2個選自於由鹵素原子及經鹵素取代之C1~C6烷基所構成群組中之至少一種基的(1-氧吡啶)基包含諸如3-氟(1-氧吡啶)-2-基、4-氟(1-氧吡啶)-2-基、5-氟(1-氧吡啶)-2-基、6-氟(1-氧吡啶)-2-基、2-氟(1-氧吡啶)-3-基、4-氟(1-氧吡啶)-3-基、5-氟(1-氧吡啶)-3-基、6-氟(1-氧吡啶)-3-基、2-氟(1-氧吡啶)-4-基、

3-氟(1-氧吡啶)-4-基、3-氯(1-氧吡啶)-2-基、3-溴(1-氧吡啶)-2-基、3-碘(1-氧吡啶)-2-基、3,5-二氟(1-氧吡啶)-2-基、4,5-二氟(1-氧吡啶)-2-基、3,5-二氯(1-氧吡啶)-2-基、3,5-二溴(1-氧吡啶)-2-基、5-溴-3-氟(1-氧吡啶)-2-基、3-溴-5-氯(1-氧吡啶)-2-基、5-氯-3-氟(1-氧吡啶)-2-基、3-三氟甲基(1-氧吡啶)-2-基、4-三氟甲基(1-氧吡啶)-2-基、5-三氟甲基(1-氧吡啶)-2-基、6-三氟甲基(1-氧吡啶)-2-基、2-三氟甲基(1-氧吡啶)-3-基、2-三氟甲基(1-氧吡啶)-4-基、2-三氟甲基(1-氧吡啶)-5-基、4-三氟甲基(1-氧吡啶)-3-基、5-三氟甲基(1-氧吡啶)-3-基、6-三氟甲基(1-氧吡啶)-3-基、2-三氟甲基(1-氧吡啶)-4-基、3-三氟甲基(1-氧吡啶)-4-基、6-五氟乙基(1-氧吡啶)-3-基、6-正五氟戊基(1-氧吡啶)-3-基、6-正九氟丁基(1-氧吡啶)-3-基、6-正十一氟戊基(1-氧吡啶)-3-基、6-正十三氟己基(1-氧吡啶)-3-基、3,5-雙三氟甲基(1-氧吡啶)-2-基、4,5-雙三氟甲基(1-氧吡啶)-2-基、3-氟-5-三氟甲基(1-氧吡啶)-2-基、3-氯-5-三氟甲基(1-氧吡啶)-2-基、3-溴-5-三氟甲基(1-氧吡啶)-2-基、3-碘-5-三氟甲基(1-氧吡啶)-2-基、5-氟-3-三氟甲基(1-氧吡啶)-2-基、5-氯-3-三氟甲基(1-氧吡啶)-2-基、5-溴-3-三氟甲基(1-氧吡啶)-2-基、5-碘-3-三氟甲基(1-氧吡啶)-2-基等基團。

【0048】經鹵素原子取代之噻唑基包含諸如2-氯噻唑-5-基、2-氯噻唑-4-基、2-氟噻唑-5-基、2-溴噻唑-5-

基等基。噻唑基具有1個以上之鹵素原子，且以具有1個為佳。

【0049】經C1~C6烷基取代之異噁唑基包含諸如3-甲基異噁唑-5-基、3-乙基異噁唑-5-基、3-正丙基異噁唑-5-基、3-正丁基異噁唑-5-基、3-正戊基異噁唑-5-基、3-正己基異噁唑-5-基、3-(1-甲基乙基)異噁唑-5-基等基團。異噁唑基具有1個以上C1~C6烷基，且以具有1個為佳。

【0050】經C3~C8環烷基取代之1,2,4-噁二唑基包含諸如5-環丙基-1,2,4-噁二唑-3-基、5-環丁基-1,2,4-噁二唑-3-基、5-環戊基-1,2,4-噁二唑-3-基、5-環己基-1,2,4-噁二唑-3-基、5-環庚基-1,2,4-噁二唑-3-基、5-環辛基-1,2,4-噁二唑-3-基等基團。1,2,4-噁二唑基具有1個以上C3~C8環烷基，且以具有1個為佳。

【0051】2.通式(1)所示苯基咪唑化合物

於一實施形態中，通式(I)之R^1宜為吡啶基，其具有1或2個選自於由鹵素原子、氰基、C1~C6烷基、C1~C6烷基磺醯基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基。具有1或2個選自於由鹵素原子、氰基、C1~C6烷基、C1~C6烷基磺醯基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基的吡啶基宜為具有1或2個經鹵素取代之C1~C6烷基的吡啶基，或是具有1或2個選自於由經鹵素取代之C1~C6烷基及鹵素原子所構成群組中之至少一種基的吡啶，更宜為具有1或2個

選自於由鹵素原子及經鹵素取代之C1~C6烷基所構成群組中之至少一種基的吡啶基。

【0052】於一實施形態中，通式(I)之R^2宜為氫原子。

【0053】於一實施形態中，通式(I)之R^3宜為氫原子或C1~C6烷氧基。

【0054】於一實施形態中，通式(I)之R^4宜為吡啶基，其可具有選自於由鹵素原子、氰基、羥基、吡咯啶基、C1~C6烷基、C1~C6烷硫基、C1~C6烷基磺醯基、C1~C6烷氧基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基。可具有選自於由鹵素原子、氰基、羥基、吡咯啶基、C1~C6烷基、C1~C6烷硫基、C1~C6烷基磺醯基、C1~C6烷氧基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基的吡啶基宜為具有鹵素原子作為取代基之吡啶基。

【0055】於一實施形態中，通式(I)之R^5宜為氫原子或C1~C6烷氧基。

【0056】於一實施形態中，通式(I)之R^6宜為氫原子。

【0057】於一實施形態中，通式(I)之R^7宜為氫原子或C1~C6烷基，更宜為氫原子。

【0058】於一較佳之實施形態中，通式(I)之R^3為氫原子或C1~C6烷氧基且R^5為氫原子或C1~C6烷氧基。

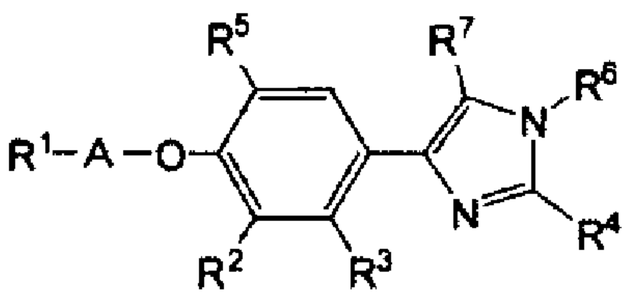
【0059】於一較佳之實施形態中，通式(I)之R^2及R^5

均為氫原子且R^3為C1~C6烷氧基。

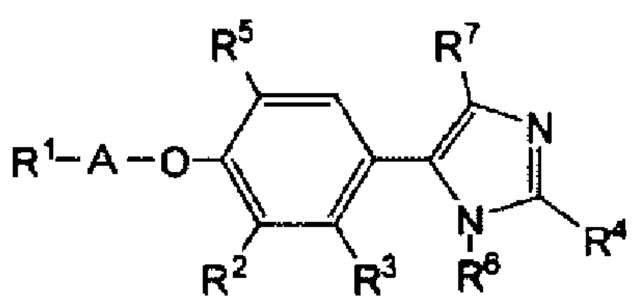
【0060】於一較佳之實施形態中，通式(I)之R^6為氫原子且R^7為鹵素原子。

【0061】於一實施形態中，通式(1)之咪唑骨架3位之N與2位之C的鍵結為雙鍵，且2位之C與1位之N的鍵結為單鍵。此時，如下述通式1-1所示，R^6僅在1位之N上作取代。於其他實施形態中，通式(1)之咪唑骨架3位之N與2位之C的鍵結為單鍵，2位之C與1位之N的鍵結為雙鍵。此時，如下述通式(1-2)所示，R^6僅在3位之N上作取代。

【0062】[化學式2]



(1-1)



(1-2)

【0063】通式(1)所示苯基咪唑化合物之較佳具體例可列舉下述化合物。

【0064】・5-[[4-(5-氯-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-2-(三氟甲基)吡啶；

・2-[[4-(5-氯-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-3-氟-5-(三氟甲基)吡啶；

・2-[[4-(5-溴-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-3-氟-5-(三氟甲基)吡啶；

・3-氯-2-[[4-(5-氯-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-5-(三氟甲基)吡啶；

・2-[[4-(5-溴-2-(6-氯吡啶-3-基)-1H-咪唑-4-基)-3-

甲氧基苯氧基]甲基]-5-(三氟甲基)吡啶；

・5-溴-2-[[4-(4-氯-2-(6-氟吡啶-3-基)-1H-咪唑-5-基)-3-甲氧基苯氧基]甲基]-3-氟吡啶；及

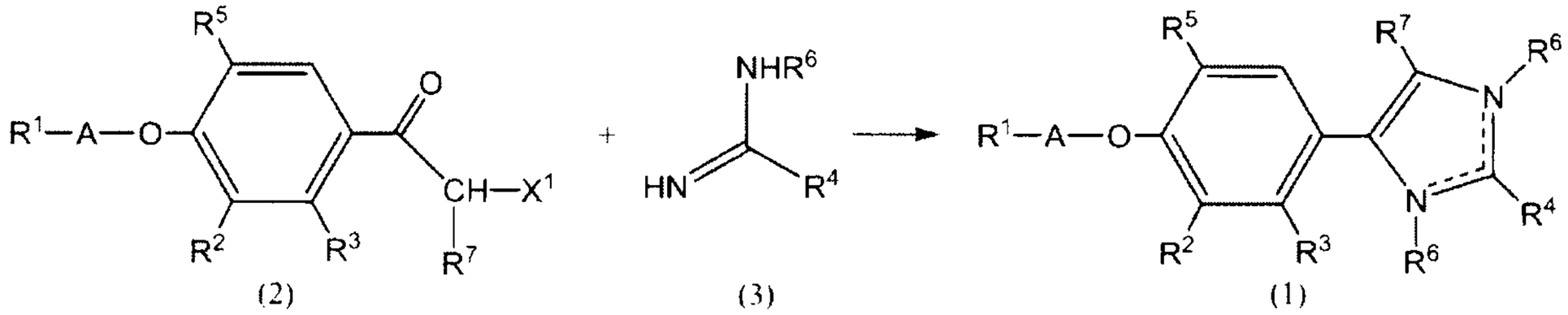
・5-[4-氯-5-[2-甲氧基-4-((6-三氟甲基)吡啶-2-基)甲氧基)苯基]-1H-咪唑-2-基)]-2-氟吡啶。

【0065】3.製造方法

通式(1)所示苯基咪唑化合物可以各種方法製出。於一實施形態中，通式(1)所示苯基咪唑化合物可藉下述反應步驟式-1所示之合成流程圖來製造。

【0066】[數學式1]

[反應步驟式-1]



【0067】[式中，A、R^1、R^2、R^3、R^4、R^5、R^6及R^7以及虛線皆同前，X^1表示鹵素原子。]

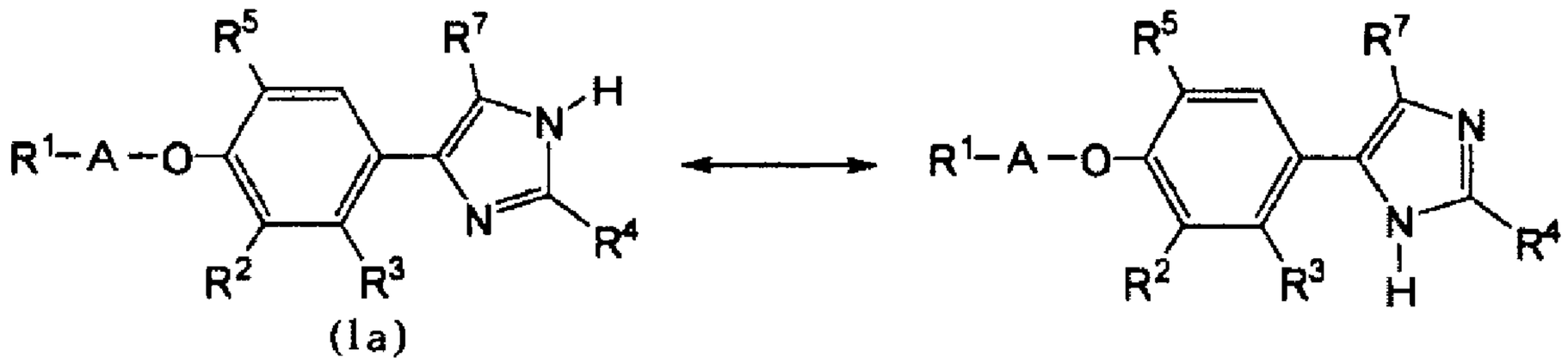
【0068】如上述反應步驟式-1所示，可藉由使化合物(2)與化合物(3)環化來製造本發明化合物(1)。

【0069】該環化反應可藉下述方式進行：於四氫呋喃(THF)、1,4-二噁烷、水或其等之混合溶劑等不活性溶劑中，使大致等莫耳之化合物(2)與化合物(3)在選自於由碳酸氫鈉、碳酸氫鉀及碳酸鈉等所構成群組中之至少一種鹼存在下，於室溫~100℃下反應0.5~10小時。相對於1莫

耳之化合物(2)，可使用1~5莫耳之鹼。

【0070】此外，上述反應步驟式-1中，R^6為氫原子之化合物(1a)可採如下所示般之互變異構形態，且無論其等之任何形態皆可表示。

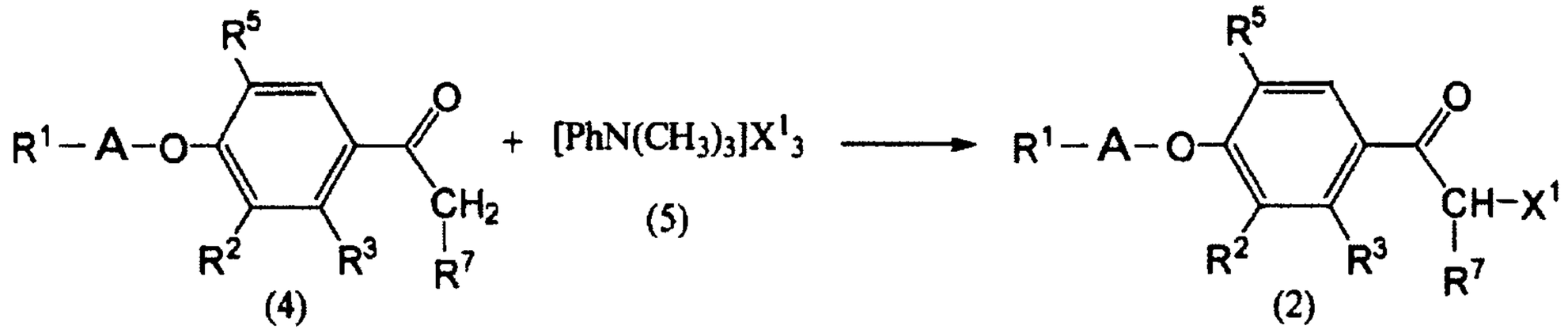
【0071】[化3]



【0072】於反應步驟式-1中，作用原料之化合物(2)可如下述反應步驟式-2所示般，藉由使化合物(4)與苯基三甲基三溴化銨(5)反應來製得。舉例來說，可在選自於由四氫呋喃(THF)及1,4-二噁烷等所構成群組中之至少一種不活性溶劑中，於0~50℃下進行該反應5~20小時。於此，相對於1莫耳之化合物(4)，可使用1~1.3莫耳之苯基三甲基三溴化銨(5)。

【0073】[數學式2]

[反應步驟式-2]

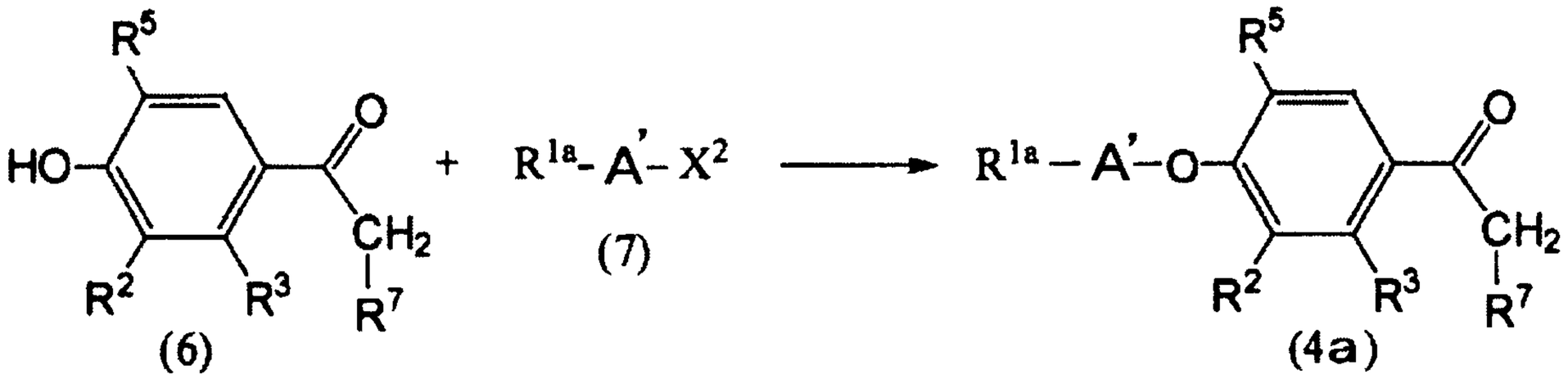


【0074】[式中，A、R^1、R^2、R^3、R^5、R^7及X^1同前。]

【0075】於反應步驟式-2中，用作起始原料之化合物(4)當中，R^1非為氫原子之化合物(4a)可藉下述反應步驟式-3所示方法製得。

【0076】[數學式3]

[反應步驟式-3]



【0077】[式中，R^{1a}為上述(1-2)~(1-12)中之任一基。A'為C1~C6伸烷基。R^2、R^3、R^5及R^7同前。X^2為鹵素原子。]

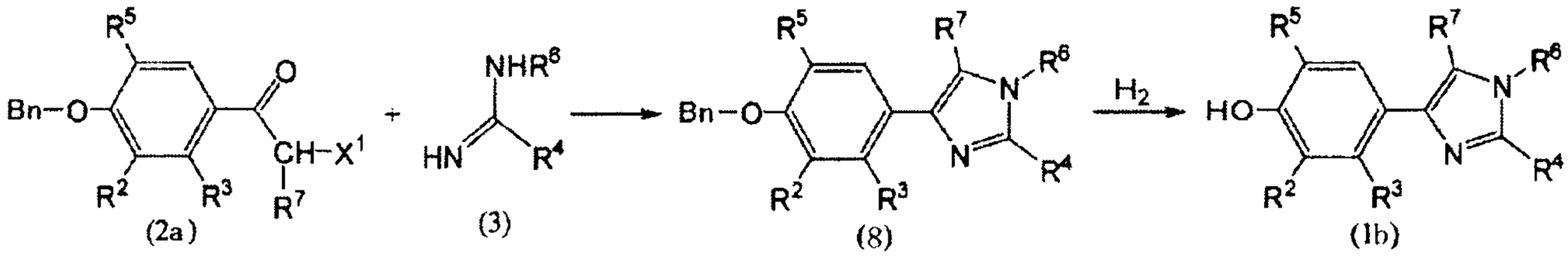
【0078】可藉由使上述習知化合物(6)與鹵化物(7)反應而轉換為化合物(4a)。反應可在選自於由N,N-二甲基甲醯胺(DMF)、N,N-二甲基乙醯胺(DMA)及二甲亞碸(DMSO)等所構成群組中之至少一種不活性溶劑中，且在選自於由碳酸鉀及碳酸鈉等所構成群組中之至少一種鹼存在下，於室溫~溶劑沸點附近之溫度下進行2~30小時左右。於此，相對於1莫耳之化合物(6)，可使用1~2莫耳之鹵化物(7)，且相對於1莫耳之化合物(6)，可使用1~3莫耳之鹼。

【0079】R^1為氫原子之通式(1)所示苯基咪唑化合物(1b)可藉下述反應步驟式-4所示方法合成。首先，按上述反應步驟式-1之方法合成出化合物(8)，之後進行接觸還

原即可藉此製得化合物(1b)。該接觸還原可在氫氣環境中且在選自於由鈀-碳及氧化鉑等所構成群組中之至少一種催化劑存在下，視需要添加乙酸等之酸，於選自於由甲醇、乙醇及水等所構成群組中之至少一種溶劑中，在室溫附近之溫度下進行10分鐘~12小時左右。

【0080】[數學式4]

[反應步驟式-4]

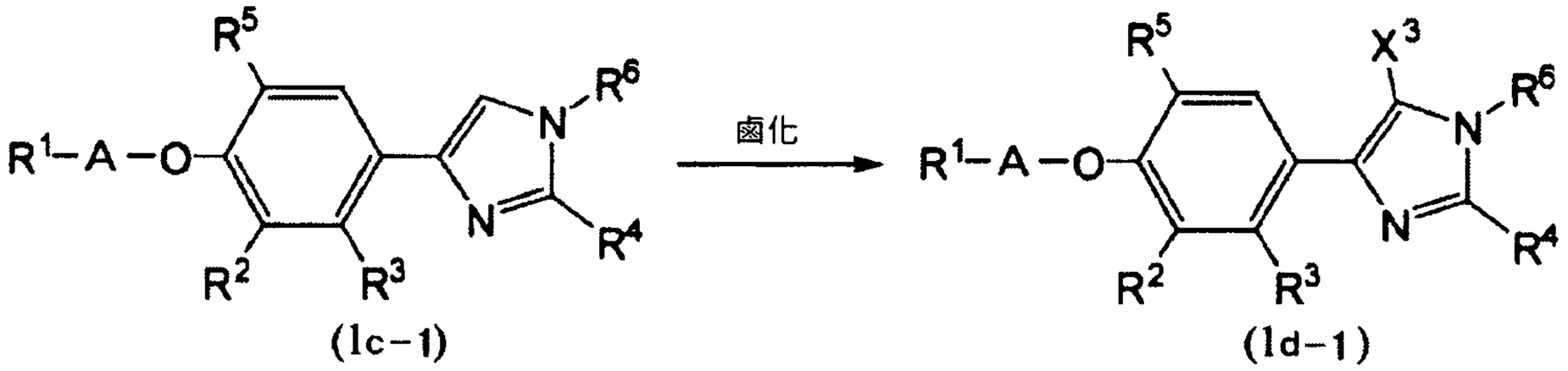


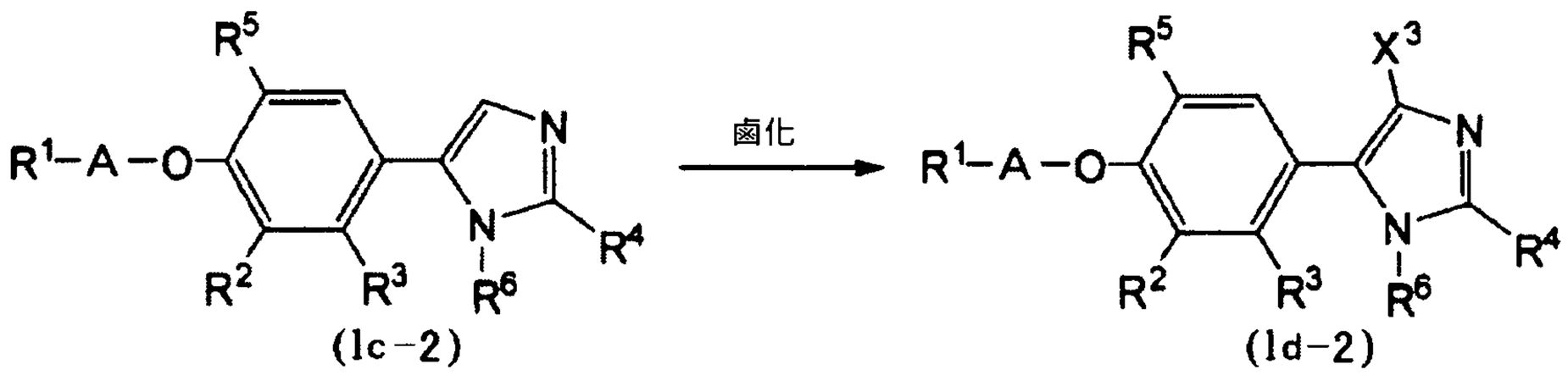
【0081】[式中，R^2、R^3、R^4、R^5、R^6、R^7及X^1同前。Bn表示苄基。]

【0082】如下述反應步驟式-5所示，R^7為氫原子之通式(1)所示苯基咪唑化合物((1c-1)及(1c-2))可藉鹵化而轉換為R^7為鹵素原子之化合物(1d-1)及(1d-2)。該鹵化反應可在選自於由N,N-二甲基甲醯胺、二甲亞碸及四氫呋喃等所構成群組中之至少一種不活性溶劑中，使用相對於苯基咪唑化合物((1c-1)或(1c-2))為等莫耳~1.3倍莫耳量之選自於由N-溴琥珀醯亞胺、N-氯琥珀醯亞胺及N-碘琥珀醯亞胺等所構成群組中的至少一種鹵化劑，在0℃~70℃下進行需時0.5~6小時。

【0083】[數學式5]

[反應步驟式-5]



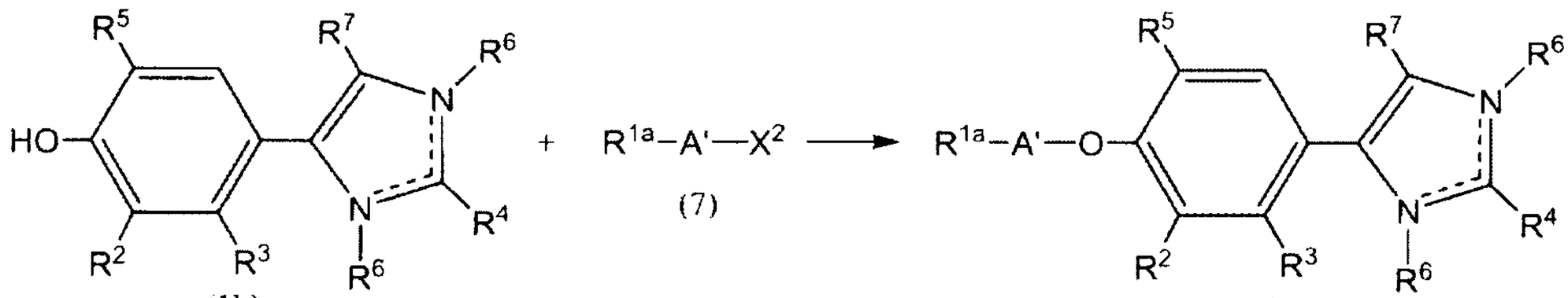


【0084】[式中，A、R^1、R^2、R^3、R^4、R^5及R^6同前。X^3表示鹵素原子。]

【0085】反應步驟式-4所得R^1為氫原子之通式(1)所示苯基咪唑化合物(1b)如下述反應步驟式-6所示，可藉由與鹵化物(7)反應而轉換為化合物(1e)。該反應可在與上述反應步驟式-3之條件相同的條件下進行。

【0086】[數學式6]

[反應步驟式-6]



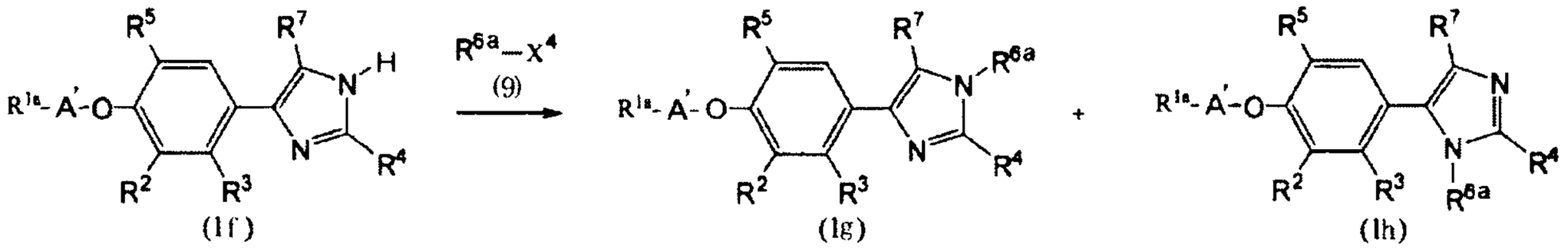
【0087】[式中，A'、R^{1a}、R^2、R^3、R^4、R^5、R^6、R^7及X^2以及虛線皆同前。]

【0088】如下述反應步驟式-7所示，R^6為氫原子之

通式(1)所示苯基咪唑化合物(1f)可藉由與化合物(9)反應而轉換成R^6為氫原子以外之基的化合物(1g)及(1h)。可在選自於由N,N-二甲基甲醯胺及二甲亞碸等所構成群組中之至少一種不活性溶劑中，在選自於由無水碳酸鉀及無水碳酸鈉等所構成群組中之至少一種鹼存在下，使用相對於苯基咪唑化合物(1f)為1~2倍莫耳量之化合物(9)來進行該反應。上述鹼之使用量並未特別受限，但相對於苯基咪唑化合物(1f)通常為1~5倍莫耳量。該反應可在0℃~室溫附近溫度下進行2~24小時。

【0089】[數學式7]

[反應步驟式-7]



【0090】[式中，A’、R^{1a}、R^2、R^3、R^4、R^5及R^7同前。R^{6a}表示C1~C6烷氧基C1~C6烷基或可經C3~C10環烷基取代之C1~C6烷基，X^4表示鹵素原子。]

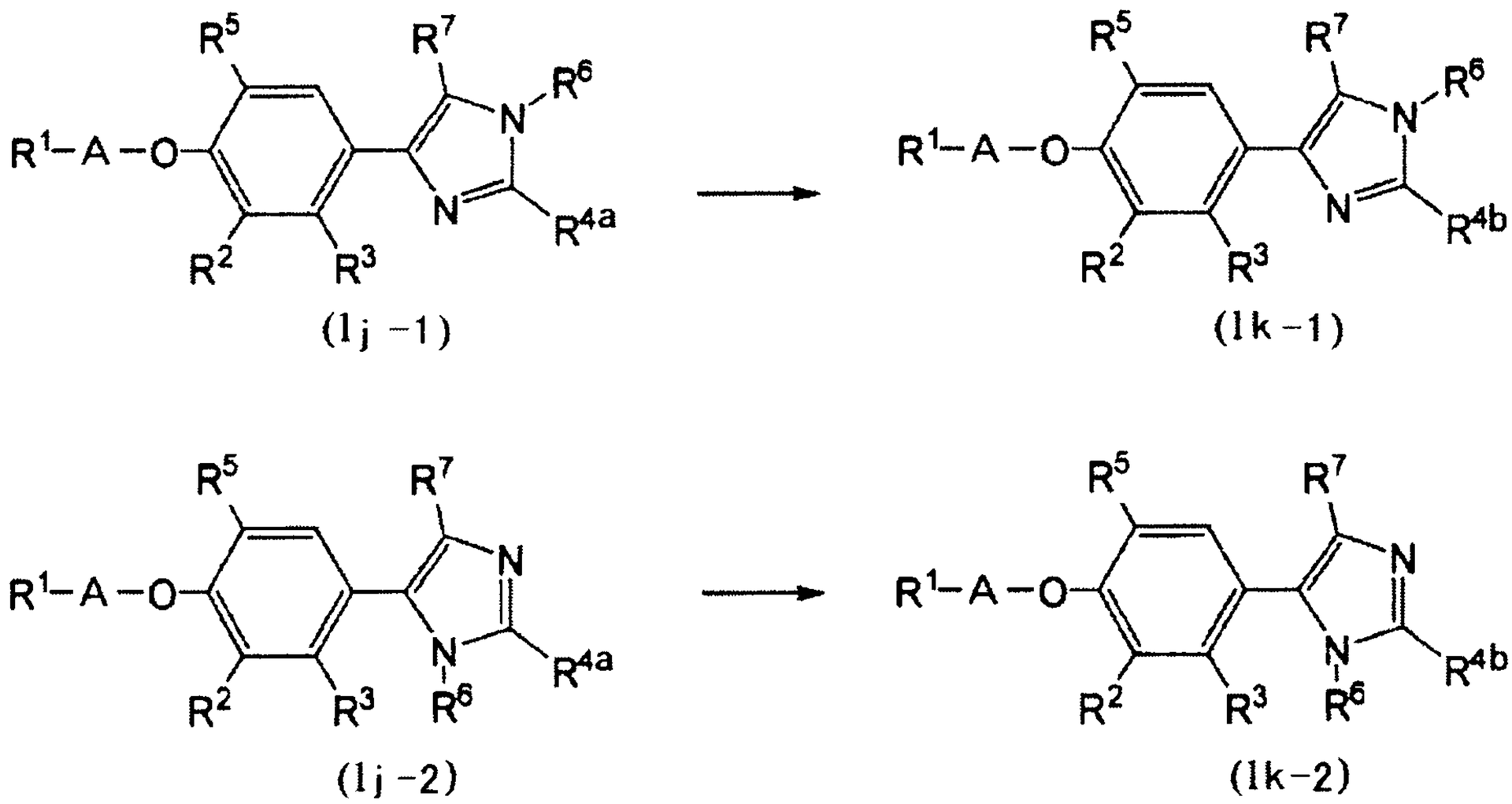
另，化合物(1f)為其中之R^7為氫原子之化合物時，有時會有幾乎無法獲得化合物(1h)的情況。另一方面，化合物(1f)為其中之R^7非為氫原子之化合物時，有時會有幾乎無法獲得化合物(1g)的情況。

【0091】如下述反應步驟式-8所示，R^{4a}為具有鹵素原子作為取代基之吡啶基的苯基咪唑化合物(1j-1)及(1j-2)可轉換成將該鹵素原子取代為氰基之化合物(1k-1)

及(1k-2)。該反應係以下述方式進行：在選自於由N,N-二甲基甲醯胺、二甲亞碸、N-甲基吡咯啶酮及甲苯等所構成群組中之至少一種不活性溶劑中，使用1~2倍莫耳量之選自於由氰化鋅、氰化銅、氰化鈉及硫代氰酸銅等所構成群組中之至少一種氰化物，並適當添加選自於由肆(三苯基膦)鈀、肆(三苯基膦)鉑及1,2-雙(二苯基膦基)乙烷二氯化鈀(II)等所構成群組中之至少一種催化劑。該反應可在50~150℃下進行0.5~15小時左右。

【0092】[數學式8]

[反應步驟式-8]



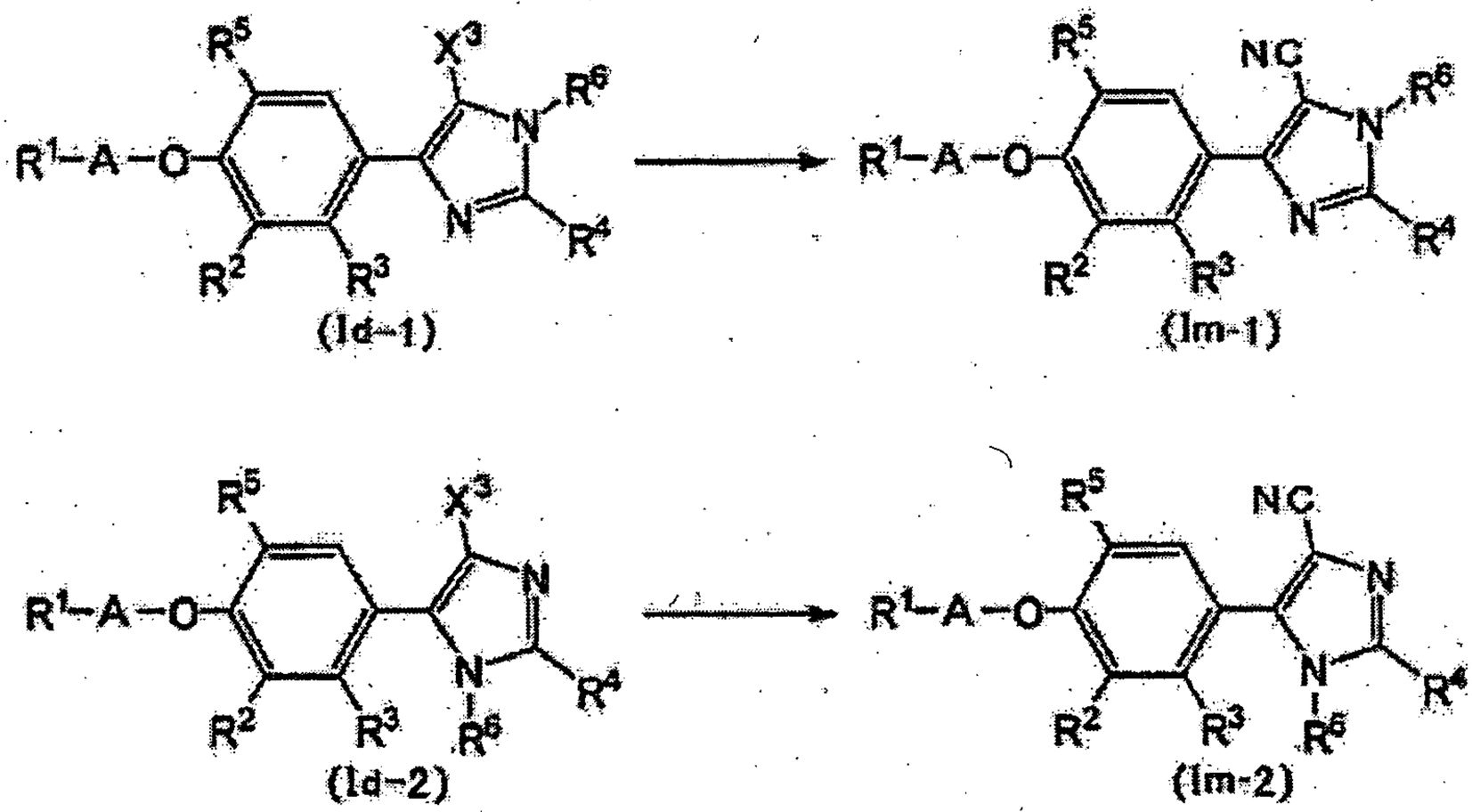
【0093】[式中，A、R^1、R^2、R^3、R^5、R^6及R^7同前。R^{4a}表示具有鹵素原子作為取代基之吡啶基，R^{4b}表示具有氰基作為取代基之吡啶基。]

【0094】如下述反應步驟式-9所示，R^7為鹵素原子之化合物(1d-1)及(1d-2)分別可轉換成將該鹵素原子取代為氰基之化合物(1m-1)及(1m-2)。該反應可按前述反應

步驟式-8所示方法進行。

【0095】[數學式9]

[反應步驟式-9]

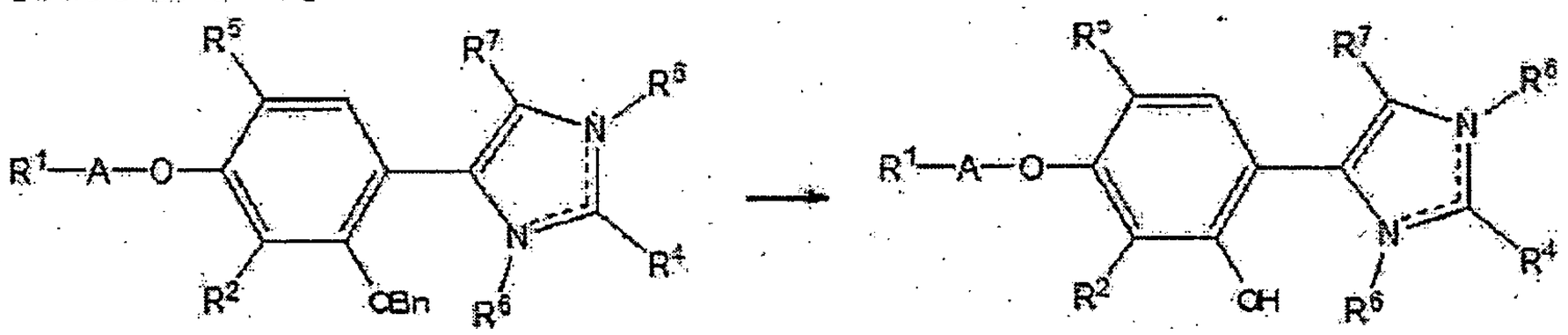


[式中，A、R^1、R^2、R^3、R^4、R^5、R^6及X^3同前。]

【0096】如下記反應步驟式-10所示，R^3為苄氧基之化合物(1n)可轉換成R^3為羥基之化合物(1P)。該反應可按前述反應步驟式-4所示接觸還原法來進行。

【0097】[數學式10]

[反應步驟式-10]



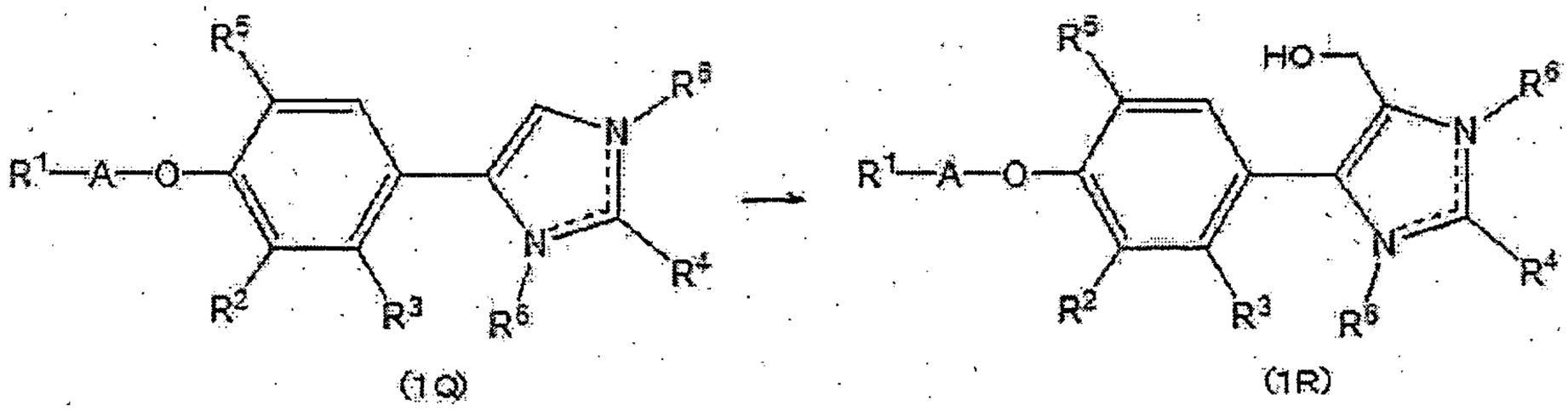
[式中，A、R^1、R^2、R^3、R^4、R^5、R^6、R^7及Bn同前。]

【0098】如下述反應步驟式-11所示，R^7為氫原子之化合物(1Q)可轉換成R^7為羥甲基之化合物(1R)。該反應

可藉下式方式實施：在選自於由甲醇、乙醇、四氫呋喃、1,4-二噁烷等所構成群組中之至少一種不活性溶劑中，於鹼存在下與相對於化合物(1Q)為1~5倍莫耳量之甲醛反應。鹼可例示如氫氧化鉀及氫氧化鈉等，通常以水溶液形式添加。此外，甲醛也同樣可以水溶液形態使用。反應係於室溫~100℃下進行2~15小時左右。

【0099】[數學式11]

[反應步驟式-11]



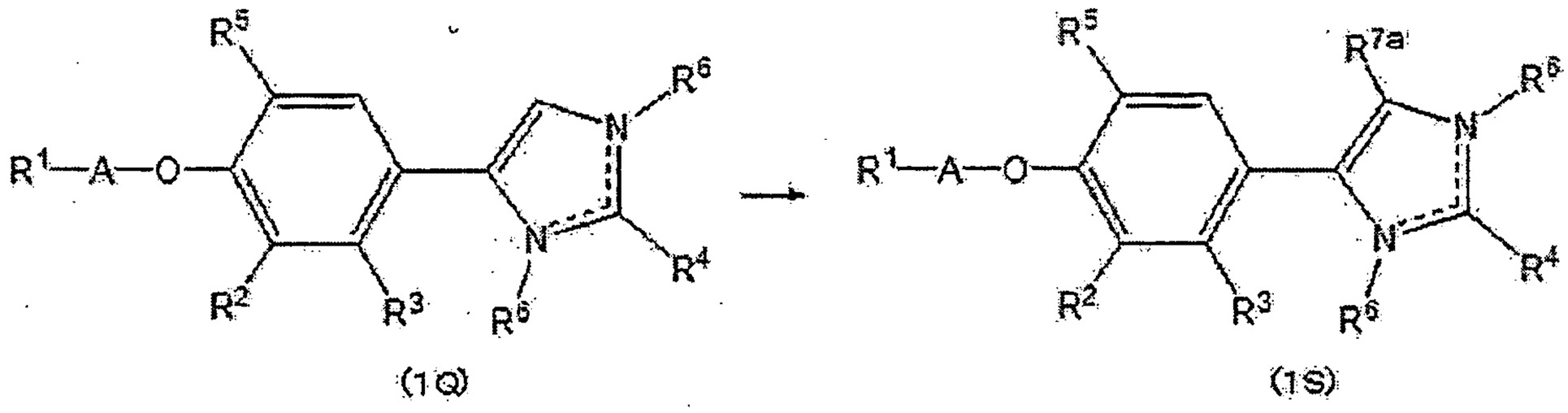
[式中，A、R^1、R^2、R^3、R^4、R^5及R^6同前。]

【0100】如下述反應步驟式-12所示，R^7為氫原子之化合物(1Q)可轉換成R^7為經鹵素取代之C1~C6烷基的化合物(1S)。該反應可適於採用梅本氏等人所發現之方法[Tetrahedron Lett., 31, 3579-3582 (1990))]。亦即，可藉由下述方式進行：在N,N-二甲基甲醯胺、N,N-二甲基乙醯胺及二甲亞碸等之不活性溶劑中，與相對於化合物(1Q)為1~3倍莫耳量之三氟甲基化劑(S-(三氟甲基)二苯并噻鎓四氟硼酸鹽))等經鹵素取代之C1~C6烷基化劑反應。該反應宜將相對於化合物(1Q)為1~3倍莫耳量之1,4-二氮雜二環[2.2.2]辛烷、二氮雜二環十一烯及三乙胺、N,N-二甲基胺基吡啶等有機鹼添加到反應系統中，一般

於0℃~50℃之溫度下實施0.5~10小時左右。

【0101】[數學式12]

[反應步驟式-12]



[式中，A、R^1、R^2、R^3、R^4、R^5及R^6同前。R^{7a}表示經鹵素取代之C1~C6烷基。]

【0102】通式(1)所示之苯基咪唑化合物可為其藥學上可接受之鹽。藥學上可接受之鹽並未特別受限，舉例來說，可為鹽酸鹽、硝酸鹽、硫酸鹽、溴化氫酸鹽、磷酸鹽、碳酸鹽、磺酸鹽、乙酸鹽、乳酸鹽及檸檬酸鹽所構成群組中之至少一種。此等酸加成鹽可依照常法來製造。

【0103】通式(1)所示苯基咪唑化合物有時存在著以碳原子作為不對稱中心之光學異構物。通式(1)所示苯基咪唑化合物包含消旋物(此種光學異構物之混合物)及各個光學異構物之光學活性物。光學異構物可利用習知之各種分割法予以分離。

【0104】前述各反應步驟式所示各步驟中之目的化合物可藉一般之分離手法而容易地分離純化。該手法可例示如吸附層析法、製備型薄層層析法、再結晶及溶劑萃取等。

【0105】通式(1)所示苯基咪唑化合物及其藥學上可

接受之鹽具有脂蛋白脂酶(LPL)之活性化作用，其作為LPL活性化劑在高血脂症、動脈硬化、肥胖等之預防及治療上甚有用。因此，通式(1)所示苯基咪唑化合物及其藥學上可接受之鹽可作為高血脂症預防及治療劑、抗動脈硬化劑及/或抗肥胖劑來利用。

【0106】提供一種包含通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽的醫藥組成物。該醫藥組成物可為一般之醫藥製劑形態。醫藥組成物除了通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽以外，還可含有製劑學上可接受且藥學上可接受之任意載體。藥學上可接受之載體可例示如充填劑、增量劑、結合劑、保濕劑、崩解劑、表面活性劑、潤滑劑等可因應製劑使用形態而被通常使用之稀釋劑乃至於賦形劑。其等可因應所得製劑之投藥單位形態來適當選擇使用。

【0107】就上述醫藥製劑之投藥單位形態而言，可視治療目的來選擇各種形態。代表劑形可列舉如錠劑、丸劑、粉劑、液劑、懸濁劑、乳劑、顆粒劑、膠囊劑、栓劑、注射劑(液劑、懸濁劑等)及軟膏劑等。

【0108】成形為錠劑形態之際，上述製劑學上可接受之載體可使用諸如選自於由下列者構成群組中之至少一種：乳糖、白糖、氯化鈉、葡萄糖、尿素、澱粉、碳酸鈣、高嶺土、結晶纖維素、矽酸及磷酸鉀等賦形劑；水、乙醇、丙醇、單糖漿、葡萄糖液、澱粉液、明膠溶液、羧甲基纖維素、羧丙基纖維素、甲基纖維素及聚乙烯吡咯啶

酮等結合劑；羧甲基纖維素鈉、羧甲基纖維素鈣、低取代度羥丙基纖維素、乾燥澱粉、藻酸鈉、寒天粉、昆布糖粉末、碳酸氫鈉及碳酸鈣等崩解劑；聚氧乙烯山梨醇酐脂肪酸酯類、月桂基硫酸鈉及硬脂酸單甘油酯等界面活性劑；白糖、硬脂、可可粉及氫化油等崩解抑制劑；第4級銨鹼及月桂基硫酸鈉等吸收促進劑；甘油及澱粉等保濕劑；澱粉、乳糖、高嶺土、皂土及膠體狀矽酸等吸附劑；純化滑石、硬脂酸鹽、硼酸粉末及聚乙二醇等潤滑劑等。進一步來說，錠劑可視需要而製成施加有一般皮層之錠劑，諸如糖衣錠、明膠包覆錠、腸溶被衣錠、膜衣錠或雙層錠或者多層錠。

【0109】成形為丸劑形態之際，製劑學上可接受之載體可使用諸如選自於由下列者所構成群組中之至少一種：葡萄糖、乳糖、澱粉、可可脂、硬化植物油、高嶺土及滑石等賦形劑；阿拉伯膠粉末、西黃蓍膠粉末、明膠及乙醇等結合劑；昆布糖及寒天等崩解劑等。

【0110】成形為栓劑形態之際，製劑學上可接受之載體可使用諸如選自於由下列者所構成群組中之至少一種：聚乙二醇、可可脂、高級醇及高級醇之酯類以及明膠及半合成甘油酯等。

【0111】膠囊劑係依常法將通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽與上述例示各種製劑學上可接受之載體混合再填充到硬質明膠膠囊或軟質明膠膠囊等中來調製。

【0112】調製為液劑、乳劑或懸濁劑等注射劑時，其等宜殺菌且與血液等張。製為此等形態之際，稀釋劑可使用諸如選自於由水、乙醇、聚乙烯二醇(macrogol)、丙二醇、乙氧基化異硬脂基醇、聚氧化異硬脂基醇及聚氧乙烯山梨糖醇酐脂肪酸酯等所構成群組中之至少一種。此時，亦可使醫藥製劑中含有足以調製等張性溶液之充分量的食鹽、葡萄糖或甘油。此外，亦可添加一般之溶解輔劑、緩衝劑或無痛化劑等。

【0113】調製成膏、霜或凝膠等軟膏劑形態時，稀釋劑可使用諸如選自於由白色凡士林、石蠟、甘油、纖維素衍生物、聚乙二醇、聚矽氧及皂土等所構成群組中之至少一種。

【0114】醫藥組成物亦可視需要而含有著色劑、保存劑、香料、風味劑、甘味劑等或其他醫藥品。

【0115】醫藥組成物中之通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽的量並未特別受限，可自廣泛範圍中適當選擇。醫藥組成物中之摻合比率一般為約0.5~90重量%，且宜為約1~85重量%。

【0116】醫藥組成物之投藥方法並未特別受限，可視各種製劑形態、患者之年齡、性別、疾病程度及其他條件等來決定。舉例來說，錠劑、丸劑、液劑、懸濁劑、乳劑、顆粒劑及膠囊劑為經口投藥，注射劑係單獨或與葡萄糖、胺基酸等一般之輸液混合而投藥至靜脈內、肌肉內、皮內、皮下或腹腔內，栓劑則投藥到直腸內。

【0117】醫藥組成物之投藥量可依其用法、患者之年齡、性別、其他條件、疾病程度等來適當選擇。舉例來說，可令通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽的量為1日每1成人每1kg體重約0.5~20mg左右，且以1~10mg左右為佳。醫藥組成物可1日投藥1次或分2~4次投藥。

【0118】提供一種LPL活性化方法，包含：對需要LPL活性化處理之患者投予有效量之通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽。

【0119】提供一種高血脂症之預防或治療方法，包含：對需要預防或治療高血脂症之患者投予有效量之通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽。

【0120】提供一種動脈硬化症之預防或治療方法，包含：對需要預防或治療動脈硬化之患者投予有效量之通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽。

【0121】提供一種肥胖之治療方法，包含：對需要治療肥胖之患者投予有效量之通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽。

【0122】提供下述用途：用以製造LPL活性化組成物之通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽的用途；用以製造預防或治療高血脂症用組成物之通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽的用途；及，用以製造抗肥胖組成物之通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽的用途。

實施例

【0123】以下，參照參考例及實施例來具體說明本發明，但本發明不受其等所侷限。

【0124】[參考例1]

2-溴-1-[4-(4-溴-2-氟苄氧基)-3-甲氧基苯基]乙酮之製造

與WO2010/090200之參考例1同樣地製得熔點為139~141℃之2-溴-1-[4-(4-溴-2-氟苄氧基)-3-甲氧基苯基]乙酮。

【0125】[參考例2]

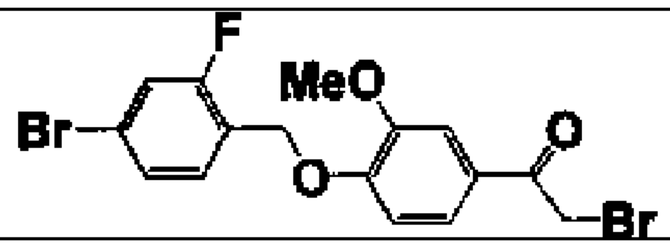
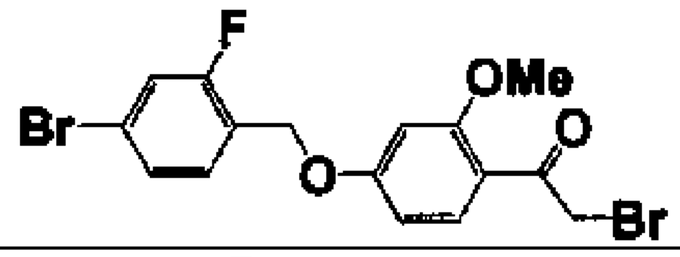
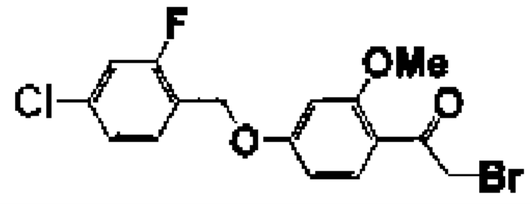
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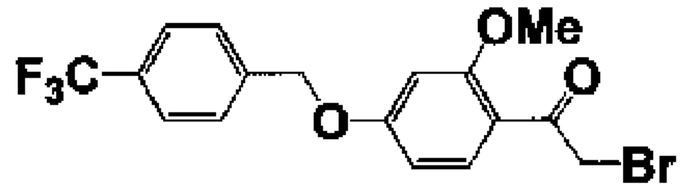
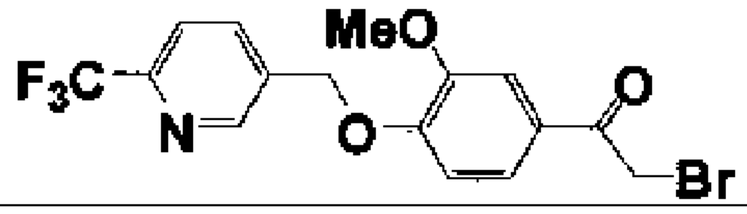
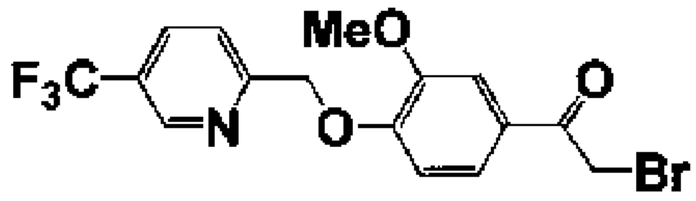
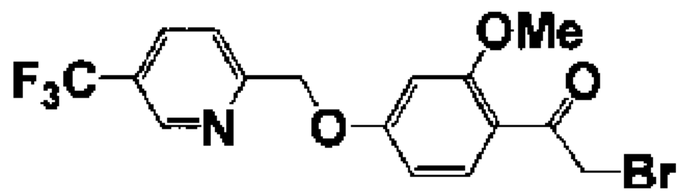
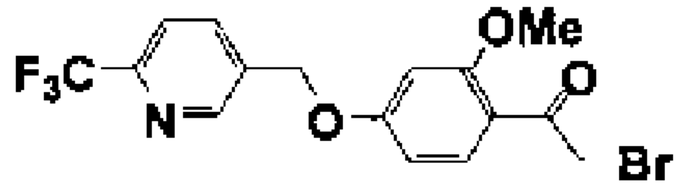
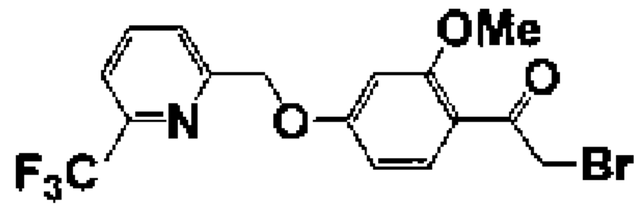
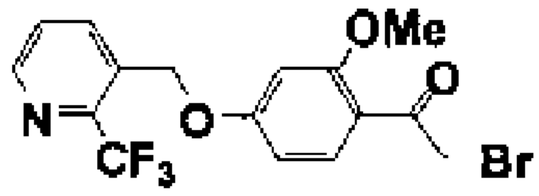
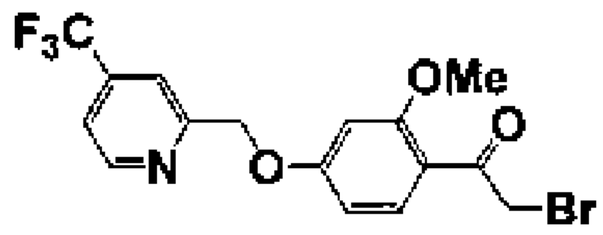
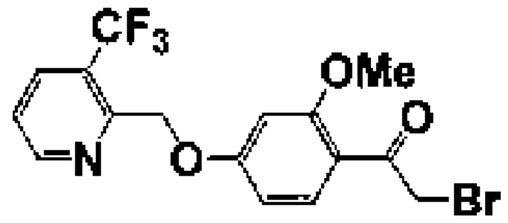
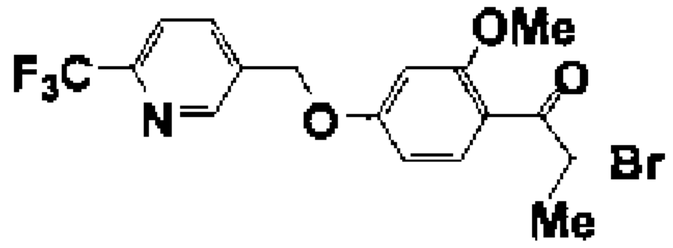
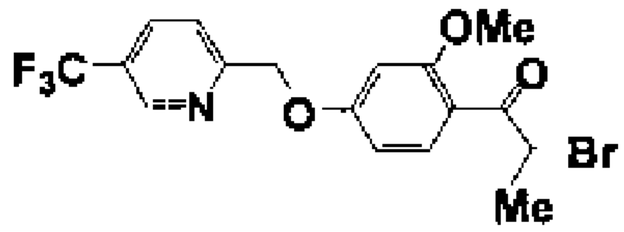
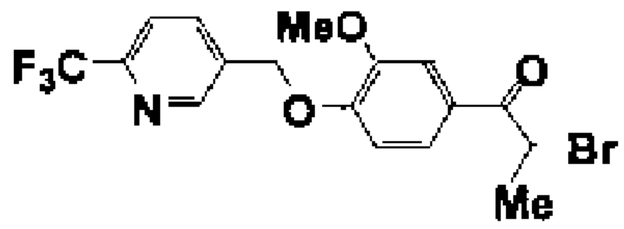
與WO2010/090200之參考例8同樣地製得熔點為122~123℃之2-溴-1-[4-(4-溴-2-氟苄氧基)-2-甲氧基苯基]乙酮。

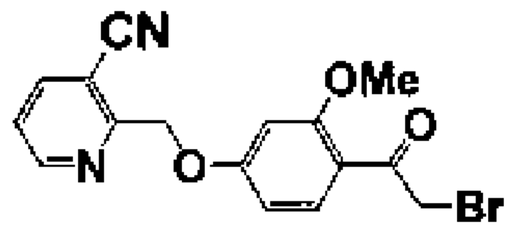
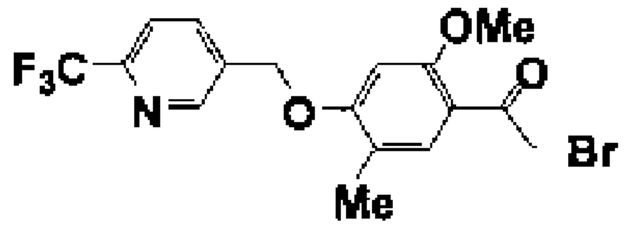
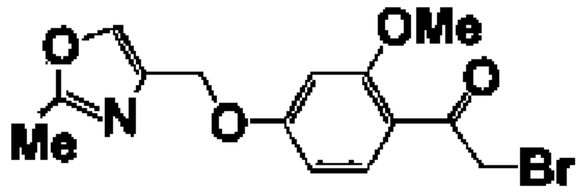
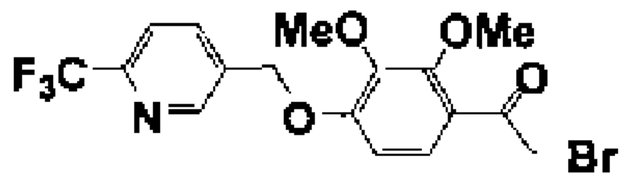
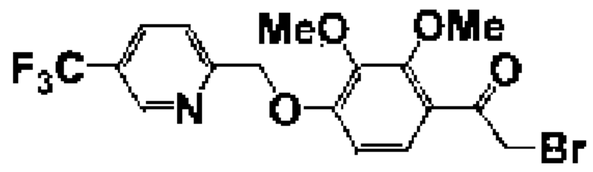
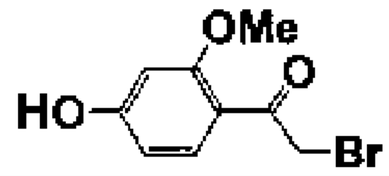
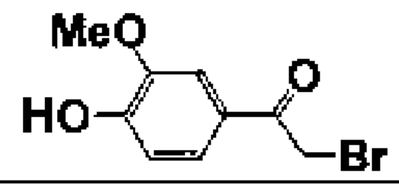
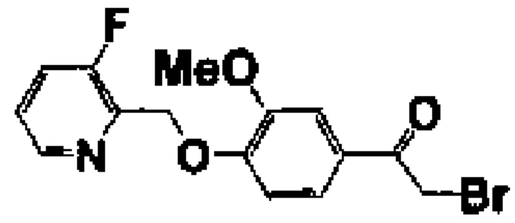
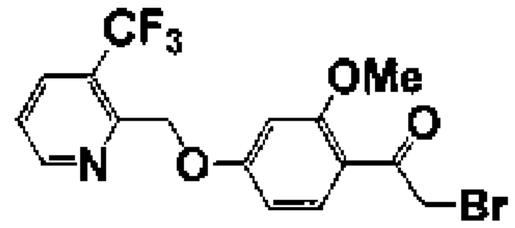
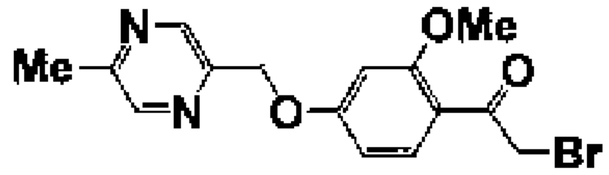
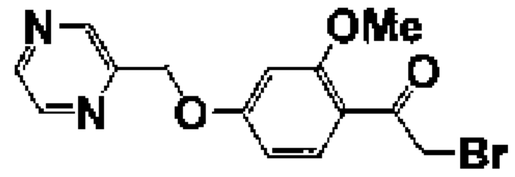
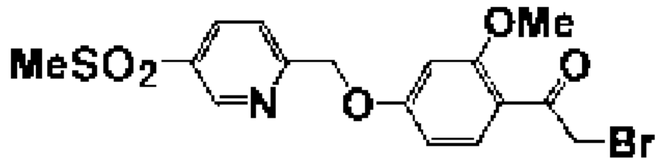
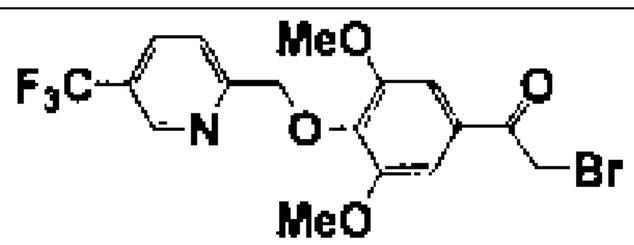
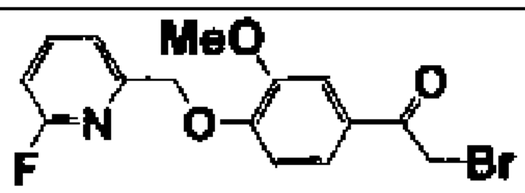
【0126】[參考例3~30]

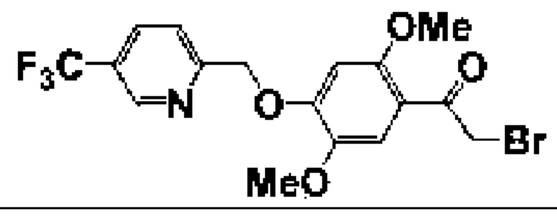
與參考例1或2同樣地合成出具有下述表1所示結構及熔點之參考例3~30之化合物。

【0127】[表1]

參考例No.	結構	熔點(°C)
1		139-141
2		122-123
3		118-121

4		125-128
5		138-142
6		145-148
7		144-148
8		126-131
9		111-112
10		101-105
11		112-116
12		101-103
13		88-90
14		86-88
15		115-117

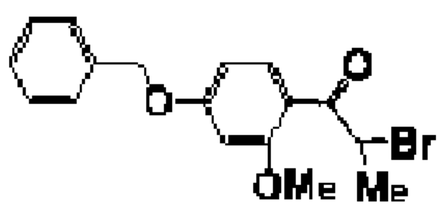
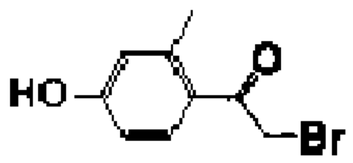
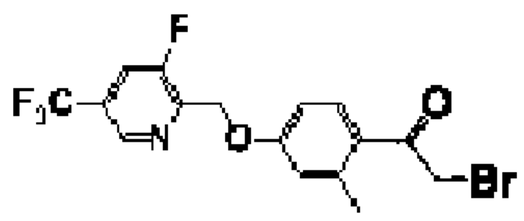
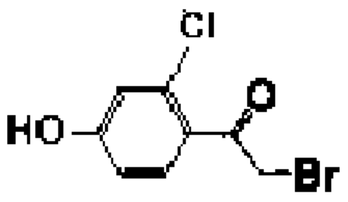
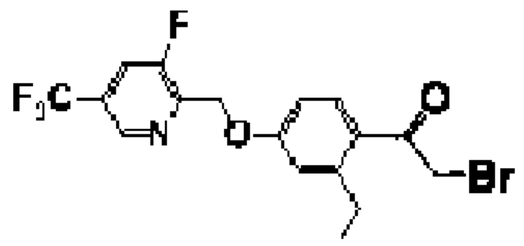
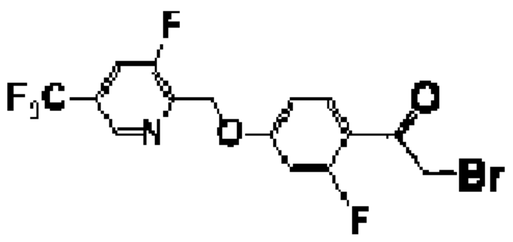
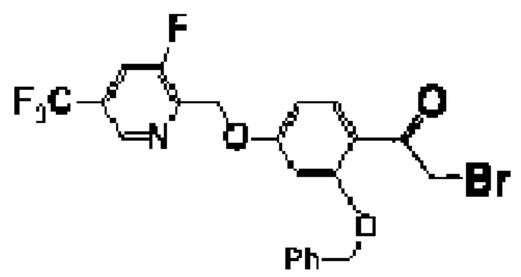
16		124-126
17		163-165
18		127-129
19		109-113
20		146-153
21		129-134
22		78-79
23		124-126
24		101-103
25		106-110
26		92-97
27		160-163
28		72-75
29		140-141

30		105-109

【0128】[參考例31~37]

與參考例1或2同樣地進一步合成出具有下述表2所示結構及熔點之參考例31~37之化合物。

【0129】[表2]

參考例 No.	結構	熔點(°C)
31		70-72
32		128-130
33		油狀
34		90-93
35		油狀
36		71-73
37		108-110

【0130】[實施例1]

2-氟-5-[5-[2-甲氧基-4-((6-(三氟甲基)吡啶-3-基)甲氧

基)苯基]-1H-咪唑-2-基]吡啶之製造

將參考例8所得化合物6.0g(14.8mmol)、6-氟菸醯亞胺醯胺乙酸鹽(6-fluoronicotineimidamide acetic acid salt)3.0g(14.8mmol)及碳酸氫鉀5.9g(59.4mmol)加入水25mL與四氫呋喃75mL之混合溶劑中，於80℃下攪拌8小時。之後，加入乙酸乙酯200mL，以水、飽和食鹽水依序洗淨，再以硫酸鎂乾燥。減壓餾除溶劑後，將所得結晶以甲醇洗淨。過濾結晶並於40℃下真空乾燥1小時，製得4.6g之目的化合物(產率70%)。

【0131】[實施例2~108]

與實施例1同樣地製出具有下述表3所示結構及熔點之實施例2~108之化合物。

【0132】[實施例109]

4-[2-(6-氟吡啶-3-基)-1H-咪唑-5-基]-3-甲氧基酚之製造

使用2-溴-1-(4-苄氧基-3-甲氧基苯基)乙酮與6-氟吡啶-3-基脒，與實施例1同樣地製得5-[(5-(4-苄氧基-2-甲氧基苯基)-1H-咪唑-2-基)]-2-氟吡啶。接著，對所得化合物6.0g(16mmol)加入150mL之甲醇與7.5mL之乙酸，再於該溶液中加入600mg之鈀-碳，進行氫置換，於室溫下攪拌6小時。過濾鈀/碳後，減壓餾除溶劑，以冷甲醇洗淨結晶。於50℃下真空乾燥1小時，獲得3.7g之目的化合物(產率82%)。

【0133】[實施例110]

4-[2-(6-氟吡啶-3-基)-1H-咪唑-5-基]-2-甲氧基酚之製造

與實施例109同樣地製出具有下述表3所示結構及熔點之實施例110之化合物。

【0134】[實施例111]

5-溴-3-氟-2-[[4-(2-(6-氟吡啶-3-基)-1H-咪唑-5-基)-3-甲氧基苯氧基]甲基]吡啶之製造

將實施例109所得化合物2.0g(7.0mmol)與0.58g(4.2mmol)之無水碳酸鉀加入N,N-二甲基甲醯胺15mL中，室溫下攪拌10分鐘。於該混合液中加入2.6g(12mmol)之5-溴-2-(氯甲基)-3-氟吡啶，於100℃下攪拌3小時。反應後添加100mL之乙酸乙酯，以水及飽和食鹽水依序洗淨，再以硫酸鎂乾燥。減壓餾除溶劑後，以二氧化矽膠管柱(展開溶劑：氯仿/乙酸乙酯)分離純化殘渣，整合目的物之餾份，減壓餾除溶劑並將所得結晶以己烷洗淨，於50℃下真空乾燥1小時，獲得2.1g之目的物(產率64%)。

【0135】[實施例112~149]

與實施例111同樣地製得具有下述表3所示結構及熔點之實施例112~149之化合物。

【0136】[實施例150]

5-[5-[2-甲氧基-4-((5-(三氟甲基)吡啶-2-基)甲氧基)苯基]-1H-咪唑-2-基]2-氰吡啶之製造

對實施例94所得化合物450mg(0.98mmol)與氰化鋅172mg(1.47mmol)加入9mL之N,N-二甲基甲醯胺，再以氬置換容器內部。接著，加入339mg(0.29mmol)之肆(三

苯基膦)鈀，於80℃下攪拌1.5小時。之後加入50mL之乙酸乙酯，以水及飽和食鹽水依序洗淨，再以硫酸鎂乾燥。減壓餾除溶劑後，以庚烷洗淨殘渣。使粗生成物由甲醇再結晶，製得264mg之目的化合物(產率60%)。

【0137】[實施例151]

2-氟-5-[4-[2-甲氧基-4-((5-(三氟甲基)吡啶-2-基)甲氧基)苯基]-1-甲基-1H-咪唑-2-基]吡啶之製造

將0.68g(5.0mmol)之無水碳酸鉀與實施例124所得化合物1.0g(2.3mmol)加入10mL之N,N-二甲基甲醯胺，於室溫下攪拌10分鐘。於該混合液中加入0.18mL(2.9mmol)之碘甲烷，於室溫下攪拌一晚。於反應溶液中加入水，過濾析出之結晶，於40℃下真空乾燥3小時而製得0.97g之目的化合物(產率94%)。

【0138】[實施例152~153]

2-氯-5-[4-[2-甲氧基-4-((6-(三氟甲基)吡啶-3-基)甲氧基)苯基]-1,5-二甲基-1H-咪唑-2-基]吡啶(實施例152)及2-氯-5-[5-[2-甲氧基-4-((6-(三氟甲基)吡啶-3-基)甲氧基)苯基]-1,4-二甲基-1H-咪唑-2-基]吡啶(實施例153)之製造

使用實施例49所得化合物250mg(0.53mmol)，按實施例151之方法進行反應。反應後，加入150mL之乙酸乙酯，以水、飽和食鹽水依序洗淨，再以硫酸鎂乾燥。減壓餾除溶劑後，以二氧化矽管柱(展開溶劑：氯仿/乙酸乙酯)分離純化殘渣，分餾為2個餾份。就各個餾份減壓餾除溶劑，

以己烷洗淨結晶並於40℃下真空乾燥1小時，而獲得實施例152之化合物90mg(產率35%)與實施例153之化合物120mg(產率47%)。

【0139】[實施例154~168]

與實施例151~153同樣地製得具有下述表3所示結構與熔點之實施例154~168之化合物。

【0140】[實施例169]

2-[[4-(5-氯-2-(6-氟吡啶-3-基)-1-甲基-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-5-(三氟甲基)吡啶之製造

將實施例151所得化合物0.50g(1.0mmol)與0.16g(1.2mmol)之N-氯琥珀醯亞胺加入10mL之N,N-二甲基甲醯胺中，於50℃下攪拌4小時。減壓餾除N,N-二甲基甲醯胺後，以二氧化矽凝膠管柱分離純化殘渣(展開溶劑：氯仿/乙酸乙酯)。整合目的之餾份，減壓餾除溶劑並以正己烷洗淨所得結晶，於40℃下真空乾燥1小時而獲得0.32g之目的化合物(產率60%)。

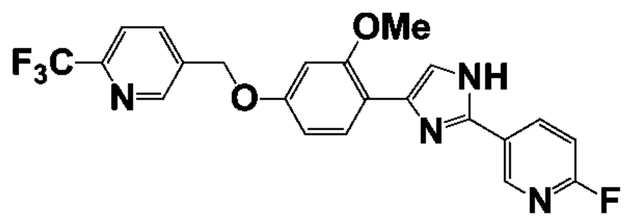
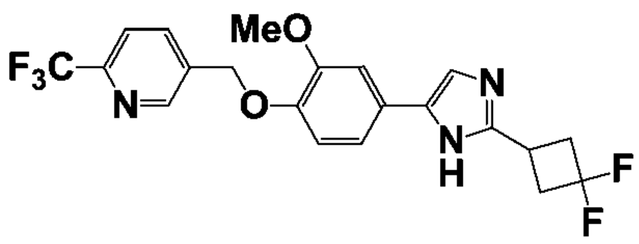
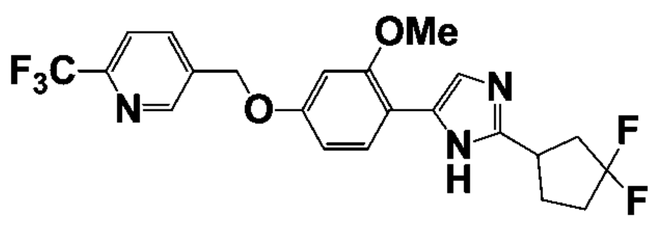
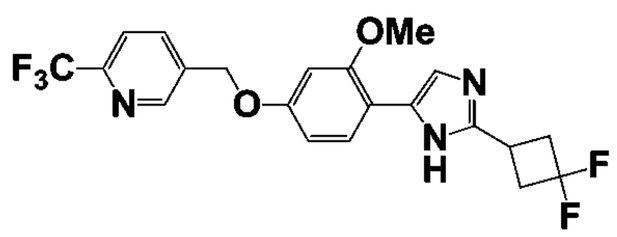
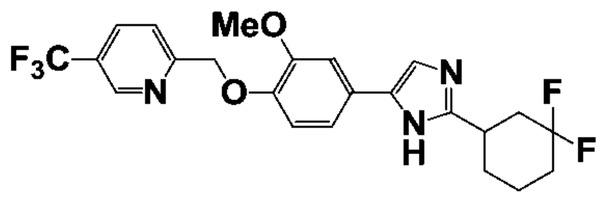
【0141】[實施例170~291]

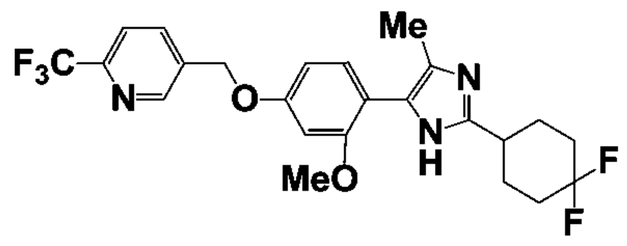
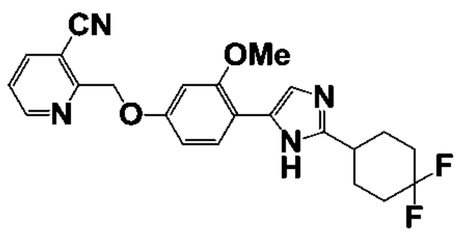
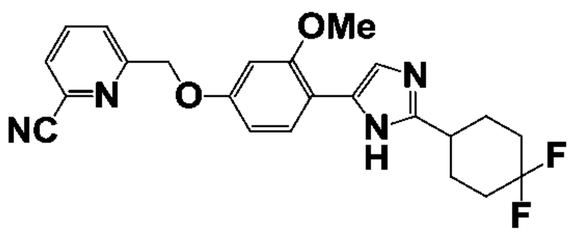
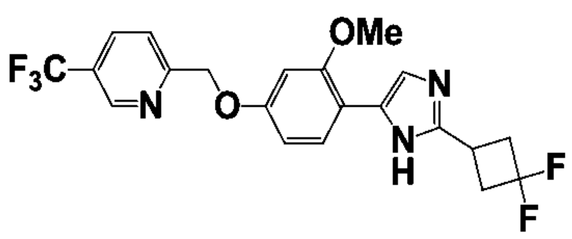
與實施例169同樣地製得具有下述表3所示結構與熔點之實施例170~291之化合物。

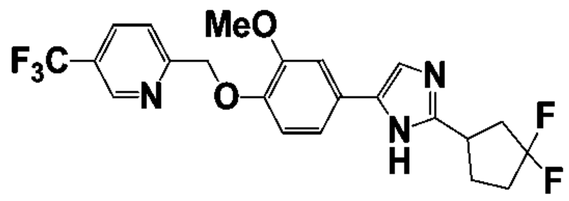
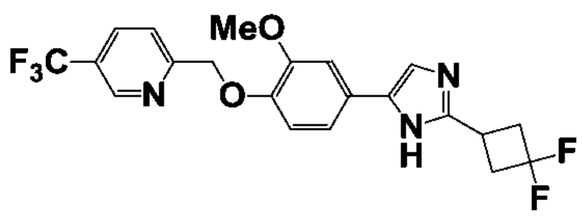
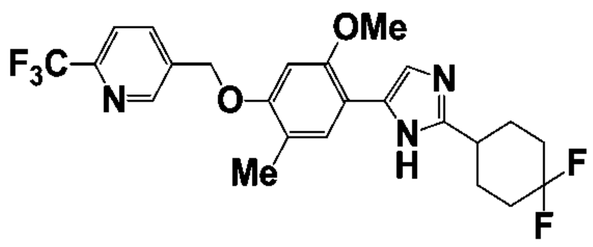
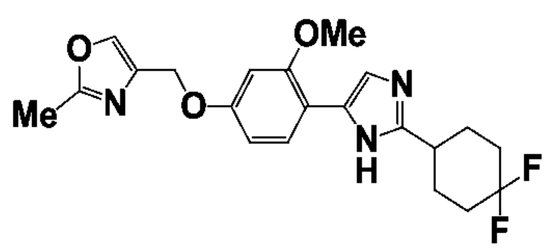
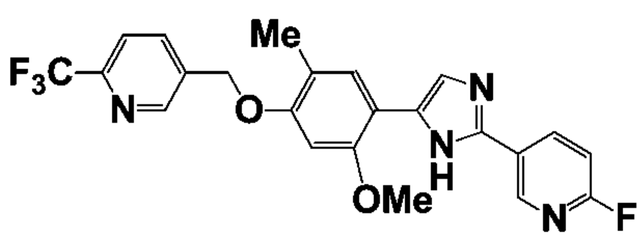
【0142】[實施例292~312]

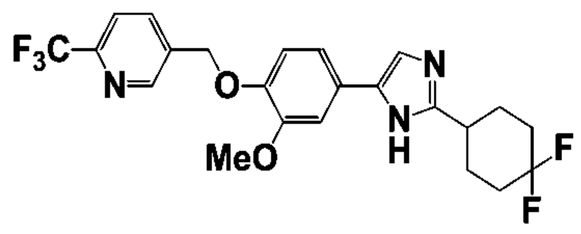
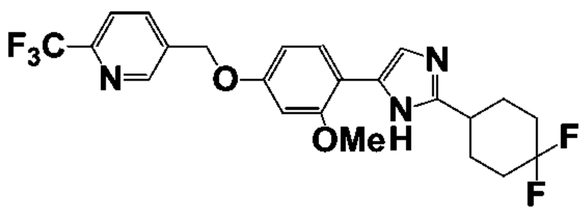
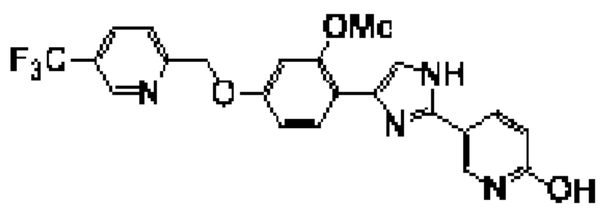
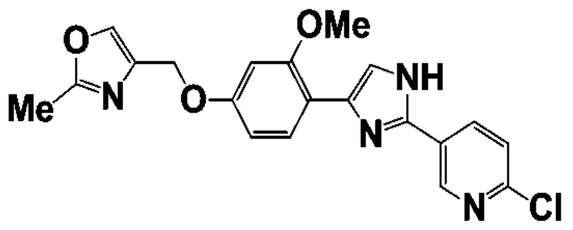
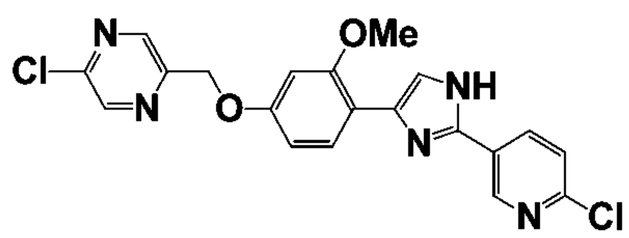
與實施例151~153同樣地製得具有下述表3所示結構與熔點之實施例292~312之化合物。

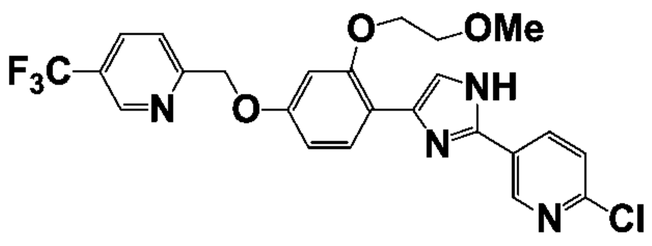
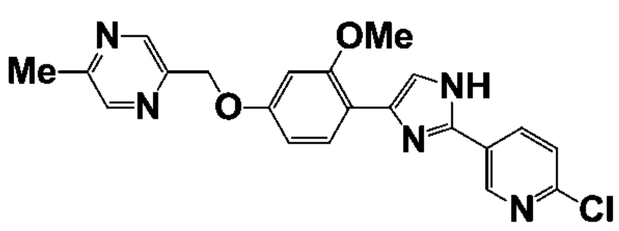
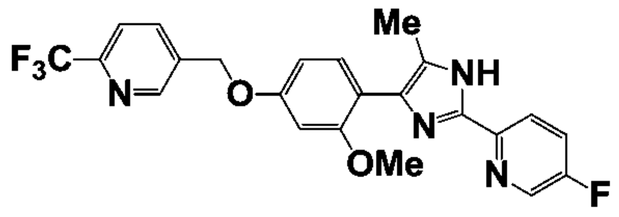
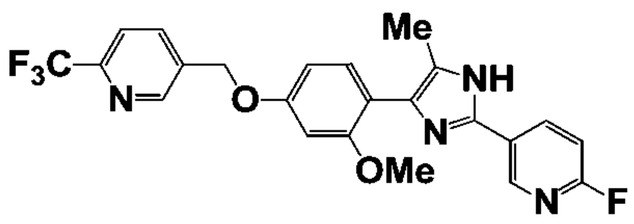
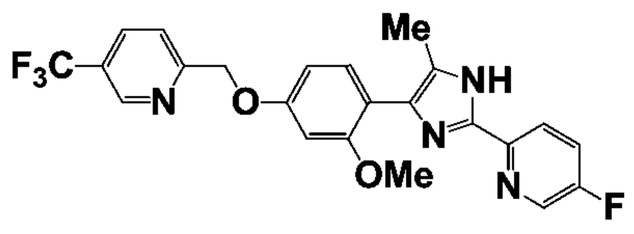
【0143】[表3]

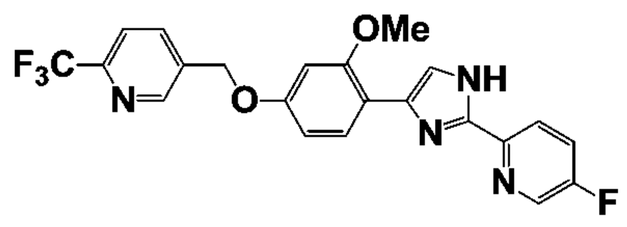
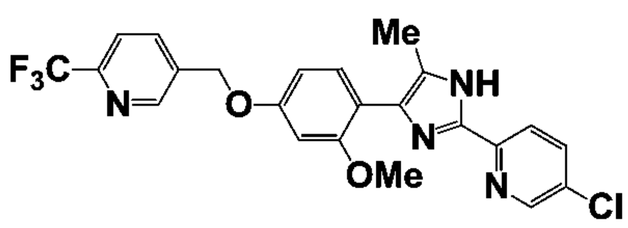
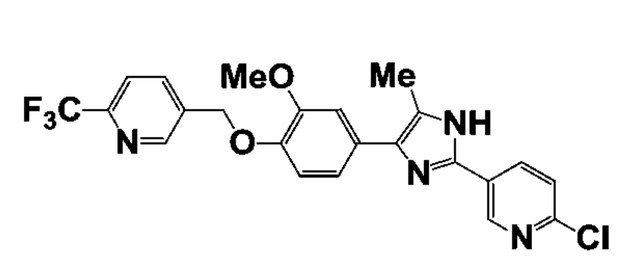
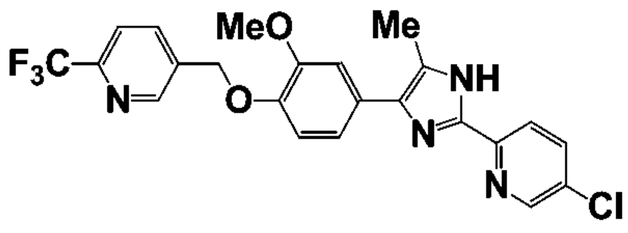
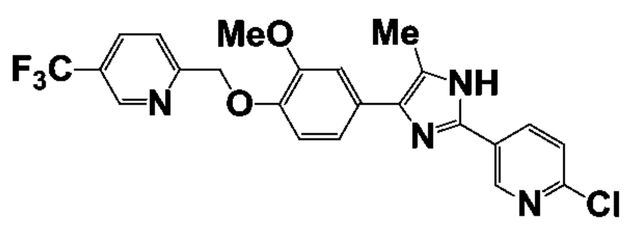
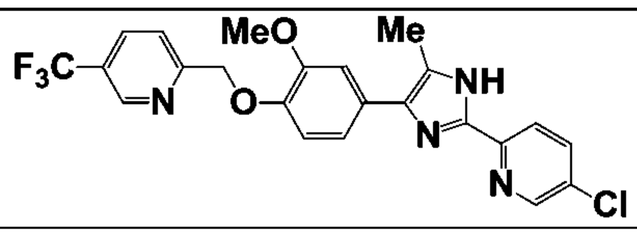
實施例 No.	結構	熔點(°C)	1H-NMR(δ:ppm)
1		165-166	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.33 (s, 2H), 6.64-6.88 (m, 2H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.58 (s, 1H), 7.95 (d, J = 7.8 Hz, 1H), 8.10 (s, 0H), 8.19 (dd, J = 7.8, 1.5 Hz, 1H), 8.50 (ddd, J = 7.8, 7.8, 1.5 Hz, 1H), 8.82 (s, 1H), 8.89 (d, J = 1.5 Hz, 1H), 12.70 (s, 1H)
2		油狀	1H-NMR (**CDCL3**) δ 2.90-3.09 (m, 4H), 3.35-3.54 (m, 1H), 3.95 (s, 3H), 5.23 (s, 2H), 6.89 (d, J = 8.3 Hz, 1H), 7.13-7.19 (m, 1H), 7.22 (dd, J = 8.3, 1.5 Hz, 1H), 7.41 (d, J = 1.5 Hz, 1H), 7.70 (d, J = 8.3 Hz, 1H), 8.00 (dd, J = 8.3, 1.5 Hz, 1H), 8.80 (d, J = 1.5 Hz, 1H), 9.04 (s, 1H)
3		非晶質	1H-NMR (**DMSO**) δ 1.92-2.48 (m, 6H), 3.87 (s, 3H), 5.29 (s, 2H), 6.64 (dd, J = 8.3, 2.4 Hz, 1H), 6.71 (d, J = 2.4 Hz, 1H), 7.32 (d, J = 2.0 Hz, 1H), 7.86-8.06 (m, 2H), 8.17 (dd, J = 8.3, 1.5 Hz, 1H), 8.87 (s, 1H), 11.78 (s, 1H)
4		167-169	1H-NMR (**CDCL3**) δ 2.87-3.09 (m, 4H), 3.39-3.54 (m, 1H), 3.94 (s, 3H), 5.19 (s, 2H), 6.58-6.68 (m, 2H), 7.19-7.34 (m, 1H), 7.39-7.65 (m, 1H), 7.72 (d, J = 8.0 Hz, 1H), 7.99 (dd, J = 8.0, 1.5 Hz, 1H), 8.81 (d, J = 1.5 Hz, 1H), 10.06 (s, 1H)
5		油狀	1H-NMR (**DMSO**) δ 1.42-1.62 (m, 2H), 1.67-2.20 (m, 5H), 2.25-2.39 (m, 1H), 2.82-3.04 (m, 1H), 3.86 (s, 3H), 5.22-5.36 (2H), 6.97 (d, J = 8.3 Hz, 1H), 7.22 (dd, J =

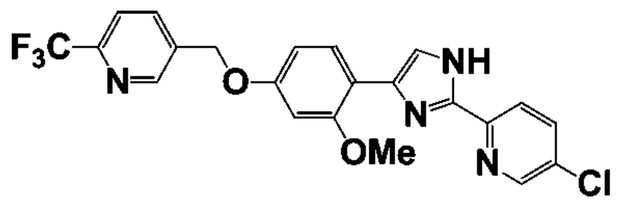
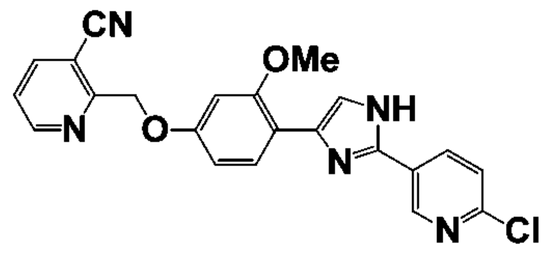
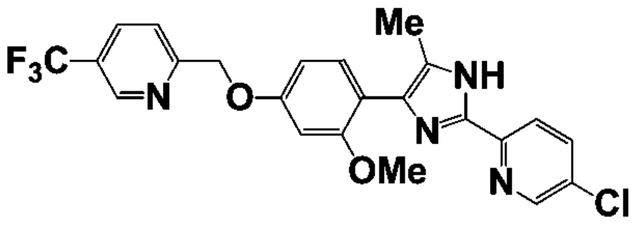
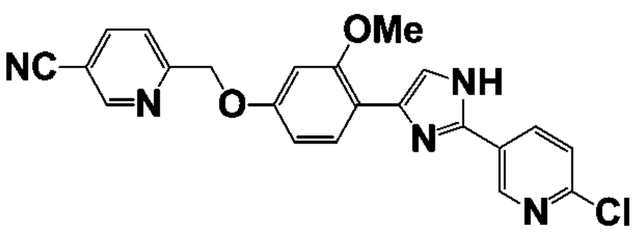
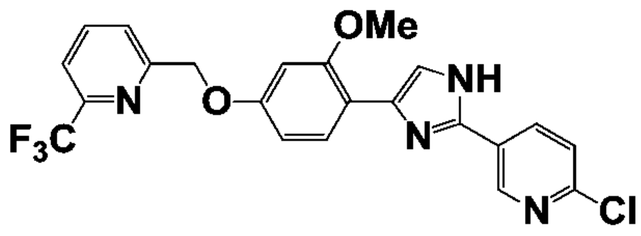
			8.3, 2.0 Hz, 1H), 7.36 (d, J = 2.0 Hz, 1H), 7.43 (s, 1H), 7.75 (d, J = 8.3 Hz, 1H), 8.27 (d, J = 8.3 Hz, 1H), 8.97 (s, 1H), 11.82 (s, 1H)
6		167-169	1H-NMR (**DMSO**) δ 1.69-2.15 (m, 11H), 2.00 (s, 3H), 2.78 (t, J = 10.0 Hz, 1H), 3.75 (s, 3H), 5.32 (s, 2H), 6.55-6.84 (m, 2H), 7.14 (d, J = 8.3 Hz, 1H), 7.96 (d, J = 7.8 Hz, 1H), 8.17 (d, J = 7.8 Hz, 1H), 8.88 (s, 1H), 11.33 (s, 1H)
7		69-89	1H-NMR (**DMSO**) δ 1.73-2.18 (m, J = 33.3 Hz, 8H), 2.81-2.95 (m, 1H), 3.85 (s, 3H), 5.32 (s, 2H), 6.66 (dd, J = 8.3, 2.4 Hz, 1H), 6.70 (d, J = 2.4 Hz, 1H), 7.29 (d, J = 1.5 Hz, 1H), 7.63 (dd, J = 7.8, 4.9 Hz, 1H), 7.93 (d, J = 8.3 Hz, 1H), 8.39 (dd, J = 7.8, 1.5 Hz, 1H), 8.86 (dd, J = 4.9, 1.5 Hz, 1H), 11.71 (s, 1H)
8		195-197	1H-NMR (**DMSO**) δ 1.73-2.17 (m, 8H), 2.81-2.94 (m, 1H), 3.86 (s, 3H), 5.25 (s, 2H), 6.65 (dd, J = 8.3, 2.4 Hz, 1H), 6.72 (d, J = 2.4 Hz, 1H), 7.28 (d, J = 2.0 Hz, 1H), 7.87 (d, J = 8.3 Hz, 1H), 7.93 (d, J = 8.3 Hz, 1H), 8.00 (d, J = 8.3 Hz, 1H), 8.11 (dd, J = 8.3, 8.3 Hz, 1H), 11.70 (s, 1H)
9			1H-NMR (**CDCL3**) δ 2.88-3.11 (m, 4H), 3.39-3.55 (m, 1H), 3.95 (s, 3H), 5.29 (s, 2H), 6.62 (dd, J = 8.8, 2.4 Hz, 1H), 6.64-6.71 (m, 1H), 7.18-7.33 (m, 1H), 7.46-7.62 (m, 1H), 7.69 (d, J = 8.3 Hz, 1H), 7.96 (dd, J = 8.3, 1.0 Hz, 1H), 8.80-8.95 (m, 1H), 10.03 (s, 1H)

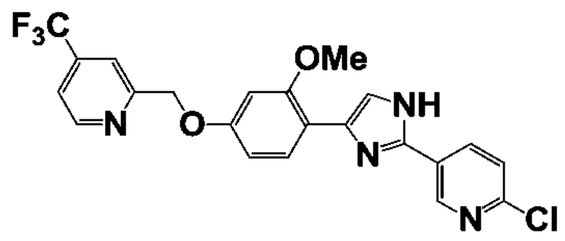
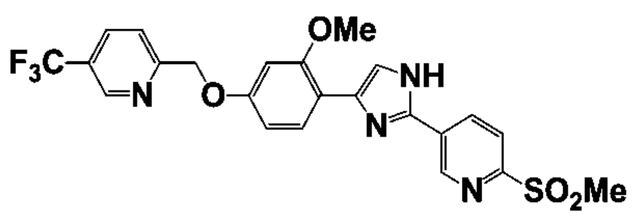
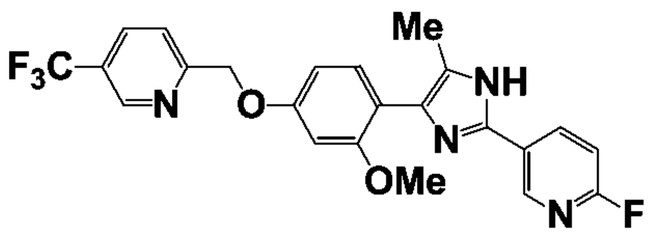
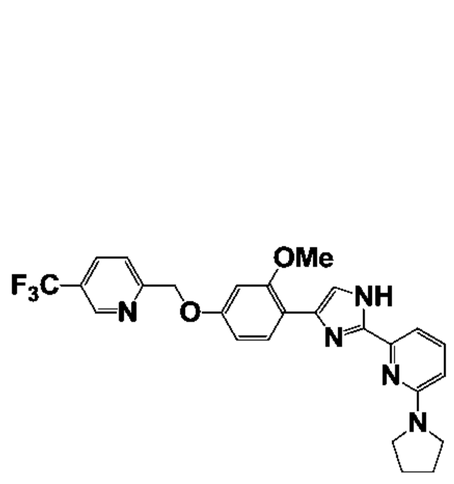
10			1H-NMR (**CDCL3**) δ 1.98-2.69 (m, 6H), 3.39-3.58 (m, 1H), 3.97 (s, 3H), 5.34 (s, 2H), 6.85 (d, J = 8.3 Hz, 1H), 7.08-7.24 (m, 2H), 7.36-7.48 (m, 1H), 7.73 (d, J = 8.3 Hz, 1H), 7.88-8.00 (m, 1H), 8.76-8.95 (m, 1H), 9.03 (s, 1H)
11			1H-NMR (**CDCL3**) δ 2.89-3.07 (m, 4H), 3.35-3.53 (m, 1H), 3.98 (s, 3H), 5.34 (s, 2H), 6.84 (d, J = 8.3 Hz, 1H), 7.08-7.24 (m, 2H), 7.35-7.49 (m, 1H), 7.73 (d, J = 8.3 Hz, 1H), 7.94 (d, J = 6.8 Hz, 1H), 8.77-8.94 (m, 1H), 9.08 (s, 1H)
12		非晶質	1H-NMR (**DMSO**) δ 1.72-2.14 (m, 8H), 2.16 (s, 3H), 2.77-2.98 (m, 1H), 3.86 (s, 3H), 5.33 (s, 2H), 6.76 (s, 1H), 7.28 (d, J = 1.5 Hz, 1H), 7.81 (s, 1H), 7.96 (d, J = 8.3 Hz, 1H), 8.18 (d, J = 8.3 Hz, 1H), 8.89 (s, 1H), 11.69 (s, 1H)
13		52-63	1H-NMR (**DMSO**) δ 1.73-2.17 (m, 8H), 2.40 (s, 3H), 2.77-2.98 (m, 1H), 3.85 (s, 3H), 4.92 (s, 2H), 6.58-6.72 (m, 2H), 7.27 (d, J = 1.5 Hz, 1H), 7.92 (d, J = 8.8 Hz, 1H), 8.04 (s, 1H), 11.69 (s, 1H)
14		非晶質	1H-NMR (**DMSO**) δ 1.73-2.17 (m, 8H), 2.77-2.99 (m, 1H), 3.77 (s, 3H), 3.80 (s, 3H), 5.29 (s, 2H), 6.92 (d, J = 8.8 Hz, 1H), 7.31 (d, J = 2.0 Hz, 1H), 7.69 (d, J = 8.8 Hz, 1H), 7.96 (d, J = 8.3 Hz, 1H), 8.18 (d, J = 8.3 Hz, 1H), 8.88 (s, 1H), 11.79 (s, 1H)
15		199-201 (分解)	1H-NMR (**DMSO**) δ 2.21 (s, 3H), 3.91 (s, 3H), 5.37 (s, 2H), 6.82 (s, 1H), 7.29 (dd, J = 8.3, 2.4 Hz, 1H), 7.58 (s, 1H), 7.91-8.06 (m, 2H), 8.20 (dd, J = 8.3,

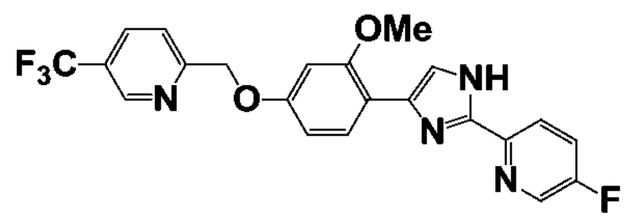
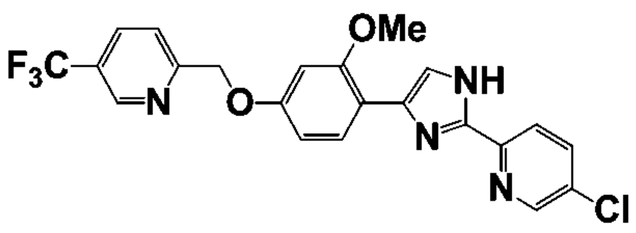
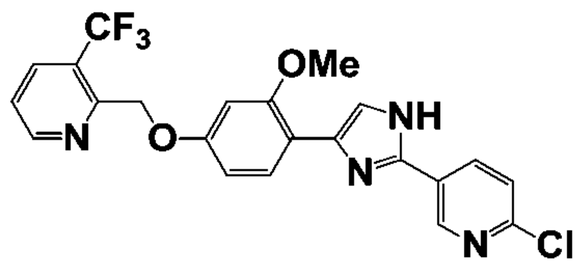
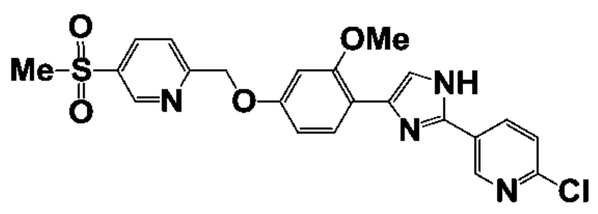
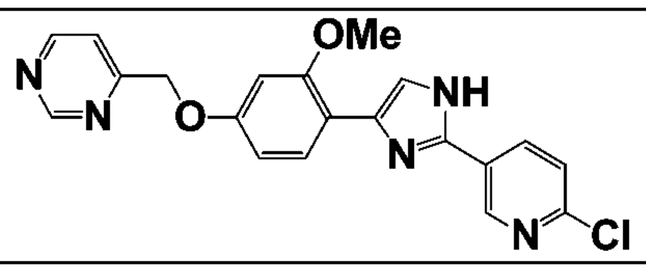
			1.5 Hz, 1H), 8.51 (ddd, J = 8.3, 8.3, 1.5 Hz, 1H), 8.82 (s, 1H), 8.90 (d, J = 1.5 Hz, 1H), 12.69 (s, 1H)
16		162-167	1H-NMR (**CDCL3**) δ 1.70-2.00 (m, 4H), 2.07-2.32 (m, 4H), 2.83-2.98 (m, 1H), 3.92 (s, 3H), 5.22 (s, 2H), 6.88 (d, J = 8.3 Hz, 1H), 7.08-7.49 (m, 3H), 7.70 (d, J = 8.3 Hz, 1H), 7.99 (d, J = 8.3 Hz, 1H), 8.71-8.90 (m, 1H), 9.30 (s, 1H)
17		62-72	1H-NMR (**CDCL3**) δ 1.77-2.02 (m, 4H), 2.11-2.32 (m, 4H), 2.91 (s, 1H), 3.95 (s, 3H), 5.19 (s, 2H), 6.61 (s, 2H), 7.26 (s, 1H), 7.53 (s, 1H), 7.73 (d, J = 7.8 Hz, 1H), 7.98 (d, J = 7.8 Hz, 1H), 8.81 (s, 1H), 9.87 (s, 1H)
18		>250	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.29 (s, 2H), 6.71 (dd, J = 8.7, 2.1 Hz, 1H), 6.78 (d, J = 2.1 Hz, 1H), 7.54 (s, 1H), 7.60 (d, J = 8.7 Hz, 1H), 7.67 (d, J = 8.1 Hz, 1H), 7.97 (d, J = 8.3 Hz, 1H), 8.32 (dd, J = 8.1, 2.1 Hz, 1H), 8.36 (dd, J = 8.3, 2.5 Hz, 1H), 8.99 (d, J = 2.5 Hz, 1H), 9.07 (d, J = 2.1 Hz, 1H)
19		168-171	1H-NMR (**DMSO**) δ 2.42 (s, 3H), 3.91 (s, 3H), 4.98 (s, 2H), 6.69-6.77 (m, 2H), 7.57 (s, 1H), 7.63 (d, J = 8.3 Hz, 1H), 8.00 (s, 1H), 8.07 (s, 1H), 8.39 (dd, J = 8.3, 2.4 Hz, 1H), 9.01 (d, J = 2.4 Hz, 1H), 12.80 (s, 1H)
20		219-221	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.31 (s, 2H), 6.75 (dd, J = 8.5, 2.4 Hz, 1H), 6.79 (d, J = 2.4 Hz, 1H), 7.57 (s, 1H), 7.61 (d, J = 8.5 Hz, 1H), 8.00 (d, J = 8.5 Hz, 1H), 8.37 (dd, J = 8.5, 2.4 Hz, 1H), 8.70 (d, J = 1.5 Hz, 1H), 8.84 (d, J = 1.5

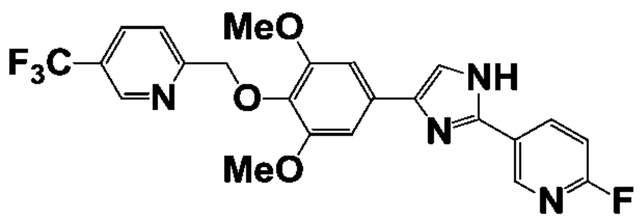
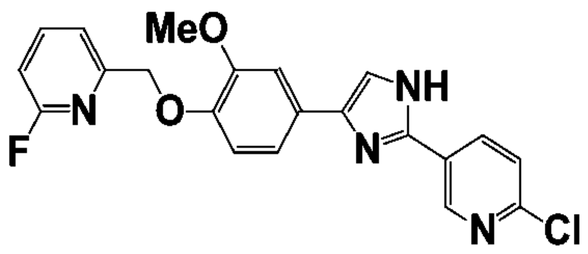
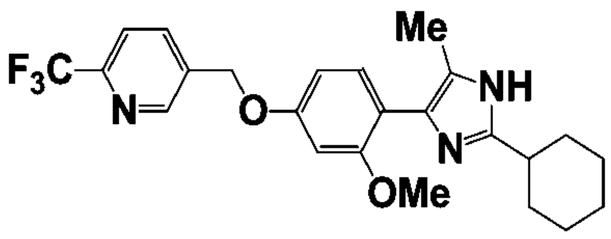
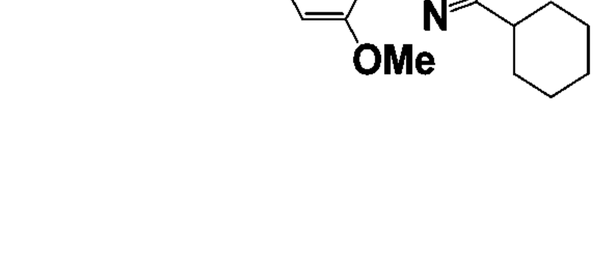
			Hz, 1H), 8.99 (d, J = 2.4 Hz, 1H)
21		171-172	1H-NMR (**DMSO**) δ 3.37 (s, 3H), 3.78 (t, J = 4.1 Hz, 2H), 4.22 (t, J = 4.1 Hz, 2H), 5.34 (s, 2H), 6.72 (d, J = 8.3 Hz, 1H), 6.80 (s, 1H), 7.54-7.71 (m, 2H), 7.77 (d, J = 8.3 Hz, 1H), 8.02 (s, 1H), 8.26 (d, J = 8.3 Hz, 1H), 8.35 (dd, J = 8.9, 1.9 Hz, 1H), 8.92-9.02 (m, 2H)
22		190-193 (分解)	1H-NMR (**DMSO**) δ 2.49 (s, 3H), 3.89 (s, 3H), 5.23 (s, 2H), 6.71 (dd, J = 8.7, 2.1 Hz, 1H), 6.76 (d, J = 2.1 Hz, 1H), 7.43-7.69 (m, 2H), 7.99 (s, 1H), 8.35 (dd, J = 8.3, 2.5 Hz, 1H), 8.54 (s, 1H), 8.67 (d, J = 1.2 Hz, 1H), 8.98 (d, J = 2.5 Hz, 1H)
23		140-142	1H-NMR (**DMSO**) δ 2.13 (s, 3H), 3.78 (s, 3H), 5.33 (s, 2H), 6.58-6.89 (m, 2H), 7.33 (d, J = 8.3 Hz, 1H), 7.65-7.88 (m, 1H), 7.94 (d, J = 7.8 Hz, 1H), 7.99-8.09 (m, 1H), 8.18 (d, J = 7.8 Hz, 1H), 8.45-8.66 (m, 1H), 8.89 (s, 1H), 12.57 (s, 1H)
24		169-171	1H-NMR (**DMSO**) δ 2.10 (s, 3H), 3.80 (s, 3H), 5.36 (s, 2H), 6.60-6.91 (m, 2H), 7.15-7.43 (m, 2H), 7.86-8.06 (m, 1H), 8.19 (d, J = 7.8 Hz, 1H), 8.29-8.53 (m, 1H), 8.75 (s, 1H), 8.89 (s, 1H), 12.30 (s, 1H)
25		180-182	1H-NMR (**DMSO**) δ 2.13 (s, 3H), 3.78 (s, 3H), 5.35 (s, 2H), 6.67 (dd, J = 8.3, 2.4 Hz, 1H), 6.80 (d, J = 2.4 Hz, 1H), 7.28 (d, J = 8.3 Hz, 1H), 7.68-7.89 (m, 2H), 7.94-8.13 (m, 1H), 8.28 (dd, J = 8.4, 2.3 Hz, 1H), 8.56 (d, J

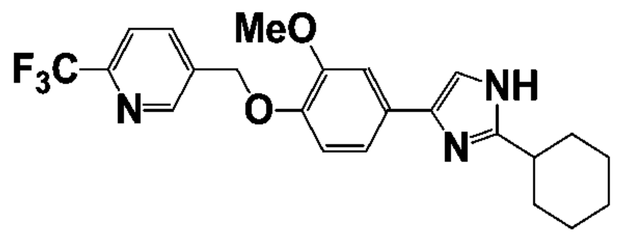
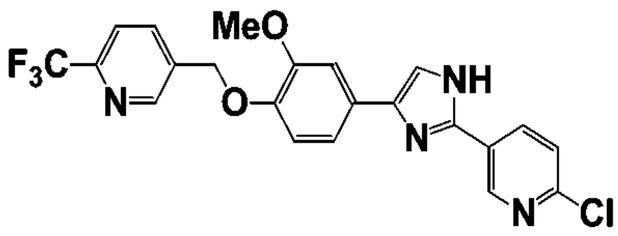
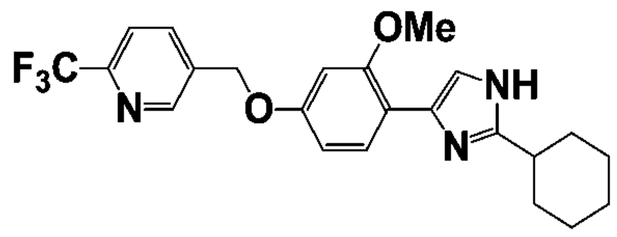
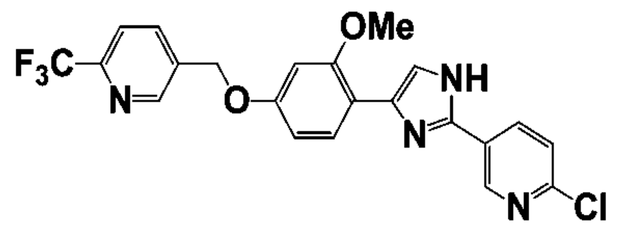
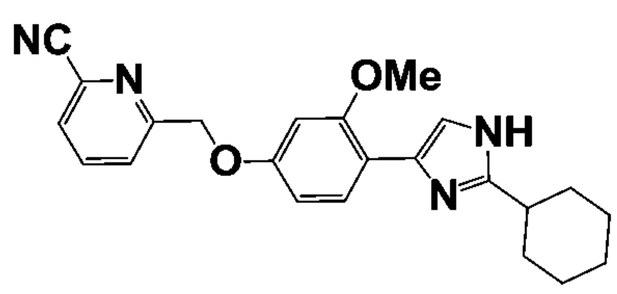
			= 2.9 Hz, 1H), 8.91-9.08 (m, 1H), 12.72 (s, 1H)
26		176-178	1H-NMR (**DMSO**) δ 3.92 (s, 3H), 5.34 (s, 2H), 6.75 (dd, J = 8.3, 2.0 Hz, 1H), 6.78 (d, J = 2.0 Hz, 1H), 7.53 (s, 1H), 7.84 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 7.97 (d, J = 8.3 Hz, 1H), 8.11 (d, J = 8.3 Hz, 1H), 8.15-8.27 (m, 2H), 8.61 (d, J = 2.4 Hz, 1H), 8.90 (s, 1H), 12.78 (s, 1H)
27		157-159	1H-NMR (**DMSO**) δ 2.13 (s, 3H), 3.77 (s, 3H), 5.35 (s, 2H), 6.60-6.86 (m, 2H), 7.33 (d, J = 8.3 Hz, 1H), 7.85-8.10 (m, 3H), 8.19 (d, J = 8.3 Hz, 1H), 8.50-8.67 (m, 1H), 8.89 (s, 1H), 12.68 (s, 1H)
28		209-211	1H-NMR (**DMSO**) δ 2.44 (s, 3H), 3.85 (s, 3H), 5.29 (s, 2H), 6.98-7.28 (m, 2H), 7.51-7.78 (m, 2H), 7.95 (d, J = 7.8 Hz, 1H), 8.11-8.36 (m, 2H), 8.76-9.05 (m, 2H), 12.61 (s, 1H)
29		267-269	1H-NMR (**DMSO**) δ 2.48 (s, 3H), 3.89 (s, 3H), 5.34 (s, 2H), 7.13-7.32 (m, 2H), 7.46 (d, J = 1.0 Hz, 1H), 7.96 (d, J = 8.5 Hz, 1H), 8.16 (d, J = 8.8 Hz, 1H), 8.29 (dd, J = 8.5, 2.2 Hz, 1H), 8.70 (d, J = 8.8 Hz, 1H), 8.77-8.94 (m, 2H)
30		228-230 (分解)	1H-NMR (**DMSO**) δ 2.43 (s, 3H), 3.87 (s, 3H), 5.31 (s, 2H), 6.96-7.43 (m, 3H), 7.60 (d, J = 8.8 Hz, 1H), 7.77 (d, J = 8.3 Hz, 1H), 8.20-8.43 (m, 2H), 8.84-9.08 (m, 2H), 12.61 (s, 1H)
31		168-171	1H-NMR (**DMSO**) δ 2.45 (s, 3H), 3.87 (s, 3H), 5.30 (s, 2H), 7.05 (d, J = 8.3 Hz, 1H),

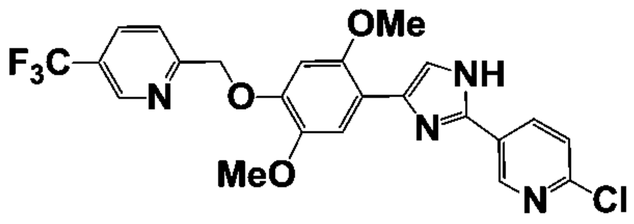
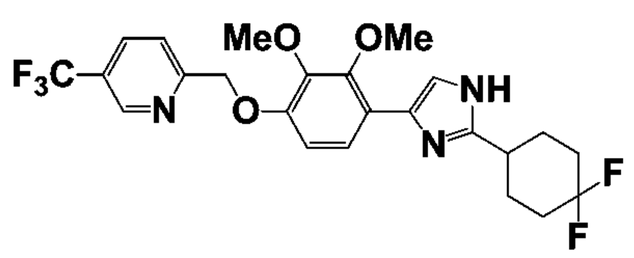
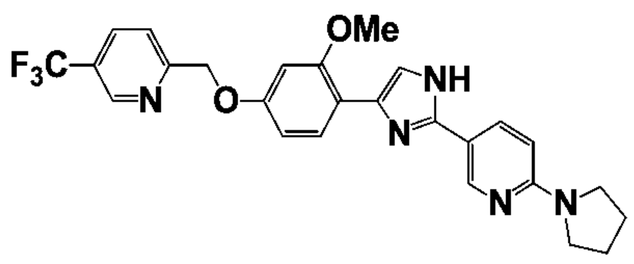
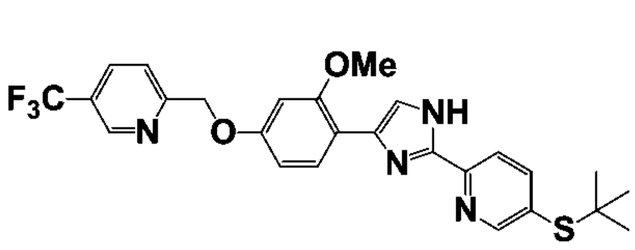
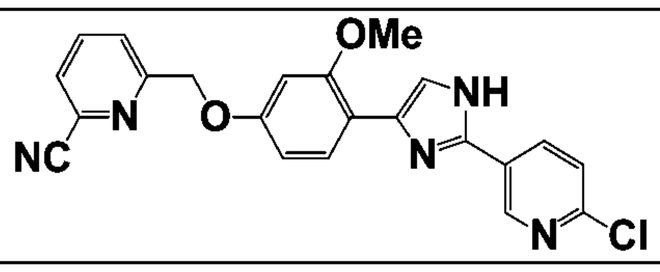
			7.16 (dd, J = 8.3, 2.0 Hz, 1H), 7.39 (d, J = 2.0 Hz, 1H), 7.77 (d, J = 8.3 Hz, 1H), 7.89-8.13 (m, 2H), 8.28 (dd, J = 8.3, 2.0 Hz, 1H), 8.61 (d, J = 2.4 Hz, 1H), 8.98 (s, 1H), 12.79 (s, 1H)
32		186-189	1H-NMR (**CDCL3**) δ 4.02 (s, 3H), 5.21 (s, 2H), 6.55-6.79 (m, 2H), 7.47 (d, J = 1.5 Hz, 1H), 7.58-7.68 (m, 1H), 7.69-7.79 (m, 2H), 7.91-8.32 (m, 2H), 8.43-8.55 (m, 1H), 8.83 (s, 1H), 11.06 (s, 1H)
33		193-195	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.37 (s, 2H), 6.67-6.85 (m, 2H), 7.43-7.81 (m, 3H), 8.04 (s, 1H), 8.24-8.53 (m, 2H), 8.86 (dd, J = 4.9, 1.5 Hz, 1H), 9.00 (d, J = 2.4 Hz, 1H), 12.73 (s, 1H)
34		170-173	1H-NMR (**DMSO**) δ 2.13 (s, 3H), 3.77 (s, 3H), 5.35 (s, 2H), 6.57-6.88 (m, 2H), 7.31 (d, J = 8.3 Hz, 1H), 7.71-8.07 (m, 3H), 8.19-8.37 (m, 1H), 8.50-8.67 (m, 1H), 8.99 (s, 1H), 12.68 (s, 1H)
35		233-237 (分解)	1H-NMR (**DMSO**) δ 3.92 (s, 3H), 5.34 (s, 2H), 6.71 (dd, J = 8.5, 2.4 Hz, 1H), 6.79 (d, J = 2.4 Hz, 1H), 7.59-7.69 (m, 2H), 7.77 (d, J = 8.3 Hz, 1H), 8.09 (d, J = 8.5 Hz, 1H), 8.34-8.46 (m, 2H), 9.00 (d, J = 2.4 Hz, 1H), 9.06 (d, J = 2.0 Hz, 1H), 12.80 (s, 1H)
36		222-224	1H-NMR (**DMSO**) δ 3.92 (s, 3H), 5.34 (s, 2H), 6.75 (d, J = 8.3 Hz, 1H), 6.82 (s, 1H), 7.53-7.73 (m, 2H), 7.87-7.95 (m, 2H), 8.02-8.15 (m, 1H), 8.18 (dd, J = 7.8, 7.8 Hz, 1H), 8.39 (dd, J =

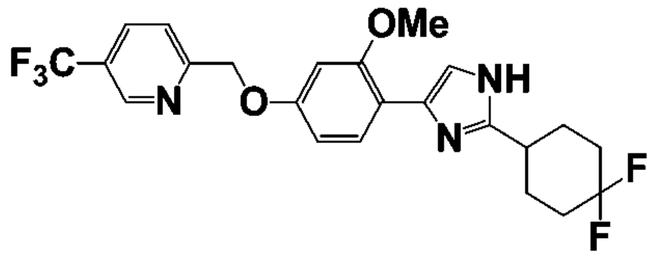
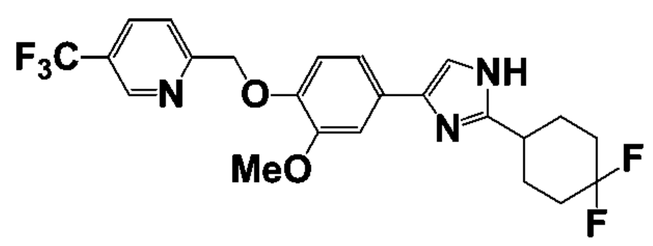
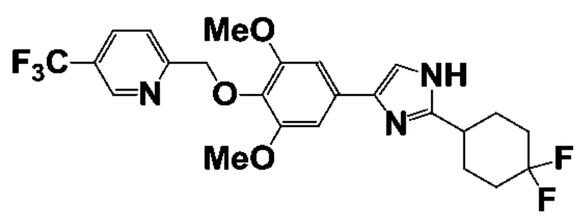
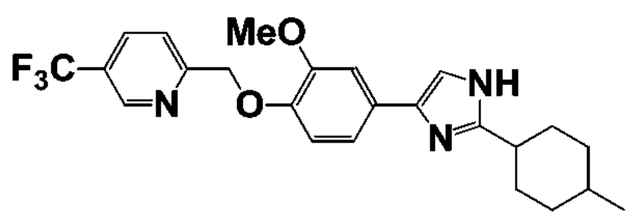
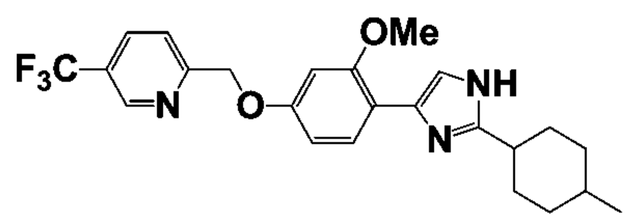
			8.3, 2.0 Hz, 1H), 9.01 (d, J = 2.0 Hz, 1H), 12.79 (s, 1H)
37		216-217	1H-NMR (**DMSO**) δ 3.93 (s, 3H), 5.34 (s, 2H), 6.75 (dd, J = 8.8, 2.4 Hz, 1H), 6.82 (d, J = 2.4 Hz, 1H), 7.60-7.71 (m, 2H), 7.77 (d, J = 4.9 Hz, 1H), 7.91 (s, 1H), 8.10 (d, J = 8.8 Hz, 1H), 8.38 (dd, J = 8.3, 2.4 Hz, 1H), 8.90 (d, J = 4.9 Hz, 1H), 9.01 (d, J = 2.4 Hz, 1H), 12.80 (s, 1H)
38		213-214	1H-NMR (**CDCL3**) δ 3.25 (s, 3H), 4.01 (s, 3H), 5.31 (s, 2H), 6.55-6.81 (m, 2H), 7.24-7.28 (m, 1H), 7.47-7.79 (m, 2H), 7.98 (dd, J = 8.3, 2.0 Hz, 1H), 8.11 (d, J = 8.3 Hz, 1H), 8.26-8.51 (m, 1H), 8.80-8.97 (m, 1H), 9.16 (d, J = 2.0 Hz, 1H), 10.80 (s, 1H)
39		141-150	1H-NMR (**DMSO**) δ 2.31 (s, 3H), 3.86 (s, 3H), 5.43 (s, 2H), 6.82 (dd, J = 8.8, 2.4 Hz, 1H), 6.94 (d, J = 2.4 Hz, 1H), 7.43 (d, J = 8.8 Hz, 1H), 7.55 (dd, J = 8.5, 2.7 Hz, 1H), 7.82 (dd, J = 8.3, 2.9 Hz, 1H), 8.32 (dd, J = 8.3, 2.2 Hz, 1H), 8.78 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 9.02 (d, J = 2.2 Hz, 1H), 9.06 (d, J = 2.4 Hz, 1H)
40		100-108	1H-NMR (**DMSO**) δ 1.89-2.06 (m, 4H), 3.43-3.58 (m, 4H), 3.92 (s, 3H), 5.35 (s, 2H), 6.39 (d, J = 7.3 Hz, 1H), 6.71 (dd, J = 8.3, 2.2 Hz, 1H), 6.79 (d, J = 2.2 Hz, 1H), 7.29 (d, J = 7.3 Hz, 1H), 7.48 (d, J = 1.5 Hz, 1H), 7.55 (dd, J = 7.3, 7.3 Hz, 1H), 7.80 (d, J = 8.3 Hz, 1H), 8.09 (d, J = 8.3 Hz, 1H), 8.28 (d, J = 8.3 Hz, 1H), 9.00 (s, 1H),

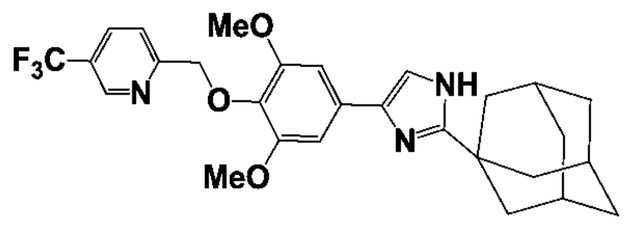
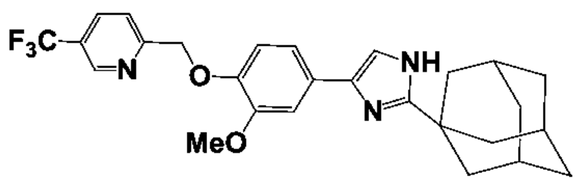
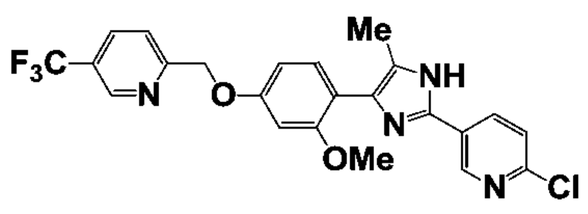
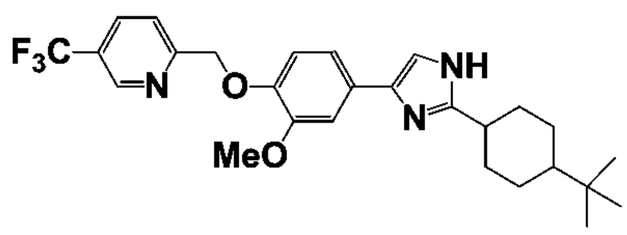
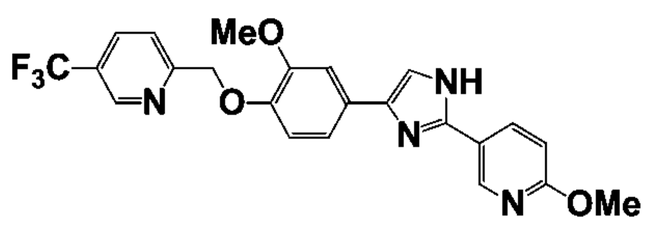
			12.11 (s, 1H)
41		152-154	1H-NMR (**DMSO**) δ 3.92 (s, 3H), 5.36 (s, 2H), 6.72 (dd, J = 8.3, 2.2 Hz, 1H), 6.80 (d, J = 2.2 Hz, 1H), 7.52 (s, 1H), 7.77-7.93 (m, 2H), 8.10 (d, J = 8.3 Hz, 1H), 8.17 (dd, J = 8.8, 4.9 Hz, 1H), 8.28 (dd, J = 8.3, 2.0 Hz, 1H), 8.61 (d, J = 2.9 Hz, 1H), 9.00 (d, J = 2.0 Hz, 1H), 12.78 (s, 1H)
42		147-150	1H-NMR (**DMSO**) δ 3.92 (s, 3H), 5.36 (s, 2H), 6.72 (dd, J = 8.3, 2.2 Hz, 1H), 6.80 (d, J = 2.2 Hz, 1H), 7.55 (s, 1H), 7.80 (d, J = 8.3 Hz, 1H), 8.02 (dd, J = 8.3, 2.4 Hz, 1H), 8.07-8.16 (m, 2H), 8.28 (dd, J = 8.3, 2.0 Hz, 1H), 8.65 (d, J = 2.4 Hz, 1H), 9.01 (s, 1H), 12.89 (s, 1H)
43		185-187	1H-NMR (**DMSO**) δ 3.88 (s, 3H), 5.32 (s, 2H), 6.62-6.80 (m, 2H), 7.56 (s, 1H), 7.62 (d, J = 8.3 Hz, 1H), 7.67 (dd, J = 8.0, 4.9 Hz, 1H), 8.02 (s, 1H), 8.28 (dd, J = 8.0, 1.2 Hz, 1H), 8.37 (dd, J = 8.3, 2.4 Hz, 1H), 8.89 (d, J = 4.9 Hz, 1H), 9.00 (d, J = 2.4 Hz, 1H), 12.72 (s, 1H)
44		232-235 (分解)	1H-NMR (**DMSO**) δ 3.35 (s, 3H), 3.93 (s, 3H), 5.38 (s, 2H), 6.73 (dd, J = 8.5, 2.2 Hz, 1H), 6.82 (d, J = 2.2 Hz, 1H), 7.51-7.70 (m, 2H), 7.84 (d, J = 8.3 Hz, 1H), 8.06 (s, 1H), 8.34-8.46 (m, 2H), 9.01 (d, J = 2.4 Hz, 1H), 9.10 (d, J = 2.4 Hz, 1H), 12.79 (s, 1H)
45		221-224	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.26 (s, 2H), 6.71 (d, J = 7.8 Hz, 1H), 6.80 (s, 1H), 7.52-7.72 (m, 3H),

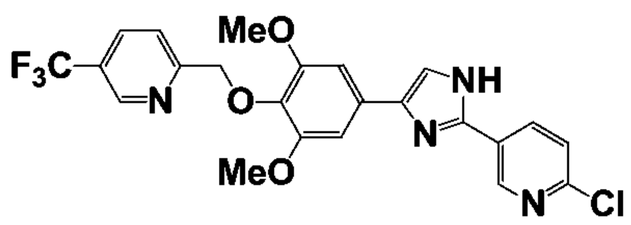
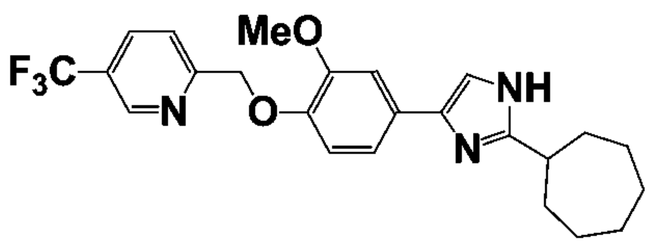
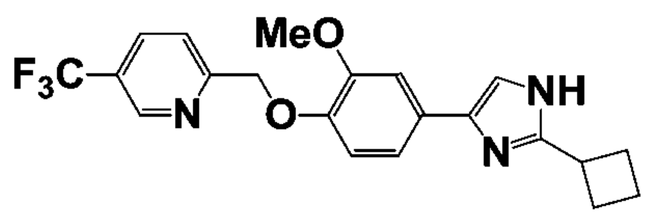
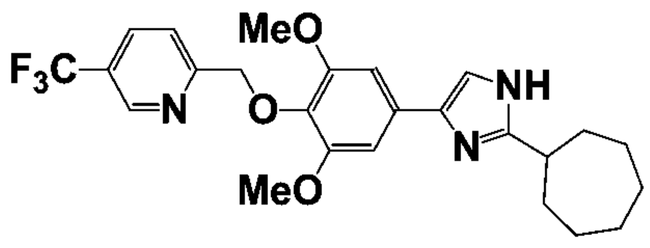
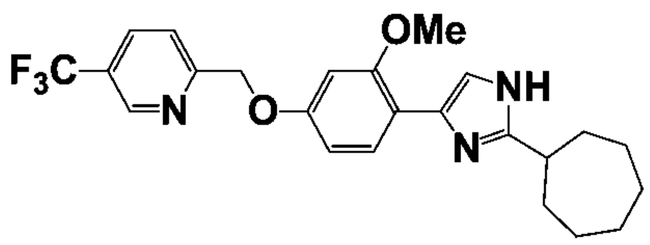
			8.07 (s, 1H), 8.37 (dd, J = 8.3, 2.0 Hz, 1H), 8.84 (d, J = 4.9 Hz, 1H), 8.99 (d, J = 2.0 Hz, 1H), 9.19 (d, J = 1.0 Hz, 1H), 12.79 (s, 1H)
46		107-110	1H-NMR (**DMSO**) δ 3.84 (s, 3H), 3.84 (s, 3H), 5.09 (s, 2H), 7.22-7.10 (m, 2H), 7.31 (dd, J = 8.3, 2.2 Hz, 1H), 7.81 (s, 1H), 7.96 (d, J = 8.3 Hz, 1H), 8.28 (dd, J = 8.3, 2.2 Hz, 1H), 8.50 (ddd, J = 8.3, 8.3, 2.2 Hz, 1H), 8.81 (d, J = 2.2 Hz, 1H), 8.90 (s, 1H)
47		185-187	1H-NMR (**DMSO**) δ 3.88 (s, 3H), 5.15 (s, 2H), 6.62-6.83 (m, 2H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.48 (d, J = 8.3 Hz, 1H), 7.51-7.68 (m, 3H), 8.08 (d, J = 8.3 Hz, 1H), 8.50 (dd, J = 8.5, 8.5 Hz, 1H), 8.82 (s, 1H), 12.70 (s, 1H)
48			1H-NMR (**DMSO**) δ 1.12-1.46 (m, 3H), 1.52-2.07 (m, 7H), 2.17 (s, 3H), 2.89-3.05 (m, 1H), 3.82 (s, 3H), 5.38 (s, 2H), 6.78 (dd, J = 8.8, 2.4 Hz, 1H), 6.87 (d, J = 2.4 Hz, 1H), 7.31 (d, J = 8.8 Hz, 1H), 7.98 (d, J = 7.8 Hz, 1H), 8.20 (dd, J = 7.8, 1.5 Hz, 1H), 8.90 (s, 1H), 13.97 (s, 1H)
49		196-199	1H-NMR (**DMSO**) δ 2.12 (s, 3H), 3.78 (s, 3H), 5.35 (s, 2H), 6.62-6.89 (m, 2H), 7.28 (s, 1H), 7.56 (d, J = 8.3 Hz, 1H), 7.96 (d, J = 8.3 Hz, 1H), 8.10-8.37 (m, 2H), 8.81-9.00 (m, 2H), 12.40 (s, 1H)
50		210-213 (分解)	1H-NMR (**DMSO**) δ 3.93 (s, 3H), 5.32 (s, 2H), 6.71-6.87 (m, 2H), 7.57-7.70 (m, 2H), 8.11 (d, J = 7.9 Hz, 1H), 8.39 (d, J =

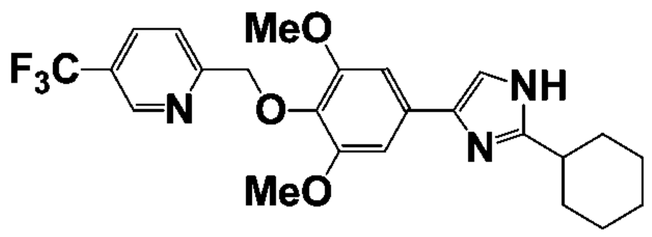
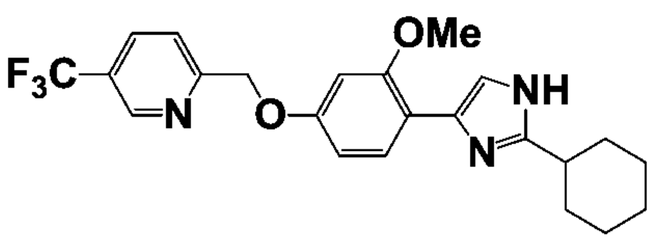
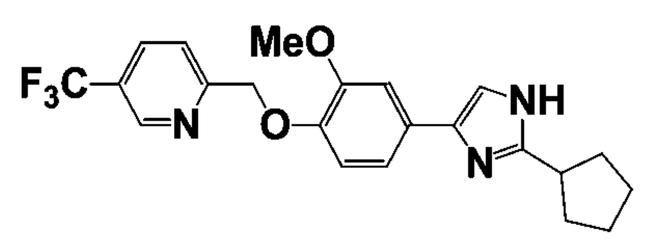
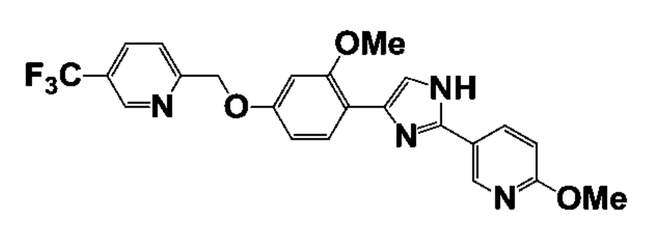
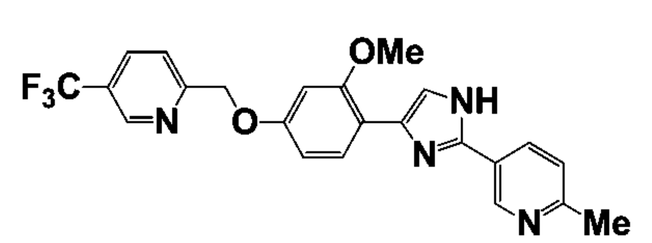
			7.5 Hz, 1H), 8.63-8.74 (m, 2H), 8.86 (s, 1H), 9.02 (s, 1H), 12.80 (s, 1H)
51		89-107	1H-NMR (**DMSO**) δ 1.12-1.48 (m, 3H), 1.55-2.10 (m, 7H), 2.97-3.18 (m, 1H), 3.87 (s, 3H), 5.32 (s, 2H), 7.19 (d, J = 8.3 Hz, 1H), 7.42 (dd, J = 8.3, 1.5 Hz, 1H), 7.59 (d, J = 1.5 Hz, 1H), 7.87-8.05 (m, 2H), 8.15 (d, J = 8.3 Hz, 1H), 8.85 (s, 1H), 14.56 (s, 1H)
52		179-181	1H-NMR (**DMSO**) δ 3.86 (s, 3H), 5.28 (s, 2H), 7.10 (d, J = 8.3 Hz, 1H), 7.38 (d, J = 8.3 Hz, 1H), 7.47 (s, 1H), 7.63 (d, J = 8.3 Hz, 1H), 7.76 (s, 1H), 7.96 (d, J = 8.3 Hz, 1H), 8.16 (d, J = 8.3 Hz, 1H), 8.36 (d, J = 8.3 Hz, 1H), 8.86 (s, 1H), 8.99 (s, 1H), 12.87 (s, 1H)
53		62-73	1H-NMR (**DMSO**) δ 1.13-2.01 (m, 10H), 2.55-2.75 (m, 1H), 3.86 (s, 3H), 5.29 (s, 2H), 6.66 (dd, J = 8.5, 2.0 Hz, 1H), 6.70 (d, J = 2.0 Hz, 1H), 7.86-8.04 (m, 2H), 8.17 (d, J = 7.8 Hz, 1H), 8.88 (s, 1H), 11.55 (s, 1H)
54		218-220	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.33 (s, 2H), 6.75 (t, J = 8.8 Hz, 2H), 7.45-7.74 (m, 2H), 8.18 (d, J = 8.3 Hz, 1H), 8.37 (dd, J = 8.3, 2.0 Hz, 1H), 8.79-9.11 (m, 2H), 12.79 (s, 1H)
55		182-187	1H-NMR (**CDCL3**) δ 1.17-2.19 (m, 11H), 2.66-2.88 (m, 1H), 3.93 (s, 3H), 5.24 (s, 2H), 6.58 (dd, J = 8.5, 2.3 Hz, 1H), 6.60-6.69 (m, 1H), 7.16-7.38 (m, 1H), 7.40-7.68 (m, 2H), 7.78 (d, J = 7.9 Hz, 1H), 7.87 (dd, J = 7.9, 7.9 Hz, 1H), 9.90

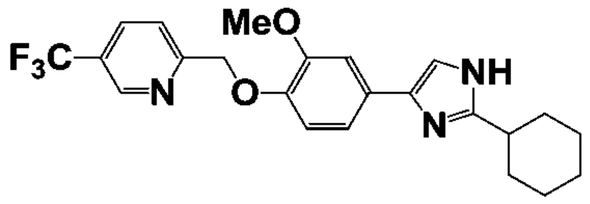
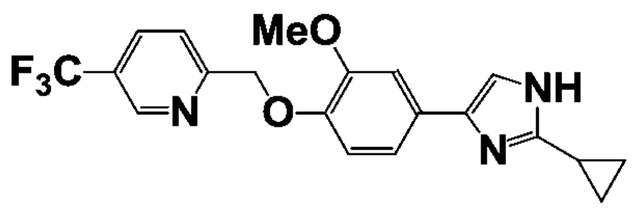
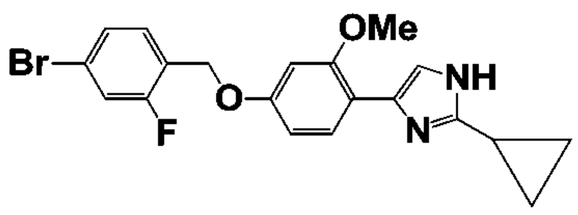
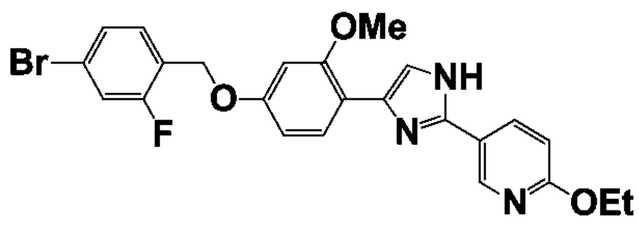
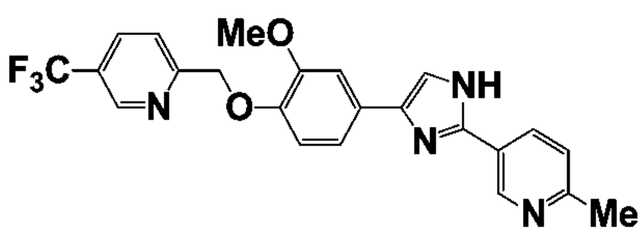
			(s, 1H)
56		204-206	1H-NMR (**DMSO**) δ 3.84 (s, 3H), 3.85 (s, 3H), 5.36 (s, 2H), 6.88 (s, 1H), 7.52-7.72 (m, 2H), 7.72-7.92 (m, 2H), 8.30 (dd, J = 8.3, 2.0 Hz, 1H), 8.39 (dd, J = 8.3, 2.4 Hz, 1H), 8.95-9.00 (m, 1H), 9.01 (d, J = 2.4 Hz, 1H), 12.81 (s, 1H)
57		155-157	1H-NMR (**DMSO**) δ 1.72-2.18 (m, 8H), 2.79-2.95 (m, 1H), 3.80 (s, 3H), 3.84 (s, 3H), 5.31 (s, 2H), 6.88 (d, J = 8.8 Hz, 1H), 7.33 (d, J = 1.5 Hz, 1H), 7.66 (d, J = 8.8 Hz, 1H), 7.78 (d, J = 8.3 Hz, 1H), 8.29 (dd, J = 8.3, 2.4 Hz, 1H), 8.99 (d, J = 2.4 Hz, 1H), 11.79 (s, 1H)
58		227-231 (分解)	1H-NMR (**DMSO**) δ 1.90-1.99 (m, 4H), 2.46-2.51 (m, 4H), 3.90 (s, 3H), 5.33 (s, 2H), 6.51 (d, J = 8.3 Hz, 1H), 6.70 (dd, J = 8.5, 2.2 Hz, 1H), 6.76 (d, J = 2.2 Hz, 1H), 7.36-7.50 (J = 2.0 Hz, 1H), 7.78 (d, J = 8.3 Hz, 1H), 7.94-8.14 (m, 2H), 8.27 (dd, J = 8.3, 2.4 Hz, 1H), 8.66 (d, J = 2.0 Hz, 1H), 8.99 (s, 1H), 12.20 (s, 1H)
59		159-160	1H-NMR (**DMSO**) δ 1.27 (s, 9H), 3.91 (s, 3H), 5.35 (s, 2H), 6.71 (dd, J = 8.5, 1.9 Hz, 1H), 6.79 (s, 1H), 7.54 (s, 1H), 7.78 (d, J = 8.5 Hz, 1H), 7.99 (dd, J = 8.1, 1.9 Hz, 1H), 8.03-8.18 (m, 2H), 8.27 (dd, J = 8.3, 1.7 Hz, 1H), 8.61 (d, J = 1.9 Hz, 1H), 8.99 (s, 1H), 12.91 (s, 1H)
60		235-239 (分解)	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.28 (s, 2H), 6.71 (dd, J = 8.7, 1.2 Hz, 1H), 6.78 (s, 1H), 7.44-7.69 (m,

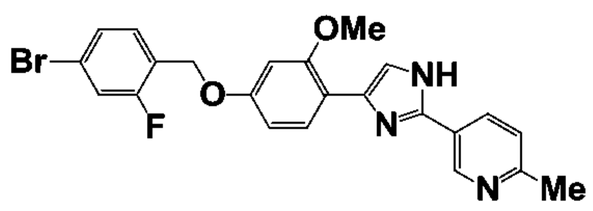
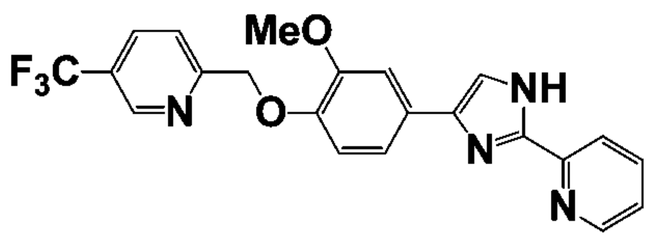
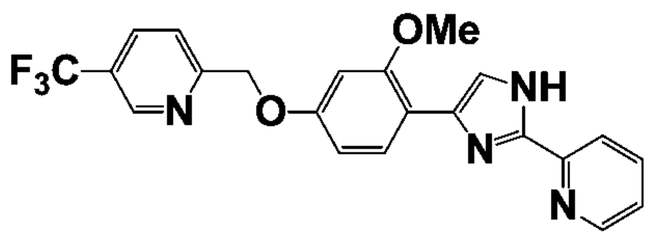
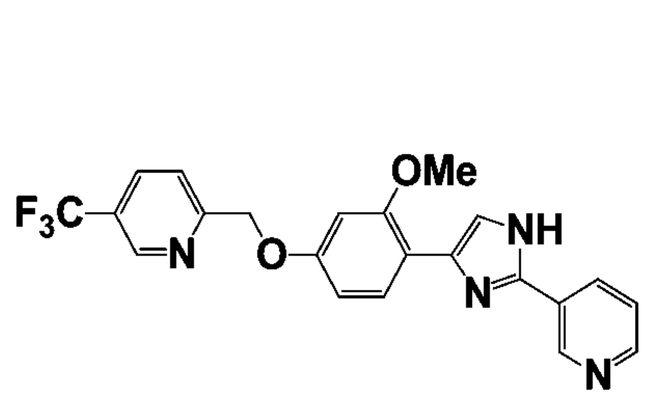
			2H), 7.88 (d, J = 7.9 Hz, 1H), 7.95-8.14 (m, 3H), 8.36 (dd, J = 8.5, 2.3 Hz, 1H), 8.99 (d, J = 2.3 Hz, 1H), 12.70 (s, 1H)
61		232-237	1H-NMR (**CDCL3**) δ 1.69-2.01 (m, 4H), 2.03-2.31 (m, 4H), 2.78-2.99 (m, 1H), 3.93 (s, 3H), 5.28 (s, 2H), 6.60 (dd, J = 8.6, 2.2 Hz, 1H), 6.65 (s, 1H), 7.14-7.34 (m, 1H), 7.54 (s, 1H), 7.69 (d, J = 8.2 Hz, 1H), 7.96 (dd, J = 8.2, 1.0 Hz, 1H), 8.87 (s, 1H), 10.05 (s, 1H)
62		>250	1H-NMR (**CDCL3**) δ 1.70-2.31 (m, 8H), 2.79-2.99 (m, 1H), 3.94 (s, 3H), 5.33 (s, 2H), 6.84 (d, J = 8.5 Hz, 1H), 7.10-7.24 (m, 2H), 7.39 (s, 1H), 7.73 (d, J = 8.2 Hz, 1H), 7.94 (dd, J = 8.2, 1.0 Hz, 1H), 8.84 (s, 1H), 9.42 (s, 1H)
63		155-168 (分解)	1H-NMR (**CDCL3**) δ 1.65-2.41 (m, 8H), 2.75-3.00 (m, 1H), 3.83 (s, 6H), 5.21 (s, 2H), 6.73-7.12 (m, 2H), 7.17 (s, 1H), 7.93-8.05 (m, 2H), 8.80 (s, 1H), 10.00 (s, 1H)
64		147-150	1H-NMR (**DMSO**) δ 0.90 (d, J = 6.3 Hz, 3H), 0.94-1.11 (m, 2H), 1.20-2.07 (m, 7H), 2.52-2.64 (m, 1H), 3.84 (s, 3H), 5.26 (s, 2H), 6.98 (d, J = 8.3 Hz, 1H), 7.18 (d, J = 8.3 Hz, 1H), 7.26-7.41 (m, 2H), 7.75 (d, J = 8.3 Hz, 1H), 8.27 (dd, J = 8.3, 2.0 Hz, 1H), 8.96 (d, J = 2.0 Hz, 1H)
65		137-142	1H-NMR (**DMSO**) δ 0.89 (d, J = 6.8 Hz, 3H), 0.93-1.13 (m, 2H), 1.26-2.05 (m, 7H), 2.51-2.63 (m, 1H), 3.85 (s, 3H), 5.30 (s, 2H), 6.54-6.80 (m, 2H), 7.24 (s, 1H), 7.77

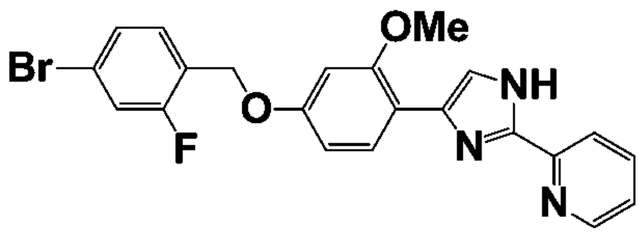
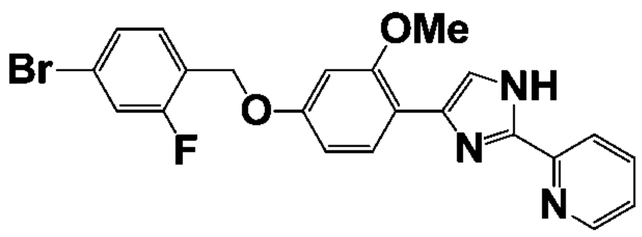
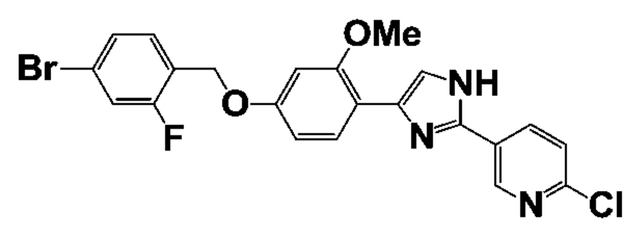
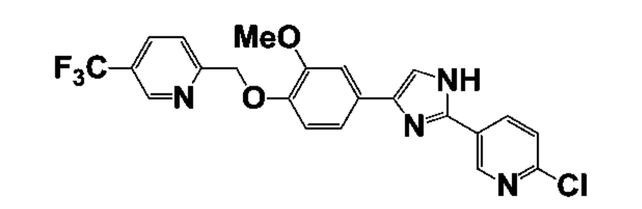
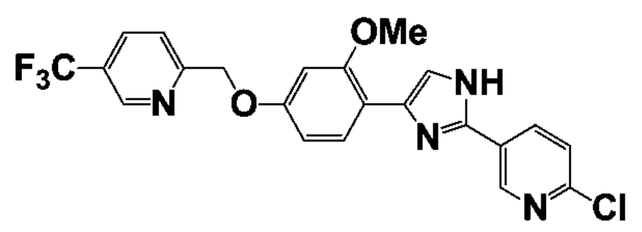
			(d, J = 8.3 Hz, 1H), 7.93 (d, J = 8.3 Hz, 1H), 8.26 (dd, J = 8.3, 2.0 Hz, 1H), 8.98 (s, 1H), 11.53 (s, 1H)
66		144-168	1H-NMR (**DMSO**) δ 1.66-1.85 (m, 6H), 2.01-2.24 (m, 9H), 3.89 (s, 6H), 5.12 (s, 2H), 7.38-7.49 (m, 2H), 7.96 (d, J = 8.3 Hz, 1H), 8.10 (s, 1H), 8.31 (d, J = 8.3 Hz, 1H), 8.90 (s, 1H), 14.27 (s, 1H), 14.73 (s, 1H)
67		209-217	1H-NMR (**CDCL3**) δ 1.69-1.85 (m, 6H), 1.97-2.12 (m, 9H), 3.96 (s, 3H), 5.32 (s, 2H), 6.83 (d, J = 8.3 Hz, 1H), 7.02-7.20 (m, 2H), 7.22-7.45 (m, 1H), 7.72 (d, J = 8.3 Hz, 1H), 7.93 (dd, J = 8.3, 2.1 Hz, 1H), 8.84 (s, 1H)
68		129-132	1H-NMR (**DMSO**) δ 2.10 (s, 3H), 3.79 (s, 3H), 5.36 (s, 2H), 6.59-6.89 (m, 2H), 7.29 (d, J = 8.3 Hz, 1H), 7.56 (d, J = 8.8 Hz, 1H), 7.79 (d, J = 8.3 Hz, 1H), 8.15-8.40 (m, 2H), 8.90 (s, 1H), 9.00 (s, 1H), 12.39 (s, 1H)
69		159-161	1H-NMR (**CDCL3**) δ 0.83-0.91 (m, 9H), 0.99-1.19 (m, 3H), 1.37-1.61 (m, 2H), 1.77-1.99 (m, 2H), 2.06-2.27 (m, 2H), 2.72 (tt, J = 12.4, 3.6 Hz, 1H), 3.96 (s, 3H), 5.33 (s, 2H), 6.84 (d, J = 8.8 Hz, 1H), 7.07-7.17 (m, 2H), 7.34 (s, 1H), 7.73 (d, J = 8.3 Hz, 1H), 7.93 (dd, J = 8.3, 2.2 Hz, 1H), 8.84 (d, J = 2.2 Hz, 1H)
70		217-218 (分解)	1H-NMR (**CDCL3**) δ 3.96 (s, 6H), 5.35 (s, 2H), 6.72-7.01 (m, 2H), 7.06-7.65 (m, 3H), 7.74 (d, J = 8.3 Hz, 1H), 7.94 (d, J = 8.3 Hz, 1H), 8.14 (d, J

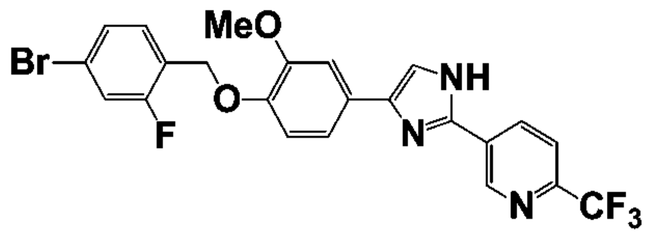
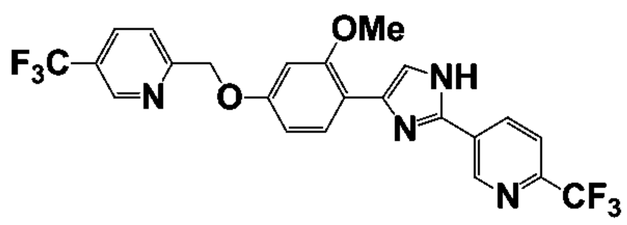
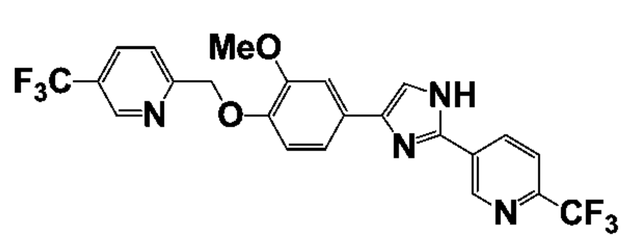
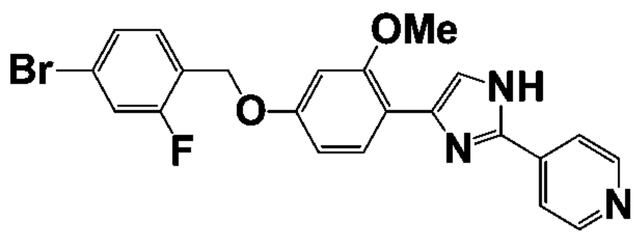
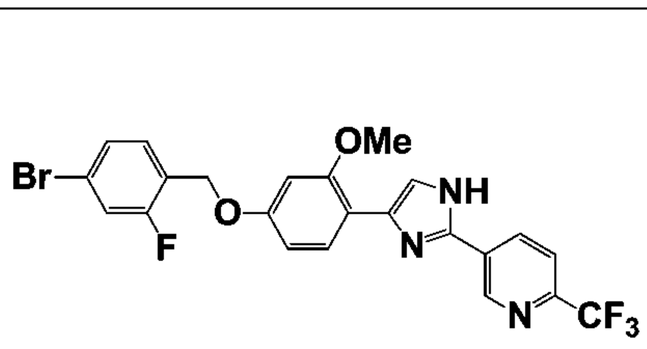
			= 8.3 Hz, 1H), 8.59 (d, J = 2.0 Hz, 1H), 8.85 (s, 1H), 9.86 (s, 1H)
71		171-173 (分解)	1H-NMR (**CDCL3**) δ 3.85 (s, 6H), 5.21 (s, 2H), 6.69-7.14 (m, 2H), 7.29-7.47 (m, 2H), 7.89-8.04 (m, 2H), 8.14-8.36 (m, 1H), 8.79 (s, 1H), 8.81-8.92 (m, 1H), 11.35 (s, 1H)
72			1H-NMR (**CDCL3**) δ 1.41-2.20 (m, 12H), 2.85-3.08 (m, 1H), 3.93 (s, 3H), 5.33 (s, 2H), 6.83 (d, J = 8.2 Hz, 1H), 7.10 (s, 1H), 7.13-7.22 (m, 1H), 7.41 (s, 1H), 7.73 (d, J = 8.2 Hz, 1H), 7.93 (dd, J = 8.3, 1.5 Hz, 1H), 8.84 (s, 1H), 9.26 (s, 1H)
73		210-213 (分解)	1H-NMR (**DMSO**) δ 1.83-1.97 (m, 1H), 2.00-2.14 (m, 1H), 2.28-2.61 (m, 4H), 3.82-3.99 (m, 4H), 5.33 (s, 2H), 7.15 (d, J = 8.3 Hz, 1H), 7.39 (d, J = 8.3 Hz, 1H), 7.53-7.67 (1H), 7.75 (d, J = 8.3 Hz, 1H), 7.97 (d, J = 2.0 Hz, 1H), 8.28 (dd, J = 8.3, 1.0 Hz, 1H), 8.98 (s, J = 1.0 Hz, 1H), 14.61 (s, 1H)
74		177-179	1H-NMR (**DMSO**) δ 1.46-2.07 (m, 13H), 3.18-3.28 (m, 1H), 3.85 (s, 6H), 5.12 (s, 2H), 7.20-7.30 (m, 2H), 7.93 (d, J = 8.3 Hz, 1H), 8.05 (s, 1H), 8.29 (dd, J = 8.3, 2.2 Hz, 1H), 8.90 (d, J = 2.2 Hz, 1H)
75		202-204 (分解)	1H-NMR (**DMSO**) δ 1.44-2.03 (m, 12H), 3.19-3.29 (m, 1H), 3.91 (s, 3H), 5.39 (s, 2H), 6.79 (dd, J = 8.5, 2.4 Hz, 1H), 6.89 (d, J = 2.4 Hz, 1H), 7.65 (s, 1H), 7.67-7.87 (m, 2H), 8.29 (dd, J = 8.4, 2.1 Hz, 1H), 9.00 (d, J = 2.1 Hz, 1H), 14.09

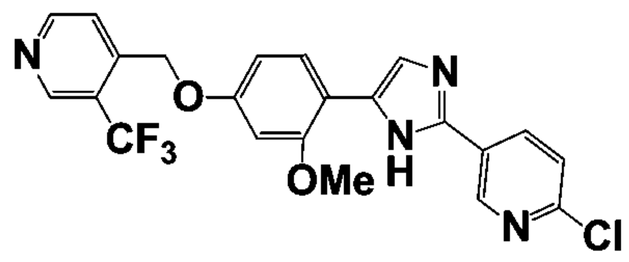
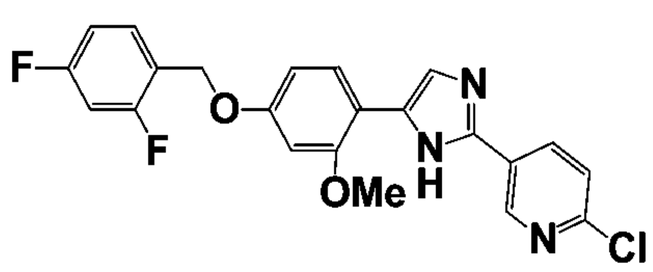
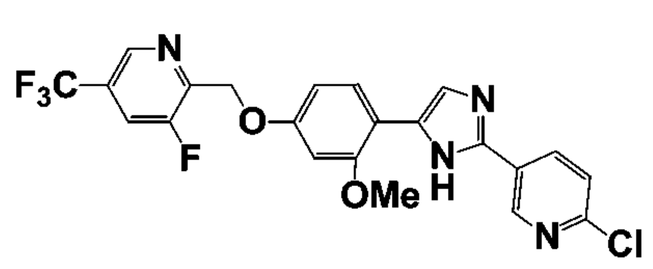
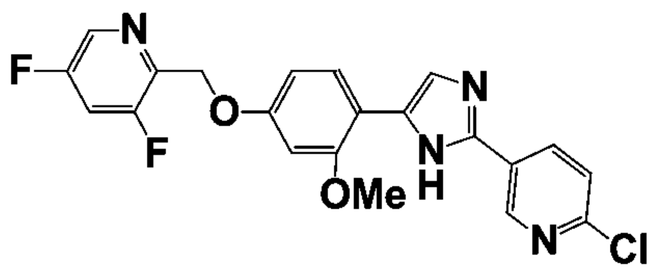
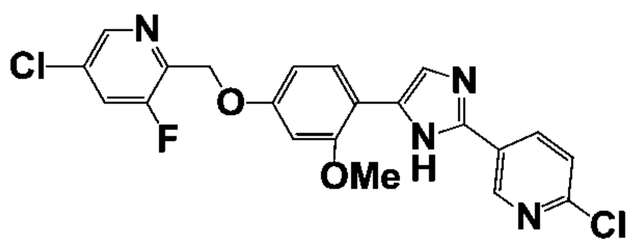
			(s, 1H)
76		183-186	1H-NMR (**DMSO**) δ 1.17-1.46 (m, 3H), 1.57-1.89 (m, 5H), 1.93-2.11 (m, 2H), 3.01-3.14 (m, 1H), 3.85 (s, 6H), 5.12 (s, 2H), 7.25 (s, 2H), 7.93 (d, J = 8.3 Hz, 1H), 8.08 (s, 1H), 8.29 (dd, J = 8.3, 2.1 Hz, 1H), 8.90 (d, J = 2.1 Hz, 1H)
77		226-228	1H-NMR (**DMSO**) δ 1.15-1.43 (m, 3H), 1.57-2.03 (m, 7H), 3.08 (tt, J = 12.2, 3.5 Hz, 1H), 3.91 (s, 3H), 5.39 (s, 2H), 6.79 (dd, J = 8.7, 2.3 Hz, 1H), 6.89 (d, J = 2.3 Hz, 1H), 7.66 (s, 1H), 7.73-7.83 (m, 2H), 8.29 (dd, J = 8.4, 2.3 Hz, 1H), 9.00 (d, J = 2.3 Hz, 1H), 14.12 (s, 1H)
78		207-210	1H-NMR (**DMSO**) δ 1.39-2.03 (m, 8H), 2.98-3.17 (m, 1H), 3.83 (s, 3H), 5.26 (s, 2H), 6.96 (d, J = 8.3 Hz, 1H), 7.05-7.44 (m, 3H), 7.76 (d, J = 8.3 Hz, 1H), 8.27 (d, J = 8.3 Hz, 1H), 8.97 (s, 1H), 11.66 (s, 1H)
79		187-189	1H-NMR (**DMSO**) δ 3.89 (s, 3H), 3.92 (s, 3H), 5.34 (s, 2H), 6.70 (dd, J = 8.8, 2.4 Hz, 1H), 6.77 (d, J = 2.4 Hz, 1H), 6.92 (d, J = 8.3 Hz, 1H), 7.52 (s, 1H), 7.78 (d, J = 8.3 Hz, 1H), 8.06 (d, J = 8.8 Hz, 1H), 8.20-8.31 (m, 2H), 8.75 (d, J = 1.5 Hz, 1H), 8.90-9.07 (m, 1H), 12.47 (s, 1H)
80		203-205	1H-NMR (**DMSO**) δ 2.48 (s, 3H), 3.90 (s, 3H), 5.33 (s, 2H), 6.70 (dd, J = 8.8, 2.4 Hz, 1H), 6.77 (d, J = 2.4 Hz, 1H), 7.33 (d, J = 8.3 Hz, 1H), 7.54 (s, 1H), 7.78 (d, J = 8.3

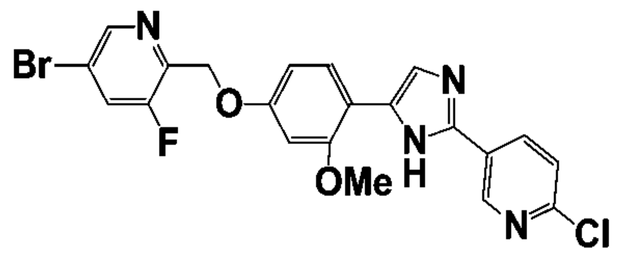
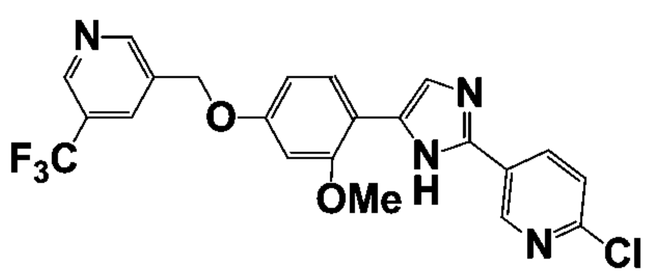
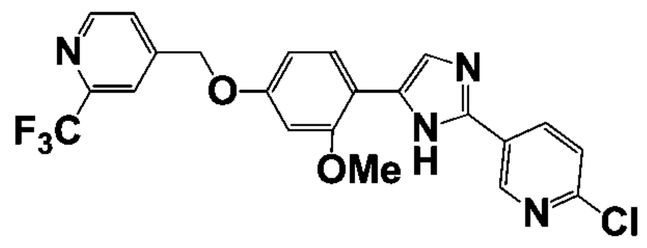
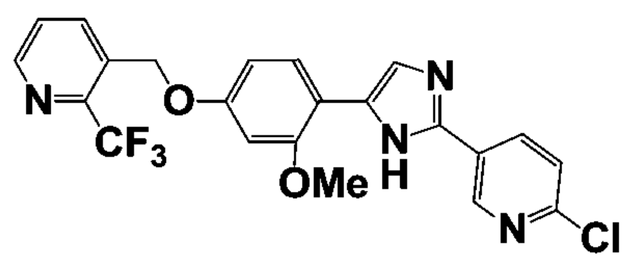
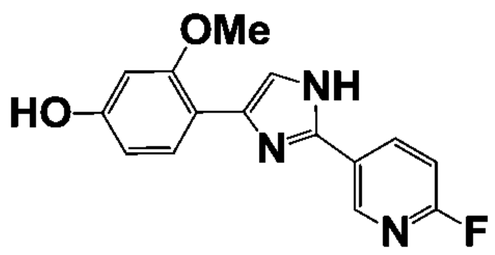
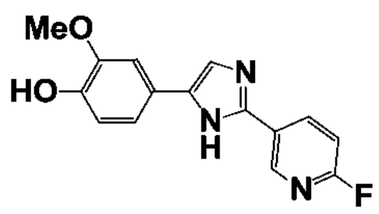
			Hz, 1H), 8.08 (d, J = 8.8 Hz, 1H), 8.19 (dd, J = 8.3, 2.2 Hz, 1H), 8.27 (dd, J = 8.3, 2.0 Hz, 1H), 8.99 (s, 1H), 9.04 (d, J = 2.0 Hz, 1H), 12.60 (s, 1H)
81		135-145	1H-NMR (**CDCL3**) δ 1.14-1.59 (m, 5H), 1.64-2.18 (m, 5H), 2.64-2.90 (m, 1H), 3.91 (s, 3H), 5.33 (s, 2H), 6.83 (d, J = 8.3 Hz, 1H), 7.04-7.22 (m, 2H), 7.36 (s, 1H), 7.72 (d, J = 8.3 Hz, 1H), 7.93 (dd, J = 8.3, 2.0 Hz, 1H), 8.84 (s, 1H), 9.50 (s, 1H)
82		153-155	1H-NMR (**DMSO**) δ 0.77-0.92 (m, 4H), 1.87-1.99 (m, 1H), 3.83 (s, 3H), 5.25 (s, 2H), 6.91-7.26 (m, 2H), 7.25-7.42 (m, 2H), 7.75 (d, J = 8.3 Hz, 1H), 8.27 (d, J = 8.3 Hz, 1H), 8.96 (s, 1H), 11.67 (s, 1H)
83		157-160	1H-NMR (**DMSO**) δ 0.73-0.99 (m, 4H), 1.87-2.05 (m, 1H), 3.84 (s, 3H), 5.10 (s, 2H), 6.58-6.76 (m, 2H), 7.21 (s, 1H), 7.46 (d, J = 8.0 Hz, 1H), 7.54 (dd, J = 8.0, 8.0 Hz, 1H), 7.60 (d, J = 9.8 Hz, 1H), 7.88 (d, J = 8.8 Hz, 1H), 11.60 (s, 1H)
84		181-184	1H-NMR (**DMSO**) δ 1.33 (t, J = 7.0 Hz, 3H), 3.89 (s, 3H), 4.34 (q, J = 7.0 Hz, 2H), 5.14 (s, 2H), 6.64-6.80 (m, 2H), 6.88 (d, J = 8.3 Hz, 1H), 7.43-7.69 (m, 4H), 8.07 (d, J = 8.3 Hz, 1H), 8.23 (dd, J = 8.3, 2.0 Hz, 1H), 8.73 (d, J = 2.0 Hz, 1H), 12.47 (s, 1H)
85		201-203 (分解)	1H-NMR (**DMSO**) δ 3.88 (s, 3H), 5.29 (s, 2H), 7.04 (d, J = 7.8 Hz, 1H), 7.27-7.37 (m, 2H), 7.47 (s, 1H), 7.60-7.84 (m, 2H), 8.19 (dd, J = 7.8, 2.0 Hz, 1H), 8.27 (dd, J =

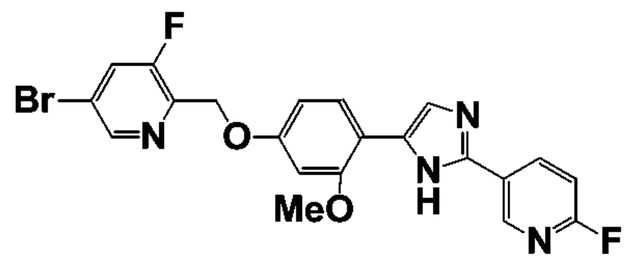
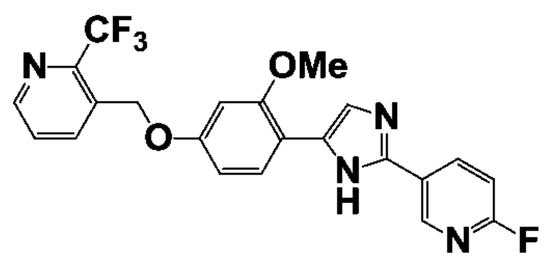
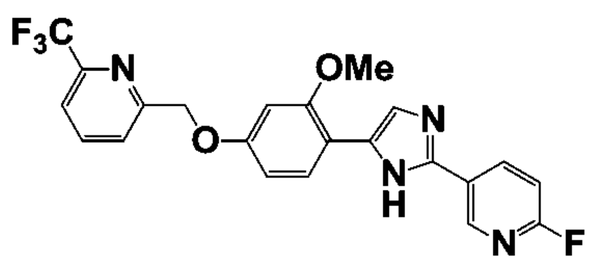
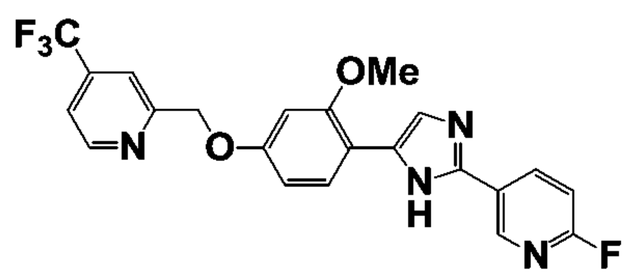
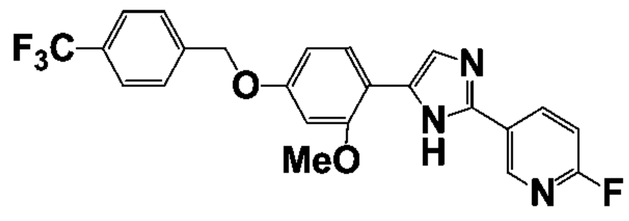
			8.3, 2.0 Hz, 1H), 8.97 (d, J = 2.0 Hz, 1H), 9.03 (s, 1H)
86		218-220 (分解)	1H-NMR (**DMSO**) δ 2.66 (s, 3H), 3.94 (s, 3H), 5.21 (s, 2H), 6.77-6.90 (m, 2H), 7.49 (d, J = 8.3 Hz, 1H), 7.57 (dd, J = 8.3, 8.3 Hz, 1H), 7.63 (dd, J = 9.5, 1.2 Hz, 1H), 7.73 (d, J = 8.3 Hz, 1H), 7.93 (s, 1H), 8.02 (d, J = 8.8 Hz, 1H), 8.75 (d, J = 8.3 Hz, 1H), 9.38 (s, 1H)
87		217-220	1H-NMR (**CDCL3**) δ 4.03 (s, 3H), 5.37 (s, 2H), 6.89 (d, J = 8.3 Hz, 1H), 7.04-7.43 (m, 3H), 7.55 (d, J = 2.0 Hz, 1H), 7.68-7.84 (m, 2H), 7.84-8.04 (m, 1H), 8.23 (d, J = 7.8 Hz, 1H), 8.53 (dd, J = 4.9, 1.0 Hz, 1H), 8.86 (s, 1H), 10.66 (s, 1H)
88		214-216	1H-NMR (**DMSO**) δ 3.95 (s, 3H), 5.43 (s, 2H), 6.83 (dd, J = 8.3, 2.0 Hz, 1H), 6.93 (d, J = 2.0 Hz, 1H), 7.68 (dd, J = 7.3, 4.9 Hz, 1H), 7.81 (d, J = 8.3 Hz, 1H), 7.91 (s, 1H), 8.06 (d, J = 8.3 Hz, 1H), 8.16 (ddd, J = 7.8, 7.3, 1.0 Hz, 1H), 8.31 (dd, J = 8.3, 2.4 Hz, 1H), 8.66 (d, J = 7.8 Hz, 1H), 8.84 (dd, J = 4.9, 1.0 Hz, 1H), 9.02 (d, J = 2.4 Hz, 1H)
89		240-242	1H-NMR (**DMSO**) δ 3.96 (s, 3H), 5.43 (s, 2H), 6.84 (dd, J = 8.5, 2.0 Hz, 1H), 6.93 (d, J = 2.0 Hz, 1H), 7.73-7.86 (m, 2H), 7.97 (s, 1H), 8.03 (d, J = 8.3 Hz, 1H), 8.31 (dd, J = 8.3, 2.4 Hz, 1H), 8.75 (d, J = 7.8 Hz, 1H), 8.83 (d, J = 4.9 Hz, 1H), 9.02 (d, J = 1.0 Hz, 1H), 9.44 (d, J = 2.4 Hz, 1H)

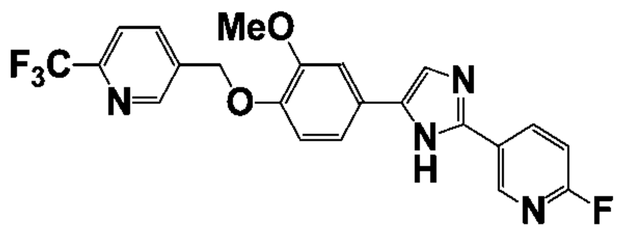
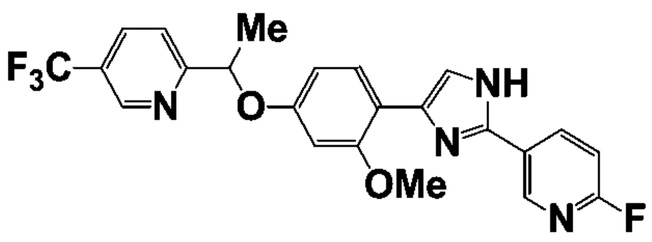
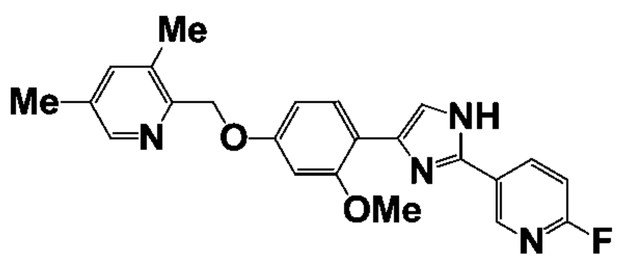
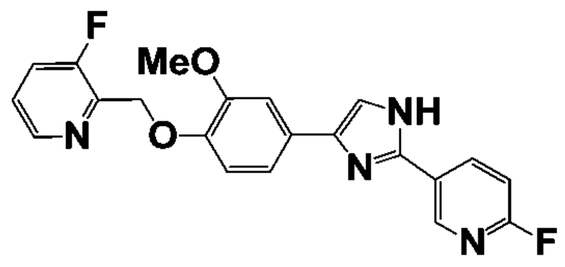
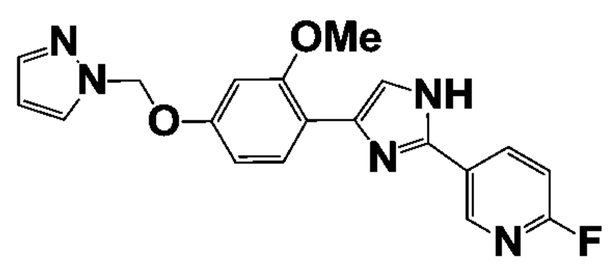
90		219-222	1H-NMR (**DMSO**) δ 3.94 (s, 3H), 5.23 (s, 2H), 6.82 (dd, J = 8.3, 2.2 Hz, 1H), 6.86 (d, J = 2.0 Hz, 1H), 7.50 (dd, J = 8.0, 1.7 Hz, 1H), 7.58 (dd, J = 8.0, 8.0 Hz, 1H), 7.61-7.75 (m, J = 3.7 Hz, 2H), 7.87 (s, 1H), 8.03 (d, J = 8.3 Hz, 1H), 8.14 (ddd, J = 7.8, 7.8, 1.5 Hz, 1H), 8.56 (d, J = 7.8 Hz, 1H), 8.82 (d, J = 4.9 Hz, 1H)
91		143-146	1H-NMR (**CDCL3**) δ 4.01 (s, 3H), 5.12 (s, 2H), 6.59-6.76 (m, 2H), 7.21-7.47 (m, 4H), 7.51 (s, 1H), 7.76 (s, 1H), 8.24 (ddd, J = 6.1, 2.0, 1.5 Hz, 1H), 8.57 (dd, J = 4.9, 1.5 Hz, 1H), 9.06 (d, J = 2.0 Hz, 1H)
92		220-222	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.17 (s, 2H), 6.67-6.91 (m, 2H), 7.44-7.86 (m, 5H), 8.09 (d, J = 7.3 Hz, 1H), 8.38 (d, J = 7.8 Hz, 1H), 9.01 (s, 1H), 12.80 (s, 1H)
93		>280	1H-NMR (**DMSO**) δ 3.94 (s, 3H), 5.38 (s, 2H), 7.19 (d, J = 8.3 Hz, 1H), 7.51 (dd, J = 8.3, 1.5 Hz, 1H), 7.71 (s, 1H), 7.77 (d, J = 8.3 Hz, 1H), 7.84 (d, J = 8.3 Hz, 1H), 8.21 (s, 1H), 8.30 (dd, J = 8.3, 2.0 Hz, 1H), 8.65 (dd, J = 8.3, 1.7 Hz, 1H), 9.00 (s, 1H), 9.22 (d, J = 2.0 Hz, 1H)
94		215-217	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.35 (s, 2H), 6.72 (dd, J = 8.3, 2.0 Hz, 1H), 6.79 (d, J = 2.0 Hz, 1H), 7.48-7.68 (m, 2H), 7.78 (d, J = 8.3 Hz, 1H), 8.04 (s, 1H), 8.27 (dd, J = 8.3, 2.0 Hz, 1H), 8.37 (dd, J = 8.3, 2.4 Hz, 1H), 8.90-9.09 (m, 2H), 12.75 (s, 1H)

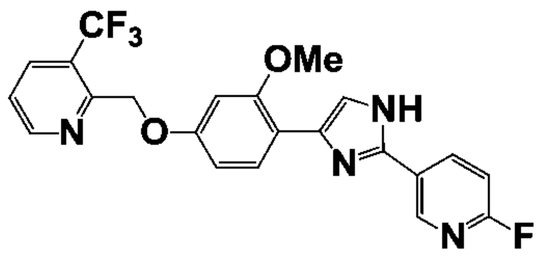
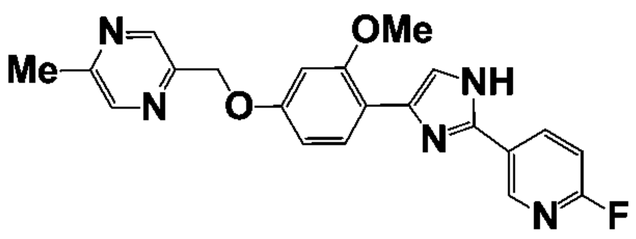
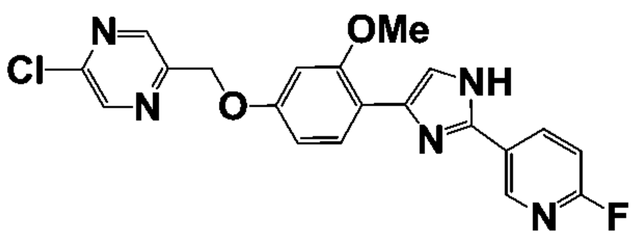
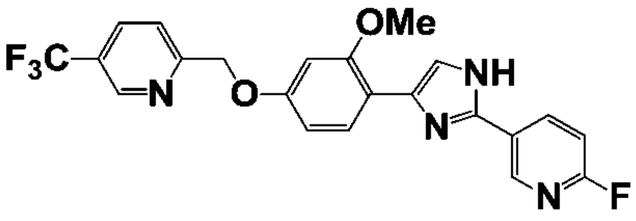
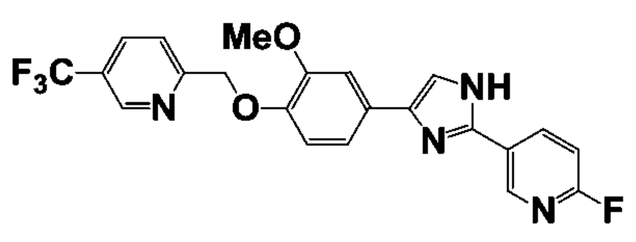
95		175-177	1H-NMR (**DMSO**) δ 3.84 (s, 3H), 5.11 (s, 2H), 7.09 (d, J = 8.3 Hz, 1H), 7.39 (dd, J = 8.3, 1.5 Hz, 1H), 7.43-7.56 (m, 3H), 7.61 (dd, J = 9.8, 2.0 Hz, 1H), 7.81 (s, 1H), 8.01 (d, J = 8.3 Hz, 1H), 8.56 (dd, J = 8.3, 1.5 Hz, 1H), 9.33 (d, J = 1.5 Hz, 1H), 13.04 (s, 1H)
96		209-211	1H-NMR (**DMSO**) δ 3.92 (s, 3H), 5.35 (s, 2H), 6.73 (dd, J = 8.7, 1.7 Hz, 1H), 6.81 (s, 1H), 7.63 (s, 1H), 7.79 (d, J = 8.3 Hz, 1H), 7.93-8.14 (m, 2H), 8.27 (dd, J = 8.3, 1.9 Hz, 1H), 8.57 (d, J = 8.7 Hz, 1H), 8.99 (d, J = 0.8 Hz, 1H), 9.34 (s, 1H), 12.93 (s, 1H)
97		201-203	1H-NMR (**DMSO**) δ 3.89 (s, 3H), 5.30 (s, 2H), 7.07 (d, J = 7.9 Hz, 1H), 7.38 (d, J = 7.9 Hz, 1H), 7.50 (s, 1H), 7.77 (d, J = 8.3 Hz, 1H), 7.87 (s, 1H), 8.01 (d, J = 8.3 Hz, 1H), 8.28 (dd, J = 7.9, 0.8 Hz, 1H), 8.56 (d, J = 7.9 Hz, 1H), 8.98 (s, 1H), 9.33 (s, 1H)
98		226-230	1H-NMR (**DMSO**) δ 3.92 (s, 3H), 5.18 (s, 2H), 6.74-6.87 (m, 2H), 7.48 (d, J = 8.3 Hz, 1H), 7.56 (dd, J = 8.3, 8.3 Hz, 1H), 7.62 (d, J = 9.5 Hz, 1H), 7.87 (s, 1H), 8.03 (d, J = 8.3 Hz, 1H), 8.46 (d, J = 5.4 Hz, 2H), 8.87 (d, J = 5.4 Hz, 2H)
99		183-185	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.16 (s, 2H), 6.68-6.81 (m, 2H), 7.47 (dd, J = 8.3, 1.2 Hz, 1H), 7.50-7.73 (m, 3H), 7.95-8.20 (m, 2H), 8.57 (d, J = 7.9 Hz, 1H), 9.34 (s, 1H), 12.97 (s, 1H)

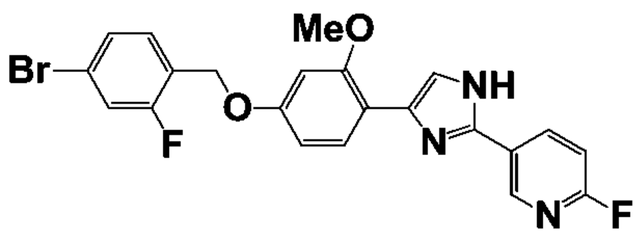
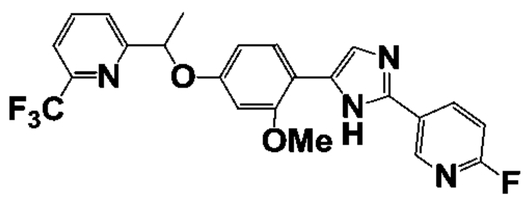
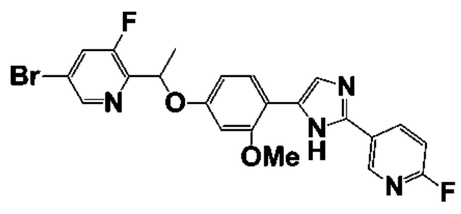
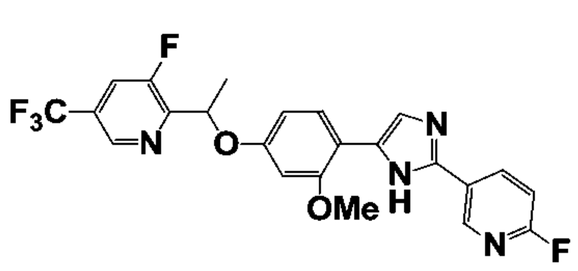
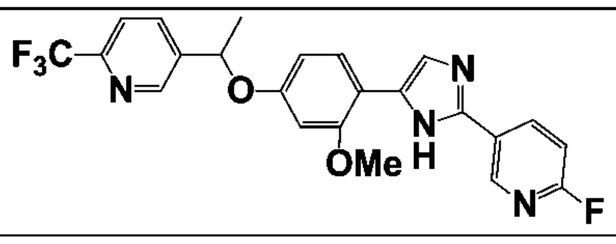
100		220-228	1H-NMR (**CDCL3**) δ 4.00 (s, 3H), 5.34 (s, 2H), 6.61 (dd, J = 8.3, 2.4 Hz, 1H), 6.66 (d, J = 2.4 Hz, 1H), 7.20-7.34 (m, 1H), 7.41 (d, J = 8.3 Hz, 1H), 7.45-7.59 (m, 1H), 7.75 (d, J = 5.4 Hz, 1H), 8.12-8.28 (m, 1H), 8.77-8.87 (m, 2H), 8.92 (s, 1H)
101		213-218	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.13 (s, 2H), 6.67-6.82 (m, 2H), 7.13 (ddd, J = 8.5, 8.5, 2.3 Hz, 1H), 7.30 (ddd, J = 9.8, 9.8, 2.3 Hz, 1H), 7.57-7.72 (m, 3H), 8.08 (d, J = 9.3 Hz, 1H), 8.36 (dd, J = 8.3, 2.0 Hz, 1H), 8.99 (d, J = 2.0 Hz, 1H), 12.78 (s, 1H)
102		164-186	1H-NMR (**DMSO**) δ 3.80 (s, 3H), 5.67 (s, 2H), 6.41 (dd, J = 8.3, 2.4 Hz, 1H), 6.45 (d, J = 2.4 Hz, 1H), 7.57 (d, J = 8.3 Hz, 1H), 7.62 (s, 1H), 7.91 (d, J = 8.8 Hz, 1H), 8.10 (dd, J = 8.8, 2.4 Hz, 1H), 8.35 (dd, J = 9.8, 1.5 Hz, 1H), 8.67 (d, J = 2.4 Hz, 1H), 8.71-8.81 (m, 1H), 9.44 (s, 1H)
103		190-192	1H-NMR (**DMSO**) δ 3.89 (s, 3H), 5.18-5.29 (m, 2H), 6.64-6.81 (m, 2H), 7.45-7.67 (m, 2H), 7.92-8.12 (m, 2H), 8.36 (dd, J = 8.3, 2.4 Hz, 1H), 8.56 (d, J = 2.2 Hz, 1H), 9.00 (d, J = 2.4 Hz, 1H), 12.72 (s, 1H)
104		211-218	1H-NMR (**DMSO**) δ 3.89 (s, 3H), 5.26 (d, J = 1.5 Hz, 2H), 6.64-6.82 (m, 2H), 7.49-7.59 (m, 1H), 7.62 (d, J = 8.3 Hz, 1H), 8.00 (s, 1H), 8.18 (dd, J = 9.8, 2.0 Hz, 1H), 8.37 (dd, J = 8.3, 2.4 Hz, 1H), 8.57 (d, J = 2.0 Hz, 1H), 8.99 (d, J = 2.4 Hz, 1H)

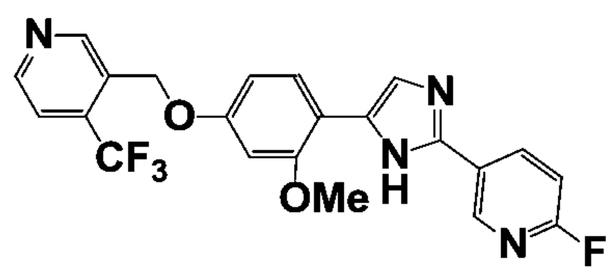
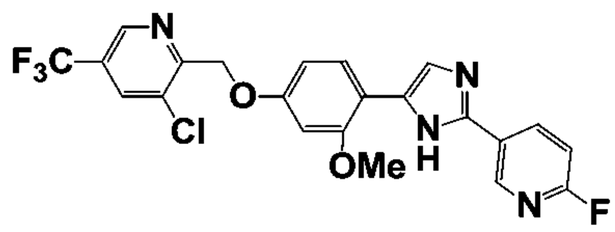
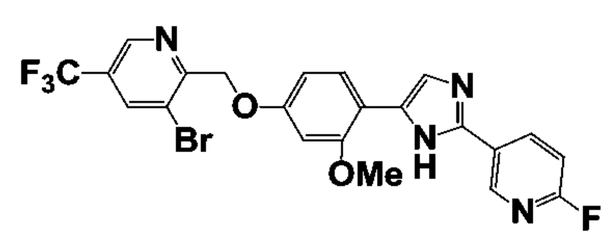
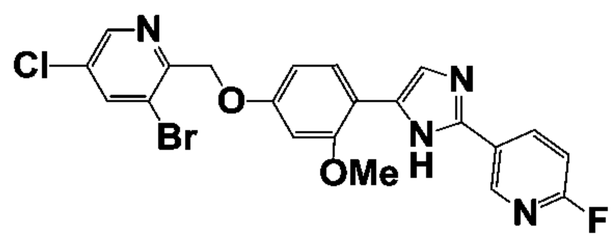
105		219-225	1H-NMR (**DMSO**) δ 3.89 (s, 3H), 5.25 (d, J = 2.0 Hz, 2H), 6.67-6.79 (m, 2H), 7.56 (s, 1H), 7.62 (dd, J = 8.3, 0.7 Hz, 1H), 7.99 (s, 1H), 8.28 (dd, J = 9.4, 1.8 Hz, 1H), 8.37 (dd, J = 8.3, 2.4 Hz, 1H), 8.64 (dd, J = 1.8, 1.1 Hz, 1H), 8.99 (d, J = 2.4 Hz, 1H), 12.73 (s, 1H)
106		191-203	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.30 (s, 2H), 6.71-6.80 (m, 2H), 7.58-7.65 (m, 2H), 8.10 (d, J = 8.8 Hz, 1H), 8.31-8.40 (m, 2H), 8.94-9.05 (m, 3H), 12.79 (s, 1H)
107		174-223	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.35 (s, 2H), 6.68-6.83 (m, 2H), 7.54-7.71 (m, 2H), 7.80 (d, J = 4.9 Hz, 1H), 7.98 (s, 1H), 8.09 (d, J = 8.3 Hz, 1H), 8.36 (d, J = 8.3 Hz, 1H), 8.79 (d, J = 4.9 Hz, 1H), 8.99 (s, 1H)
108		231-233	1H-NMR (**DMSO**) δ 3.89 (s, 3H), 5.33 (s, 2H), 6.68-6.78 (m, 2H), 7.49-7.71 (m, 2H), 7.78 (dd, J = 7.9, 4.6 Hz, 1H), 8.07 (s, 1H), 8.26 (d, J = 7.9 Hz, 1H), 8.37 (dd, J = 8.3, 2.5 Hz, 1H), 8.73 (d, J = 4.6 Hz, 1H), 8.99 (d, J = 2.5 Hz, 1H)
109		249-251 (分解)	1H-NMR (**DMSO**) δ 3.84 (s, 3H), 6.35-6.56 (m, 2H), 7.29 (dd, J = 8.5, 2.7 Hz, 1H), 7.50 (s, 1H), 7.94 (s, 0H), 8.40-8.58 (m, 1H), 8.81 (s, 1H), 9.41 (s, 1H), 12.61 (s, 1H)
110			1H-NMR (**DMSO**) δ 3.83 (s, 3H), 6.79 (d, J = 8.3 Hz, 1H), 7.24 (dd, J = 8.3, 2.0 Hz, 1H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.37 (d, J = 2.0 Hz, 1H), 7.60 (s, 1H), 8.48 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H),

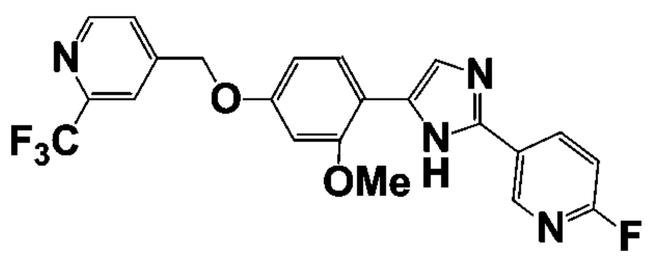
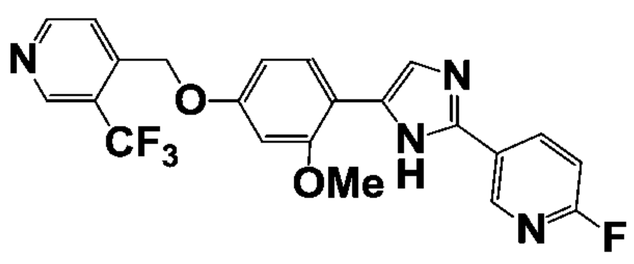
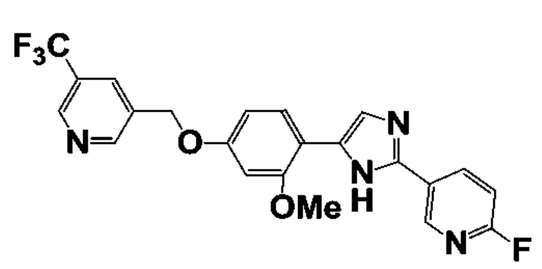
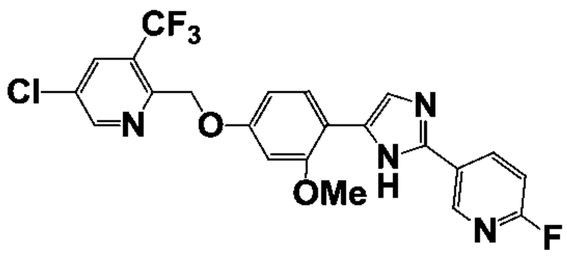
			8.80 (d, J = 2.4 Hz, 1H), 8.96 (s, 1H), 11.95 (s, 1H)
111		油狀	1H-NMR (**CDCL3**) δ 3.97 (s, 3H), 5.26 (d, J = 2.0 Hz, 2H), 6.67-6.77 (m, 2H), 7.02 (dd, J = 8.3, 2.9 Hz, 1H), 7.40-7.79 (m, 3H), 8.29-8.40 (m, 1H), 8.56 (d, J = 1.0 Hz, 1H), 8.62 (d, J = 2.0 Hz, 1H), 10.55 (s, 1H)
112		187-190	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.33 (s, 2H), 6.68-6.77 (m, 2H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.49-7.63 (m, 1H), 7.79 (dd, J = 7.8, 4.9 Hz, 1H), 7.96-8.15 (m, 1H), 8.27 (dd, J = 7.8, 1.2 Hz, 1H), 8.50 (ddd, J = 8.5, 8.5, 2.0 Hz, 1H), 8.73 (dd, J = 4.9, 1.2 Hz, 1H), 8.81 (d, J = 2.0 Hz, 1H)
113			1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.32 (s, 2H), 6.73 (d, J = 8.3 Hz, 1H), 6.81 (s, 1H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.57 (s, 1H), 7.82-7.98 (m, 2H), 7.99-8.27 (m, 2H), 8.50 (ddd, J = 8.5, 8.5, 2.1 Hz, 1H), 8.82 (d, J = 2.1 Hz, 1H), 12.70 (s, 1H)
114		183-186	1H-NMR (**DMSO**) δ 3.87-3.95 (3H), 5.34 (s, 2H), 6.75 (dd, J = 8.7, 2.1 Hz, 1H), 6.82 (d, J = 2.1 Hz, 1H), 7.29 (dd, J = 8.3, 2.5 Hz, 1H), 7.53 (s, 1H), 7.76 (d, J = 5.4 Hz, 1H), 7.90 (s, 1H), 8.02 (s, 1H), 8.51 (ddd, J = 8.3, 8.3, 2.5 Hz, 1H), 8.82 (d, J = 2.5 Hz, 1H), 8.89 (d, J = 5.4 Hz, 1H), 12.69 (s, 1H)
115		125-135	1H-NMR (**CDCL3**) δ 3.97 (s, 3H), 5.16 (s, 2H), 6.58-6.69 (m, 2H), 7.00 (dd, J = 8.3, 2.9 Hz, 1H), 7.40-7.81 (m, 6H), 8.28-8.40 (m,

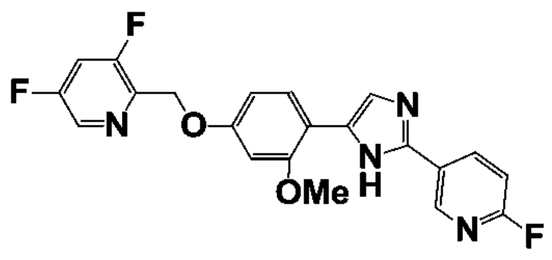
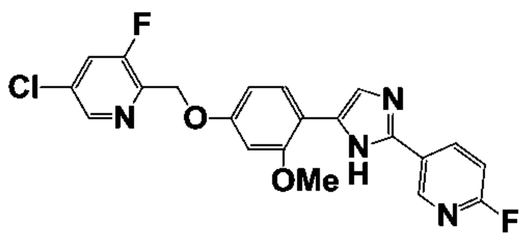
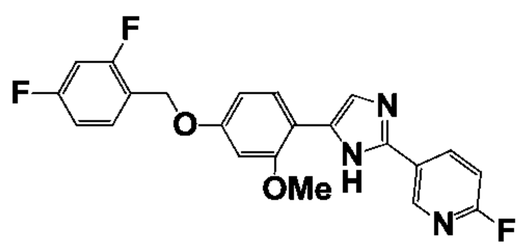
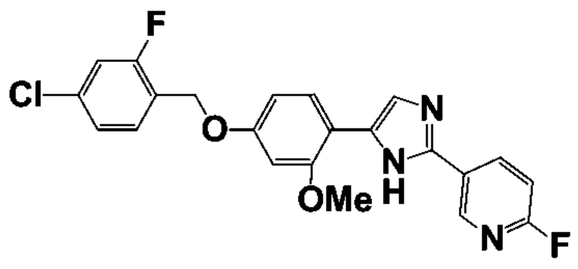
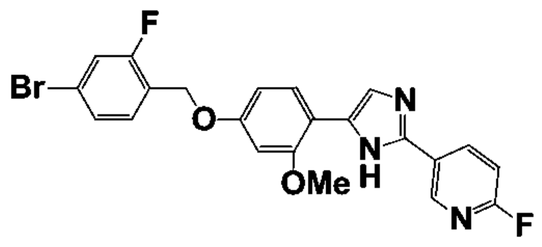
			1H), 8.58-8.67 (m, 1H), 10.62 (s, 1H)
116		144-146	1H-NMR (**CDCL3**) δ 3.96 (s, 3H), 5.25 (s, 2H), 6.92 (d, J = 8.3 Hz, 1H), 7.03 (dd, J = 8.5, 2.7 Hz, 1H), 7.31-7.58 (m, 2H), 7.70 (d, J = 8.3 Hz, 1H), 8.00 (d, J = 8.5 Hz, 1H), 8.39 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.65 (d, J = 2.4 Hz, 1H), 8.80 (d, J = 2.4 Hz, 1H), 9.87 (s, 1H)
117		油狀	1H-NMR (**CDCL3**) δ 1.72 (d, J = 6.5 Hz, 3H), 3.94 (s, 3H), 5.52 (q, J = 6.5 Hz, 1H), 6.48 (dd, J = 8.5, 2.2 Hz, 1H), 6.52-6.73 (m, 1H), 7.00 (dd, J = 8.5, 2.7 Hz, 1H), 7.30-7.66 (m, 3H), 7.91 (d, J = 7.8 Hz, 1H), 8.22-8.43 (m, 1H), 8.51-8.69 (m, 1H), 8.78-8.93 (m, 1H), 10.51 (s, 1H)
118		219-223 (分解)	1H-NMR (**CDCL3**) δ 2.30 (s, 3H), 2.39 (s, 3H), 3.83 (s, 3H), 5.19 (s, 2H), 6.54-6.69 (m, 2H), 6.85-6.96 (m, 1H), 7.34 (s, 1H), 7.44 (s, 1H), 7.71 (s, 1H), 8.18-8.36 (m, 2H), 8.62 (d, J = 1.5 Hz, 1H)
119		68-79	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.20 (s, 2H), 7.11 (d, J = 8.3 Hz, 1H), 7.31 (dd, J = 8.5, 2.7 Hz, 1H), 7.35 (d, J = 8.3 Hz, 1H), 7.43 (s, 1H), 7.49-7.58 (m, 1H), 7.71 (s, 1H), 7.79 (dd, J = 9.8, 8.8 Hz, 1H), 8.37-8.59 (m, 2H), 8.81 (d, J = 2.0 Hz, 1H), 12.73 (s, 1H)
120		172-175	1H-NMR (**DMSO**) δ 3.89 (s, 3H), 6.10 (s, 2H), 6.34 (dd, J = 2.0, 2.0 Hz, 1H), 6.75-6.89 (m, 2H), 7.30 (dd, J = 8.3, 2.4 Hz, 1H), 7.56-7.68 (m, 2H), 7.99 (d, J = 2.0 Hz, 1H), 8.07 (d, J = 8.3

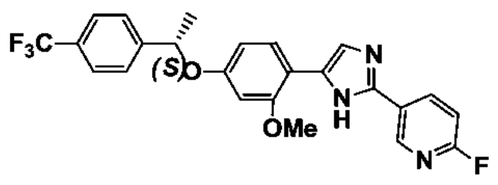
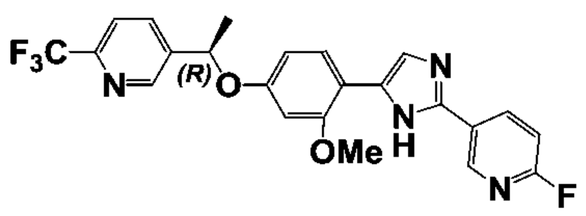
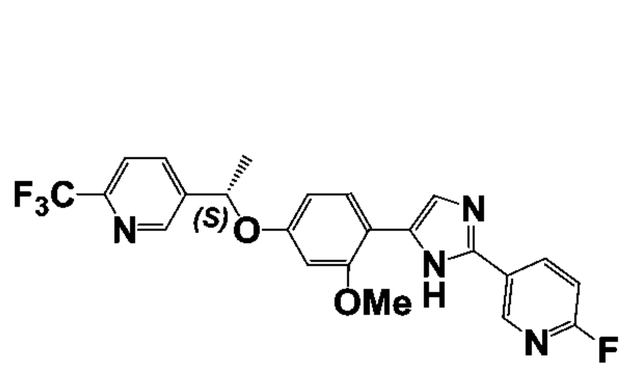
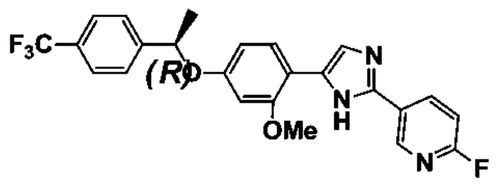
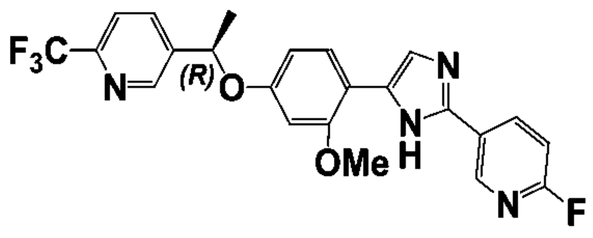
			Hz, 1H), 8.50 (ddd, J = 8.3, 8.3, 2.0 Hz, 1H), 8.81 (d, J = 2.0 Hz, 1H), 12.71 (s, 1H)
121		201-202	1H-NMR (**DMSO**) δ 3.88 (s, 3H), 5.32 (s, 2H), 6.64-6.79 (m, 2H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.57 (s, 1H), 7.67 (dd, J = 8.0, 4.4 Hz, 1H), 8.07 (d, J = 5.9 Hz, 1H), 8.28 (d, J = 8.0 Hz, 1H), 8.50 (ddd, J = 8.5, 8.5, 1.6 Hz, 1H), 8.81 (s, 1H), 8.89 (d, J = 4.4 Hz, 1H), 12.70 (s, 1H)
122		167-170	1H-NMR (**CDCL3**) δ 2.59 (s, 3H), 3.96 (s, 3H), 5.23 (s, 2H), 6.61-6.73 (m, 2H), 6.98 (dd, J = 8.8, 2.4 Hz, 1H), 7.39-7.74 (m, 2H), 8.23-8.39 (m, 1H), 8.46 (d, J = 1.0 Hz, 1H), 8.53-8.65 (m, 1H), 8.69 (d, J = 1.0 Hz, 1H), 10.70 (s, 1H)
123		197-199	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.31 (s, 2H), 6.64-6.91 (m, 2H), 7.30 (d, J = 8.8 Hz, 1H), 7.59 (s, 1H), 8.09 (d, J = 8.3 Hz, 1H), 8.40-8.60 (m, 1H), 8.69 (s, 1H), 8.76-8.88 (m, 2H), 12.70 (s, 1H)
124		141-144	1H-NMR (**CDCL3**) δ 3.98 (s, 3H), 5.31 (s, 2H), 6.65 (dd, J = 8.8, 2.4 Hz, 1H), 6.69 (d, J = 2.0 Hz, 1H), 7.01 (dd, J = 8.3, 2.9 Hz, 1H), 7.48 (s, 1H), 7.56-7.89 (m, 2H), 7.98 (dd, J = 8.3, 2.0 Hz, 1H), 8.34 (ddd, J = 8.3, 8.3, 2.0 Hz, 1H), 8.62 (d, J = 2.0 Hz, 1H), 8.88 (s, 1H), 10.57 (s, 1H)
125		油狀	1H-NMR (**CDCL3**) δ 4.00 (s, 3H), 5.36 (s, 2H), 6.89 (d, J = 8.3 Hz, 1H), 7.03 (dd, J = 8.3, 2.9 Hz, 1H), 7.22 (d, J = 8.3 Hz, 1H), 7.34 (s, 1H), 7.43 (s, 1H), 7.74 (d, J = 8.3 Hz, 1H), 7.95 (dd, J =

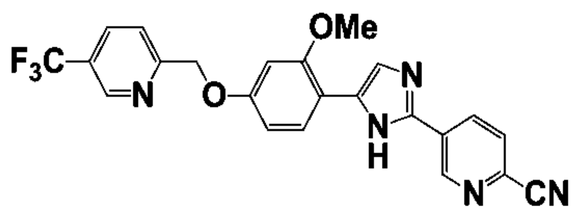
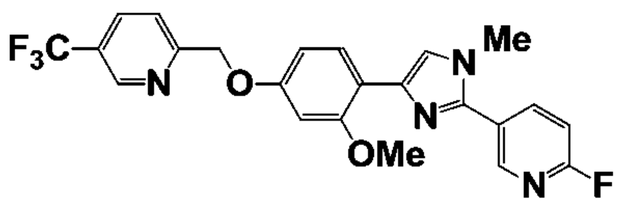
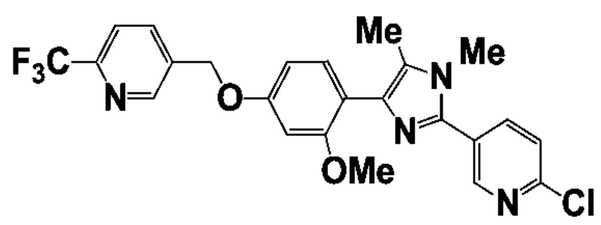
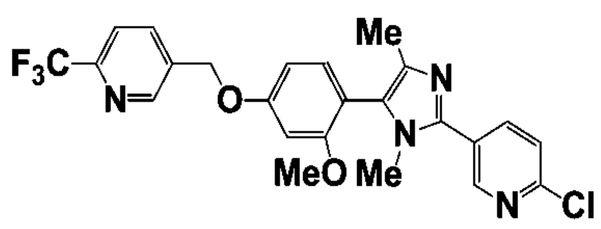
			8.3, 2.0 Hz, 1H), 8.40 (ddd, J = 8.3, 8.3, 2.0 Hz, 1H), 8.65 (d, J = 2.0 Hz, 1H), 8.86 (d, J = 2.0 Hz, 1H)
126		172-176	1H-NMR (**DMSO**) δ 3.94 (s, 3H), 5.15 (s, 2H), 6.67-6.83 (m, 2H), 7.30 (dd, J = 8.3, 2.7 Hz, 1H), 7.46 (d, J = 8.3 Hz, 1H), 7.52-7.72 (m, 3H), 8.08 (d, J = 8.3 Hz, 1H), 8.50 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.81 (d, J = 2.4 Hz, 1H), 12.70 (s, 1H)
127			1H-NMR (**CDCL3**) δ 1.73 (d, J = 6.6 Hz, 3H), 3.92 (s, 3H), 5.54 (q, J = 6.6 Hz, 1H), 6.53 (dd, J = 8.5, 2.3 Hz, 1H), 6.62 (d, J = 2.3 Hz, 1H), 7.01 (dd, J = 8.7, 2.9 Hz, 1H), 7.43 (s, 1H), 7.54-7.71 (m, 3H), 7.85 (dd, J = 7.9, 7.9 Hz, 1H), 8.32 (ddd, J = 8.7, 8.7, 2.5 Hz, 1H), 8.59 (d, J = 2.5 Hz, 1H)
128			1H-NMR (**CDCL3**) δ 1.76 (d, J = 6.3 Hz, 3H), 3.95 (s, 3H), 5.71 (q, J = 6.3 Hz, 1H), 6.55 (dd, J = 8.3, 1.5 Hz, 1H), 6.67 (s, 1H), 7.01 (dd, J = 8.3, 2.4 Hz, 1H), 7.39 (s, 1H), 7.49 (d, J = 8.3 Hz, 1H), 7.60 (d, J = 8.3 Hz, 1H), 8.21-8.42 (m, 1H), 8.51 (s, 1H), 8.59 (s, 1H), 10.51 (s, 1H)
129			1H-NMR (**CDCL3**) δ 1.79 (d, J = 6.3 Hz, 3H), 3.95 (s, 3H), 5.80 (q, J = 6.3 Hz, 1H), 6.54 (dd, J = 8.5, 2.2 Hz, 1H), 6.68 (s, 1H), 7.01 (dd, J = 8.3, 2.4 Hz, 1H), 7.40 (s, 1H), 7.45-7.56 (m, 1H), 7.66 (d, J = 9.3 Hz, 1H), 8.22-8.42 (m, 1H), 8.59 (s, 1H), 8.71 (s, 1H), 10.51 (s, 1H)
130		72-105	1H-NMR (**CDCL3**) δ 1.71 (d, J = 6.8 Hz, 3H), 3.95 (s, 3H), 5.51 (q, J = 6.8 Hz, 1H),

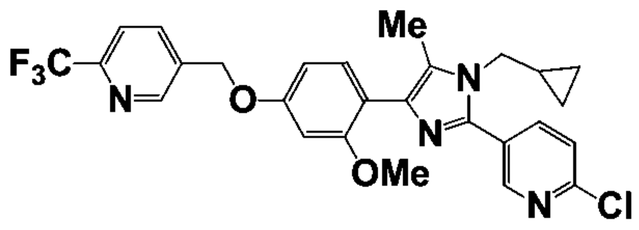
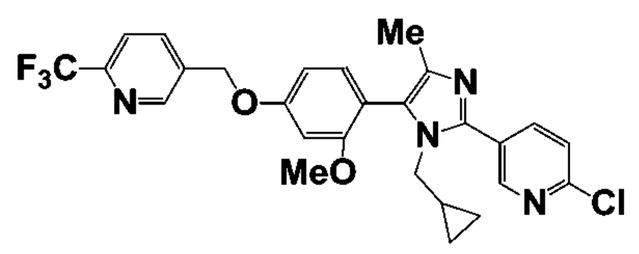
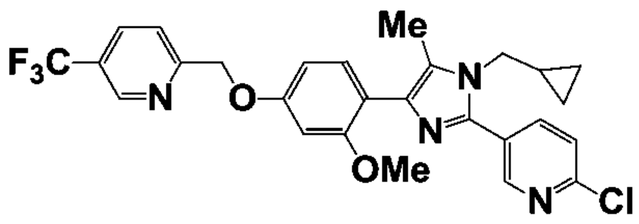
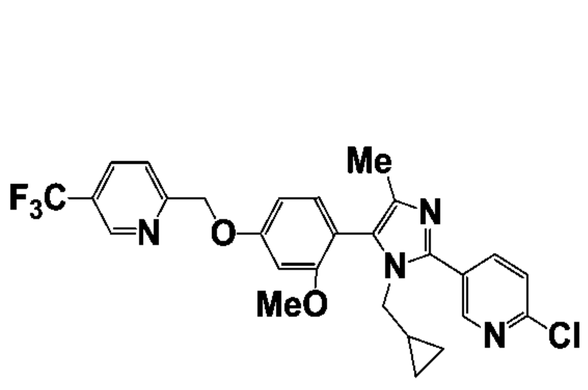
			6.47 (dd, J = 8.3, 2.0 Hz, 1H), 6.60 (s, 1H), 7.01 (dd, J = 8.8, 2.4 Hz, 1H), 7.32-7.62 (m, 2H), 7.68 (d, J = 8.3 Hz, 1H), 7.91 (d, J = 8.3 Hz, 1H), 8.22-8.43 (m, 1H), 8.60 (s, 1H), 8.69-8.85 (m, 1H), 10.52 (s, 1H)
131		178-180	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.32 (s, 2H), 6.69-6.82 (m, 2H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.55 (s, 1H), 7.82 (d, J = 5.4 Hz, 1H), 8.05 (s, 0H), 8.51 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.82 (d, J = 2.4 Hz, 1H), 8.87 (d, J = 5.4 Hz, 1H), 9.04 (s, 1H), 12.66 (s, 1H)
132		185-187	1H-NMR (**DMSO**) δ 3.89 (s, 3H), 5.39 (s, 2H), 6.71 (dd, J = 8.5, 2.2 Hz, 1H), 6.75 (d, J = 2.2 Hz, 1H), 7.30 (dd, J = 8.8, 2.4 Hz, 1H), 7.53 (s, 1H), 8.01 (s, 1H), 8.50 (ddd, J = 8.8, 8.8, 2.3 Hz, 1H), 8.55 (s, 1H), 8.81 (s, 1H), 8.98 (s, 1H)
133		153-170	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.37 (s, 2H), 6.66-6.81 (m, 2H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.55 (s, 1H), 8.06 (s, 1H), 8.50 (ddd, J = 8.5, 8.5, 2.3 Hz, 1H), 8.66 (d, J = 1.7 Hz, 1H), 8.82 (d, J = 2.3 Hz, 1H), 9.01 (d, J = 1.7 Hz, 1H), 12.68 (s, 1H)
134		176-180	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.26 (s, 2H), 6.65-6.83 (m, 2H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.58 (s, 1H), 8.07 (d, J = 8.3 Hz, 1H), 8.43 (d, J = 2.4 Hz, 1H), 8.50 (ddd, J = 8.5, 8.5, 2.0 Hz, 1H), 8.68 (d, J = 2.4 Hz, 1H), 8.82 (d, J = 2.0 Hz, 1H), 12.69 (s, 1H)

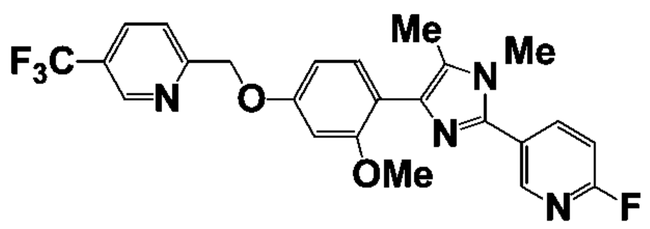
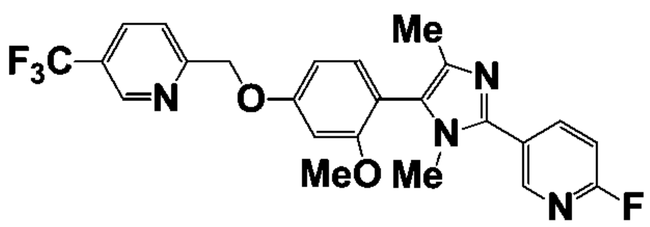
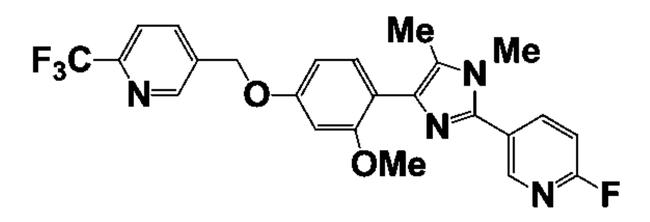
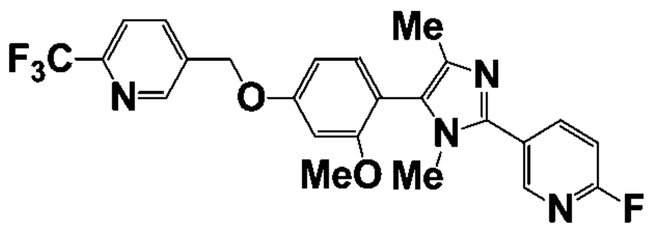
135		212-244	1H-NMR (**CDCL3**) δ 3.95 (s, 3H), 5.16 (s, 2H), 6.55-6.71 (m, 2H), 6.86-7.04 (m, 1H), 7.43-7.62 (m, 2H), 7.70-7.85 (m, 1H), 7.96-8.01 (m, 1H), 8.37 (s, 1H), 8.60-8.80 (m, 2H), 11.77 (s, 1H)
136		181-192	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.36 (s, 2H), 6.69 (dd, J = 8.5, 2.2 Hz, 1H), 6.76 (d, J = 2.2 Hz, 1H), 7.30 (dd, J = 8.8, 2.4 Hz, 1H), 7.56 (s, 1H), 7.83 (d, J = 4.9 Hz, 1H), 8.11 (s, 1H), 8.50 (ddd, J = 8.8, 8.8, 2.0 Hz, 1H), 8.81 (d, J = 2.0 Hz, 1H), 8.91 (d, J = 4.9 Hz, 1H), 8.97 (s, 1H)
137		210-212 (分解)	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.31 (s, 2H), 6.69-6.85 (m, 2H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.57 (s, 1H), 8.08 (s, 1H), 8.26-8.40 (m, 1H), 8.51 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.82 (d, J = 2.4 Hz, 1H), 8.97 (d, J = 1.5 Hz, 1H), 9.01 (d, J = 1.5 Hz, 1H), 12.70 (s, 1H)
138		非晶質	1H-NMR (**CDCL3**) δ 3.95 (s, 3H), 5.35 (s, 2H), 6.58-6.73 (m, 2H), 6.99 (dd, J = 8.5, 2.7 Hz, 1H), 7.35-7.74 (m, 2H), 8.03 (d, J = 2.1 Hz, 1H), 8.22-8.40 (m, 1H), 8.52-8.70 (m, 1H), 8.77 (d, J = 2.7 Hz, 1H), 10.66 (s, 1H)
139		>230	1H-NMR (**CDCL3**) δ 3.97 (s, 3H), 5.36 (d, J = 1.0 Hz, 2H), 6.66-6.77 (m, 2H), 7.02 (dd, J = 8.8, 2.9 Hz, 1H), 7.48 (s, 1H), 7.57-7.89 (m, 2H), 8.30-8.42 (m, 1H), 8.58-8.68 (m, 1H), 8.71-8.80 (m, 1H), 10.58 (s, 1H)

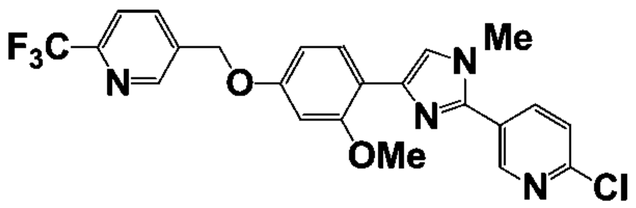
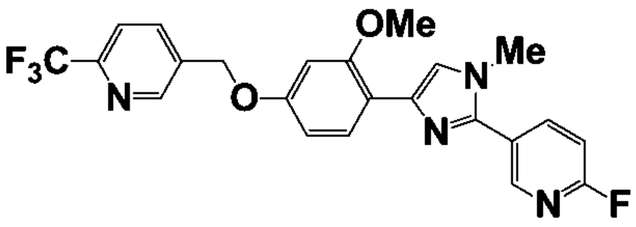
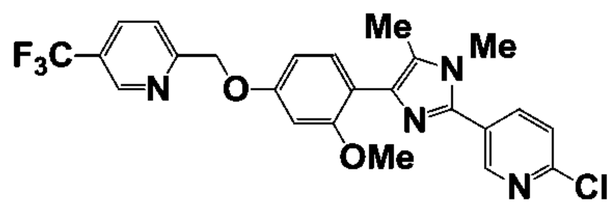
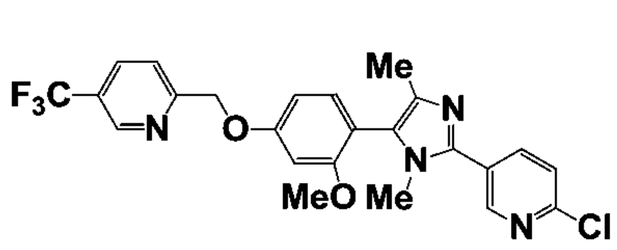
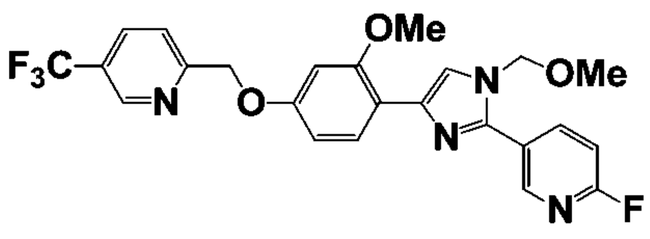
140		188-191	1H-NMR (**DMSO**) δ 3.89 (s, 3H), 5.24 (s, 2H), 6.68-6.78 (m, 2H), 7.30 (dd, J = 8.7, 2.5 Hz, 1H), 7.54 (s, 1H), 8.03 (ddd, J = 9.5, 9.5, 2.5 Hz, 2H), 8.50 (ddd, J = 8.7, 8.7, 2.1 Hz, 1H), 8.56 (d, J = 2.5 Hz, 1H), 8.82 (d, J = 2.1 Hz, 1H), 12.66 (s, 1H)
141		174-176	1H-NMR (**CDCL3**) δ 3.98 (s, 3H), 5.27 (d, J = 2.1 Hz, 2H), 6.66-6.77 (m, 2H), 7.02 (dd, J = 8.3, 2.5 Hz, 1H), 7.41-7.49 (m, 1H), 7.52 (dd, J = 8.9, 2.1 Hz, 1H), 7.56-7.67 (m, 1H), 8.27-8.41 (m, 1H), 8.46 (dd, J = 2.1, 0.8 Hz, 1H), 8.54-8.70 (m, 1H), 10.54 (s, 1H)
142		168-173	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.14 (s, 2H), 6.66-6.81 (m, 2H), 7.14 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 7.22-7.40 (m, 2H), 7.49-7.75 (m, 2H), 8.08 (s, 1H), 8.51 (ddd, J = 8.2, 8.2, 2.4 Hz, 1H), 8.82 (d, J = 2.4 Hz, 1H), 12.66 (s, 1H)
143		178-180	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.16 (s, 2H), 6.65-6.86 (m, 2H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.34 (dd, J = 8.3, 2.0 Hz, 1H), 7.50 (dd, J = 10.2, 2.0 Hz, 1H), 7.55-7.75 (m, 2H), 8.08 (d, J = 8.3 Hz, 1H), 8.41-8.60 (m, 1H), 8.82 (s, 1H), 12.70 (s, 1H)
144		177-180	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.15 (s, 2H), 6.65-6.82 (m, 2H), 7.30 (dd, J = 8.3, 2.4 Hz, 1H), 7.47 (dd, J = 8.3, 1.5 Hz, 1H), 7.51-7.70 (m, 3H), 8.08 (d, J = 8.3 Hz, 1H), 8.41-8.60 (m, 1H), 8.82 (s, 1H), 12.70 (s, 1H)

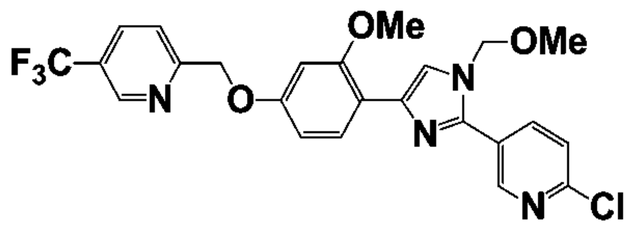
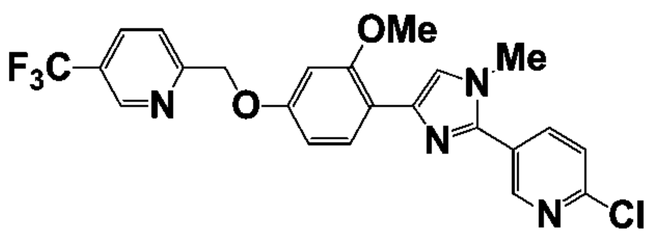
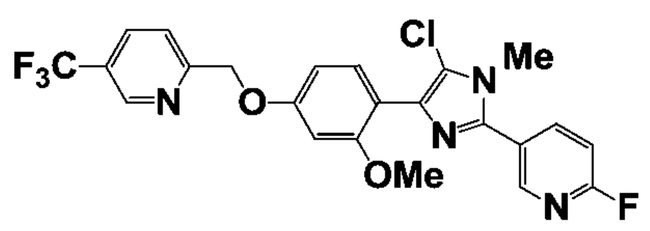
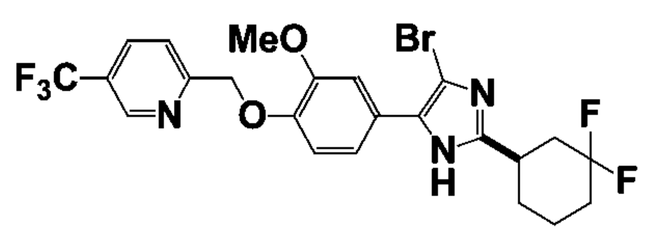
145			1H-NMR (**CDCL3**) δ 1.67 (d, J = 6.3 Hz, 4H), 3.93 (s, 3H), 5.40 (q, J = 6.3 Hz, 1H), 6.46 (dd, J = 8.8, 2.0 Hz, 1H), 6.58 (s, 1H), 7.00 (dd, J = 8.5, 2.7 Hz, 1H), 7.32-7.72 (m, 6H), 8.22-8.41 (m, 1H), 8.59 (s, 1H), 10.51 (s, 1H)
146		非晶質	1H-NMR (**CDCL3**) δ 1.72 (d, J = 6.5 Hz, 3H), 3.93 (s, 3H), 5.52 (q, J = 6.5 Hz, 1H), 6.50 (dd, J = 8.8, 2.4 Hz, 1H), 6.62 (d, J = 2.4 Hz, 1H), 7.01 (dd, J = 8.5, 2.7 Hz, 1H), 7.69 (d, J = 8.3 Hz, 1H), 7.87-7.99 (m, 2H), 8.30 (ddd, J = 9.2, 8.5, 1.5 Hz, 1H), 8.57 (s, 1H), 8.77 (d, J = 1.5 Hz, 1H), 10.51 (s, 1H)
147			1H-NMR (**CDCL3**) δ 1.72 (d, J = 6.8 Hz, 3H), 3.96 (s, 3H), 5.51 (q, J = 6.8 Hz, 1H), 6.47 (dd, J = 8.8, 2.0 Hz, 1H), 6.60 (s, 1H), 7.01 (dd, J = 8.5, 2.7 Hz, 1H), 7.32-7.63 (m, 2H), 7.68 (d, J = 7.8 Hz, 1H), 7.91 (dd, J = 8.3, 2.0 Hz, 1H), 8.22-8.43 (m, 1H), 8.60 (s, 1H), 8.77 (d, J = 1.5 Hz, 1H), 10.50 (s, 1H)
148			1H-NMR (**CDCL3**) δ 1.67 (d, J = 6.3 Hz, 3H), 3.94 (s, 3H), 5.40 (q, J = 6.3 Hz, 1H), 6.46 (dd, J = 8.8, 1.5 Hz, 1H), 6.58 (s, 1H), 7.01 (dd, J = 8.5, 2.2 Hz, 1H), 7.33-7.68 (m, 6H), 8.21-8.42 (m, 1H), 8.59 (s, 1H), 10.50 (s, 1H)
149		非晶質	1H-NMR (**CDCL3**) δ 1.71 (d, J = 6.8 Hz, 3H), 3.91 (s, 3H), 5.50 (q, J = 6.8 Hz, 1H), 6.45 (dd, J = 8.5, 2.2 Hz, 1H), 6.58 (d, J = 2.0 Hz, 1H), 6.96 (dd, J = 8.5, 2.7 Hz, 1H), 7.44 (s, 1H), 7.52-7.84

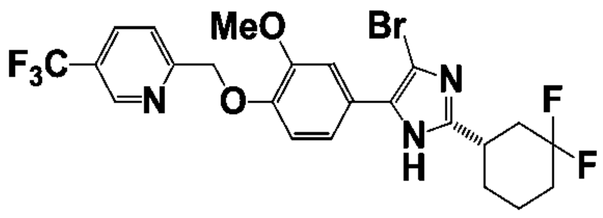
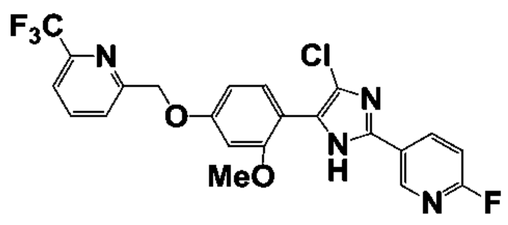
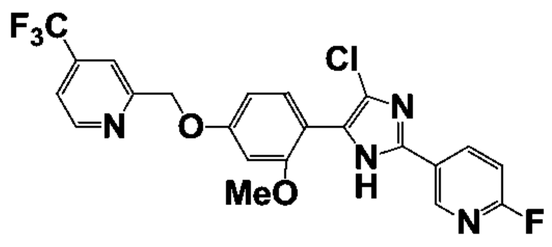
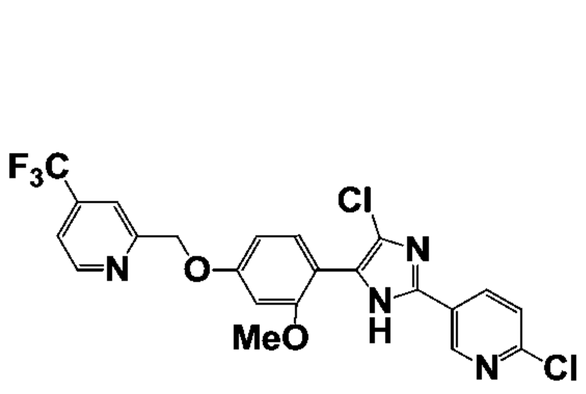
			(m, 2H), 7.91 (dd, J = 8.0, 1.7 Hz, 1H), 8.30 (ddd, J = 8.5, 8.5, 1.5 Hz, 1H), 8.60 (s, 1H), 8.76 (d, J = 1.5 Hz, 1H)
150		241-244 (分解)	1H-NMR (**DMSO**) δ 3.92 (s, 3H), 5.35 (s, 2H), 6.72 (dd, J = 8.5, 2.2 Hz, 1H), 6.79 (d, J = 2.2 Hz, 1H), 7.70 (s, 1H), 7.79 (d, J = 8.3 Hz, 1H), 8.07-8.14 (m, 2H), 8.27 (dd, J = 8.3, 2.0 Hz, 1H), 8.49 (dd, J = 8.3, 2.2 Hz, 1H), 8.99 (s, 1H), 9.32 (d, J = 2.2 Hz, 1H), 13.04 (s, 1H)
151		168-171	1H-NMR (**CDCL3**) δ 3.78 (s, 3H), 3.95 (s, 3H), 5.31 (s, 2H), 6.56-6.77 (m, 2H), 7.05 (dd, J = 8.0, 2.7 Hz, 1H), 7.50 (s, 1H), 7.71 (d, J = 8.3 Hz, 1H), 7.96 (dd, J = 8.3, 2.0 Hz, 1H), 8.08-8.26 (m, 2H), 8.52 (d, J = 2.4 Hz, 1H), 8.87 (s, 1H)
152		185-188	1H-NMR (**DMSO**) δ 2.11 (s, 3H), 3.64 (s, 3H), 3.76 (s, 3H), 5.33 (s, 2H), 6.68 (dd, J = 8.3, 2.4 Hz, 1H), 6.75 (d, J = 2.4 Hz, 1H), 7.28 (d, J = 8.3 Hz, 1H), 7.62 (d, J = 8.3 Hz, 1H), 7.96 (d, J = 8.3 Hz, 1H), 8.12 (dd, J = 8.3, 2.4 Hz, 1H), 8.19 (d, J = 8.3, 2.0 Hz, 1H), 8.69 (d, J = 2.4 Hz, 1H), 8.89 (d, J = 2.0 Hz, 1H)
153		148-150	1H-NMR (**DMSO**) δ 2.01 (s, 3H), 3.42 (s, 3H), 3.79 (s, 3H), 5.36 (s, 2H), 6.77 (dd, J = 8.5, 2.4 Hz, 1H), 6.85 (d, J = 2.4 Hz, 1H), 7.19 (d, J = 8.3 Hz, 1H), 7.61 (d, J = 8.3 Hz, 1H), 7.98 (d, J = 8.5 Hz, 1H), 8.17 (dd, J = 8.3, 2.4 Hz, 1H), 8.21 (dd, J = 8.3, 1.6 Hz, 1H), 8.74 (d, J = 2.4 Hz, 1H), 8.91 (d, J = 1.6 Hz, 1H)

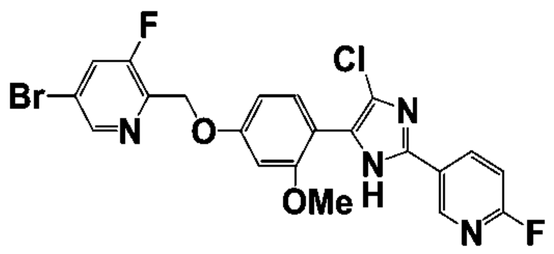
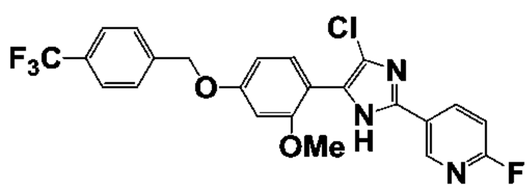
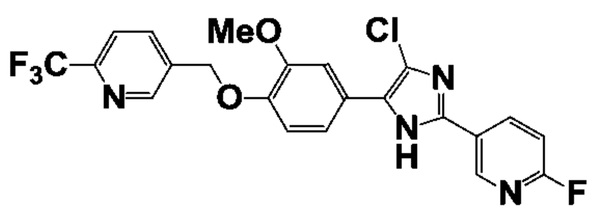
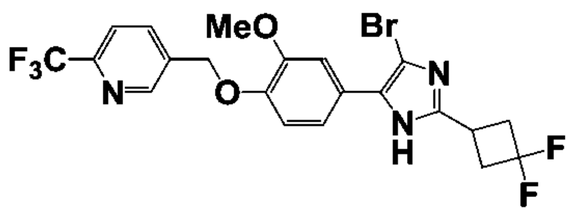
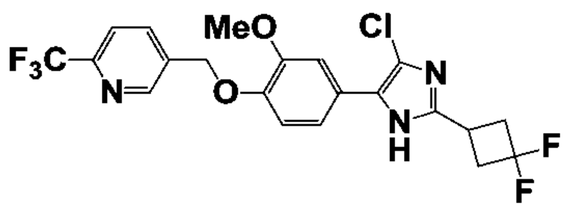
154		110-112	1H-NMR (**CDCL3**) δ 0.07-0.22 (m, 2H), 0.47-0.63 (m, 2H), 0.98-1.10 (m, 1H), 2.26 (s, 3H), 3.82 (s, 3H), 3.88 (d, J = 6.3 Hz, 2H), 5.19 (s, 2H), 6.52-6.70 (m, 2H), 7.33-7.52 (m, 2H), 7.73 (d, J = 7.8 Hz, 1H), 7.89-8.08 (m, 2H), 8.67 (d, J = 2.4 Hz, 1H), 8.74-8.89 (m, 1H)
155		164-166	1H-NMR (**CDCL3**) δ -0.42--0.14 (m, 2H), 0.13-0.39 (m, 2H), 0.58-0.82 (m, 1H), 2.16 (s, 3H), 3.52-3.68 (m, 1H), 3.76-3.88 (m, 4H), 5.23 (s, 2H), 6.58-6.78 (m, 2H), 7.15-7.24 (m, 1H), 7.43 (d, J = 8.3 Hz, 1H), 7.76 (d, J = 7.8 Hz, 1H), 7.91-8.17 (m, 2H), 8.69 (d, J = 2.4 Hz, 1H), 8.78-8.98 (m, 1H)
156		油狀	1H-NMR (**CDCL3**) δ 0.10-0.22 (m, 2H), 0.53-0.64 (m, 2H), 0.99-1.13 (m, 1H), 2.25 (s, 3H), 3.83 (s, 3H), 3.88 (d, J = 6.3 Hz, 2H), 5.31 (s, 2H), 6.61 (dd, J = 8.5, 2.4 Hz, 1H), 6.66 (d, J = 2.4 Hz, 1H), 7.35-7.45 (m, 2H), 7.71 (d, J = 8.5 Hz, 1H), 7.88-8.08 (m, 2H), 8.67 (d, J = 2.4 Hz, 1H), 8.84-8.91 (m, 1H)
157		145-148	1H-NMR (**DMSO**) δ -0.45--0.25 (m, 2H), 0.06-0.24 (m, 2H), 0.52-0.71 (m, 1H), 1.98 (s, 3H), 3.52-3.62 (m, 1H), 3.76-3.90 (m, 4H), 5.38 (s, 2H), 6.76 (dd, J = 8.3, 2.0 Hz, 1H), 6.87 (d, J = 2.0 Hz, 1H), 7.18 (d, J = 8.5 Hz, 1H), 7.62 (d, J = 8.3 Hz, 1H), 7.82 (d, J = 7.8 Hz, 1H), 8.14 (dd, J = 8.5, 2.4 Hz, 1H), 8.30 (dd, J = 7.8, 2.2 Hz, 1H), 8.70 (d, J = 2.4 Hz, 1H),

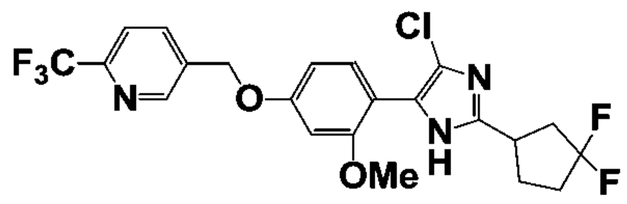
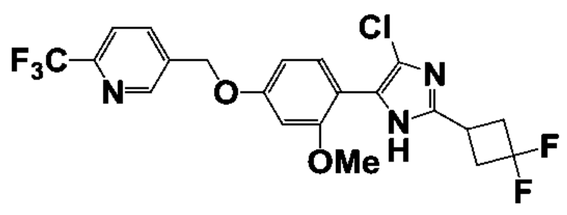
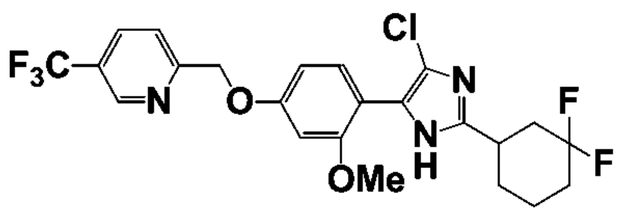
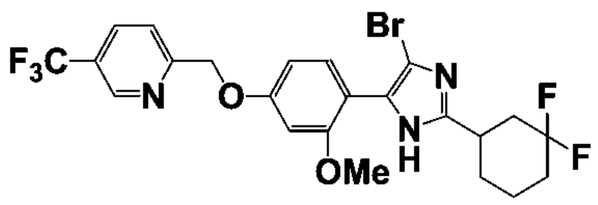
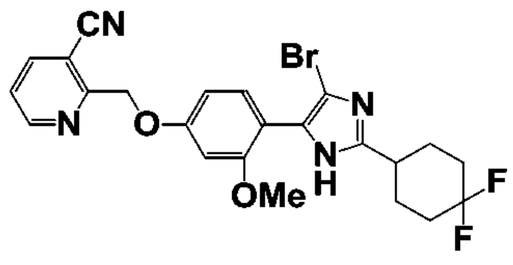
			8.96-9.08 (m, 1H)
158		166-169	1H-NMR (**CDCL3**) δ 2.23 (s, 3H), 3.64 (s, 3H), 3.83 (s, 3H), 5.31 (s, 2H), 6.60 (dd, J = 8.8, 2.4 Hz, 1H), 6.65 (d, J = 2.0 Hz, 1H), 7.02 (dd, J = 8.5, 2.7 Hz, 1H), 7.38 (d, J = 8.8 Hz, 1H), 7.71 (d, J = 8.3 Hz, 1H), 7.97 (dd, J = 8.3, 2.0 Hz, 1H), 8.12 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.47 (d, J = 2.4 Hz, 1H), 8.87 (s, 1H), 10.15 (s, 0H)
159		136-138	1H-NMR (**CDCL3**) δ 2.18 (s, 3H), 3.45 (s, 3H), 3.84 (s, 3H), 5.33 (s, 2H), 6.65 (dd, J = 8.5, 2.4 Hz, 1H), 6.72 (d, J = 2.4 Hz, 1H), 7.04 (dd, J = 8.8, 2.9 Hz, 1H), 7.16 (d, J = 8.5 Hz, 1H), 7.74 (d, J = 8.3 Hz, 1H), 8.01 (dd, J = 8.3, 2.0 Hz, 1H), 8.17 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.52 (d, J = 2.4 Hz, 1H), 8.82-8.97 (m, 1H)
160		176-178	1H-NMR (**DMSO**) δ 2.13 (s, 3H), 3.63 (s, 3H), 3.78 (s, 3H), 5.34 (s, 2H), 6.69 (dd, J = 8.3, 2.0 Hz, 1H), 6.77 (d, J = 2.0 Hz, 1H), 7.26-7.35 (m, 2H), 7.97 (d, J = 8.3 Hz, 1H), 8.20 (d, J = 8.3 Hz, 1H), 8.26 (ddd, J = 8.3, 8.3, 2.0 Hz, 1H), 8.52 (d, J = 2.0 Hz, 1H), 8.87-8.95 (m, 1H)
161		123-126	1H-NMR (**DMSO**) δ 2.01 (s, 3H), 3.40 (s, 3H), 3.81 (s, 3H), 5.36 (s, 2H), 6.77 (dd, J = 8.3, 2.4 Hz, 1H), 6.85 (d, J = 2.4 Hz, 1H), 7.19 (d, J = 8.3 Hz, 1H), 7.30 (dd, J = 8.3, 2.4 Hz, 1H), 7.98 (d, J = 8.3 Hz, 1H), 8.21 (d, J = 8.3 Hz, 1H), 8.30

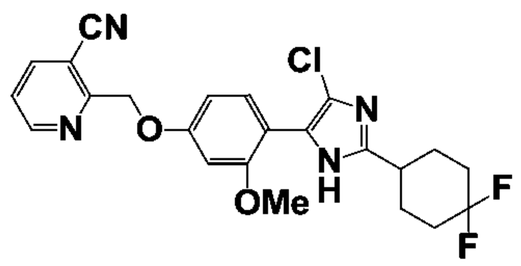
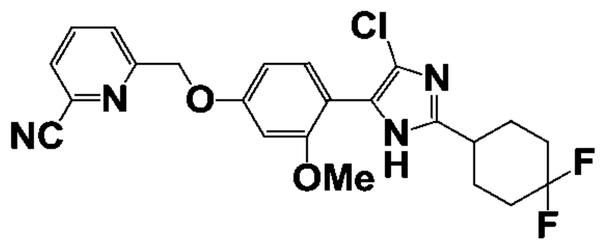
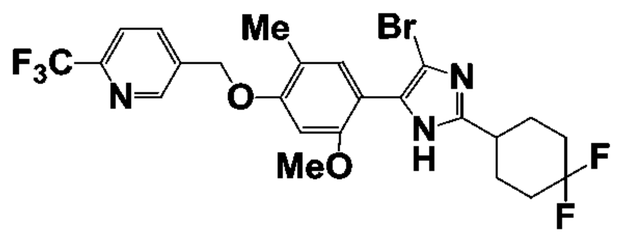
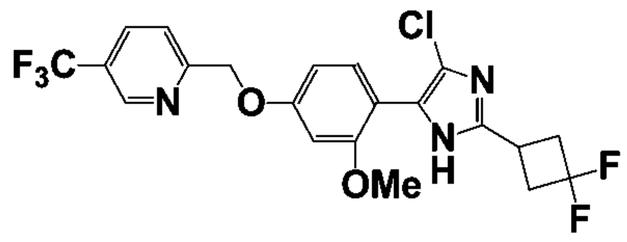
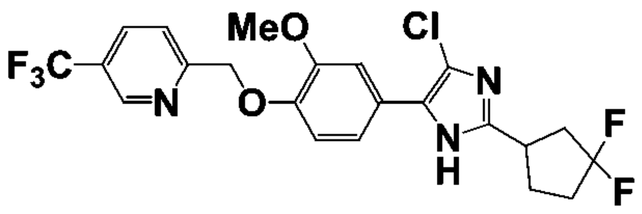
			(ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.56 (s, 1H), 8.91 (s, 1H)
162		170-176 (分解)	1H-NMR (**CDCL3**) δ 3.80 (s, 3H), 3.95 (s, 3H), 5.20 (s, 2H), 6.62 (d, J = 2.3 Hz, 1H), 6.66 (dd, J = 8.5, 2.3 Hz, 1H), 7.44 (d, J = 8.3 Hz, 1H), 7.73 (d, J = 8.5 Hz, 1H), 7.96-8.03 (m, 1H), 8.05 (dd, J = 8.3, 2.3 Hz, 1H), 8.16 (d, J = 8.5 Hz, 1H), 8.71 (d, J = 2.3 Hz, 1H), 8.78-8.86 (m, 1H)
163		163-165	1H-NMR (**CDCL3**) δ 3.79 (s, 3H), 3.95 (s, 3H), 5.20 (s, 2H), 6.62 (d, J = 2.4 Hz, 1H), 6.66 (dd, J = 8.3, 2.4 Hz, 1H), 7.05 (dd, J = 8.5, 3.2 Hz, 1H), 7.51 (s, 1H), 7.72 (d, J = 8.3 Hz, 1H), 7.99 (dd, J = 7.8, 1.5 Hz, 1H), 8.13-8.23 (m, 2H), 8.53 (d, J = 2.4 Hz, 1H), 8.82 (d, J = 1.5 Hz, 1H)
164		133-141	1H-NMR (**CDCL3**) δ 2.23 (s, 3H), 3.65 (s, 3H), 3.83 (s, 3H), 5.31 (s, 2H), 6.60 (dd, J = 8.3, 2.4 Hz, 1H), 6.65 (d, J = 2.4 Hz, 1H), 7.35-7.44 (m, 2H), 7.70 (d, J = 8.3 Hz, 1H), 7.93-8.04 (m, 2H), 8.65 (d, J = 2.4 Hz, 1H), 8.87 (s, 1H)
165		152-154	1H-NMR (**CDCL3**) δ 2.16 (s, 3H), 3.45 (s, 3H), 3.81 (s, 3H), 5.31 (s, 2H), 6.63 (dd, J = 8.3, 2.4 Hz, 1H), 6.70 (d, J = 2.4 Hz, 1H), 7.14 (d, J = 8.3 Hz, 1H), 7.39 (d, J = 8.3 Hz, 1H), 7.72 (d, J = 8.3 Hz, 1H), 7.95-8.06 (m, 2H), 8.68 (d, J = 2.4 Hz, 1H), 8.87 (d, J = 1.0 Hz, 1H)
166		172-174	1H-NMR (**DMSO**) δ 3.34 (s, 3H), 3.94 (s, 3H), 5.36 (s, 2H), 5.40 (s, 2H), 6.72 (dd, J = 8.3, 2.4 Hz, 1H), 6.82

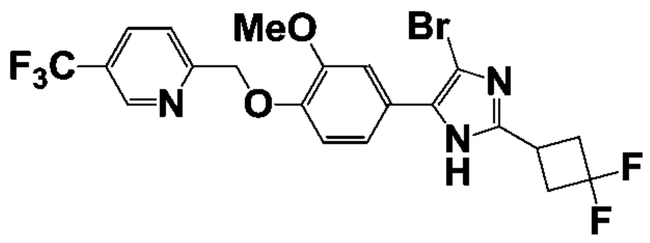
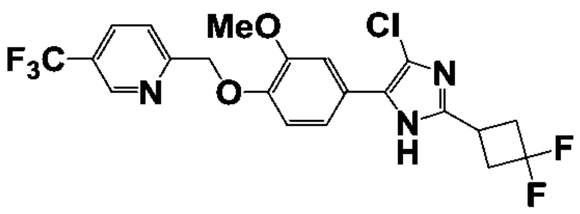
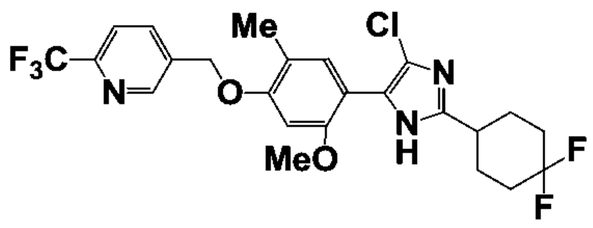
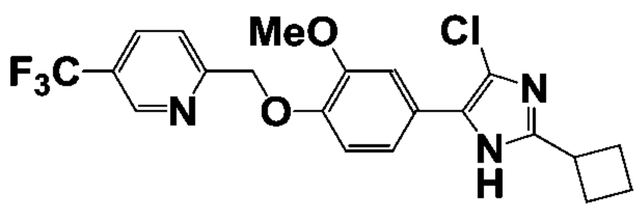
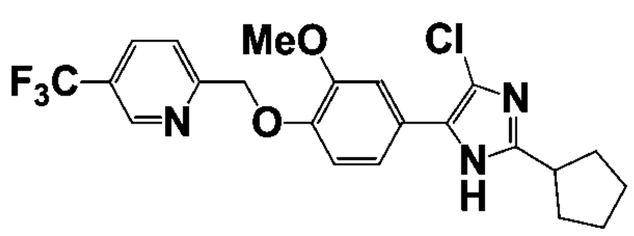
			(d, J = 2.4 Hz, 1H), 7.36 (dd, J = 8.3, 2.9 Hz, 1H), 7.80 (d, J = 8.3 Hz, 1H), 7.84 (s, 1H), 8.06 (d, J = 8.3 Hz, 1H), 8.28 (dd, J = 8.3, 2.4 Hz, 1H), 8.38 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.65 (d, J = 2.4 Hz, 1H), 9.01 (d, J = 2.4 Hz, 1H)
167		138-140	1H-NMR (**CDCL3**) δ 3.45 (s, 3H), 3.95 (s, 3H), 5.24 (s, 2H), 5.31 (s, 2H), 6.63-6.71 (m, 2H), 7.42 (d, J = 8.2 Hz, 1H), 7.65 (s, 1H), 7.70 (d, J = 8.2 Hz, 1H), 7.97 (dd, J = 8.2, 2.0 Hz, 1H), 8.14-8.25 (m, 2H), 8.84-8.95 (m, 2H)
168		186-190	1H-NMR (**DMSO**) δ 3.82 (s, 3H), 3.91 (s, 3H), 5.33 (s, 2H), 6.69 (dd, J = 8.7, 2.3 Hz, 1H), 6.78 (d, J = 2.3 Hz, 1H), 7.59-7.68 (m, 2H), 7.78 (d, J = 8.3 Hz, 1H), 8.01 (d, J = 8.7 Hz, 1H), 8.22 (dd, J = 8.3, 2.4 Hz, 1H), 8.27 (dd, J = 8.2, 2.1 Hz, 1H), 8.79 (d, J = 2.4 Hz, 1H), 8.92-9.06 (m, 1H)
169		158-160 (分解)	1H-NMR (**CDCL3**) δ 3.72 (s, 3H), 3.86 (s, 3H), 5.31 (s, 2H), 6.61 (dd, J = 8.3, 2.4 Hz, 1H), 6.67 (d, J = 2.4 Hz, 1H), 7.05 (dd, J = 8.8, 3.4 Hz, 1H), 7.41 (d, J = 8.3 Hz, 1H), 7.70 (d, J = 8.3 Hz, 1H), 7.97 (dd, J = 8.3, 2.0 Hz, 1H), 8.13 (ddd, J = 8.8, 6.7, 1.8 Hz, 1H), 8.43-8.58 (m, 1H), 8.87 (s, 1H)
170		158-160	1H-NMR (**DMSO**) δ 1.41-1.64 (m, 2H), 1.69-2.18 (m, 5H), 2.24-2.40 (m, 1H), 2.82-3.04 (m, 1H), 3.85 (s, 3H), 5.31 (s, 2H), 7.11 (d, J = 8.8 Hz, 1H), 7.22 (d, J = 8.8 Hz, 1H), 7.31 (s, 1H), 7.75 (d, J = 8.3 Hz, 1H), 8.28 (dd, J =

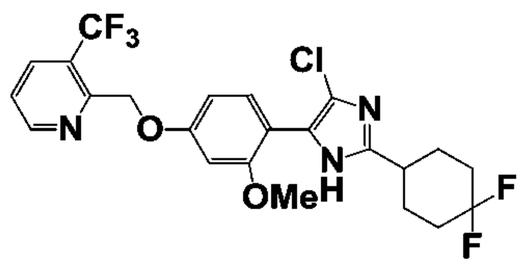
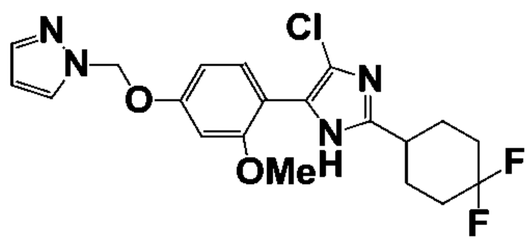
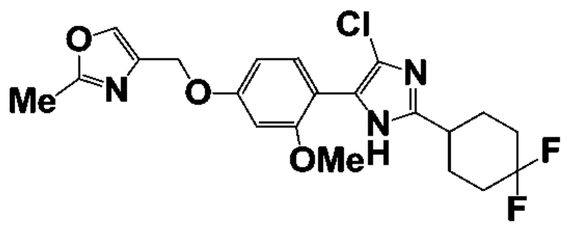
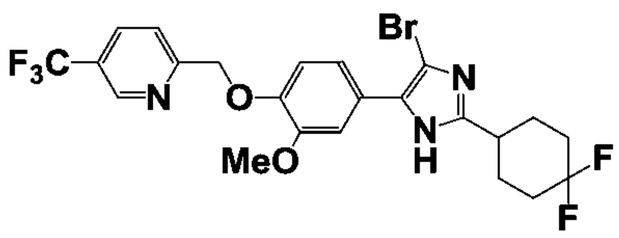
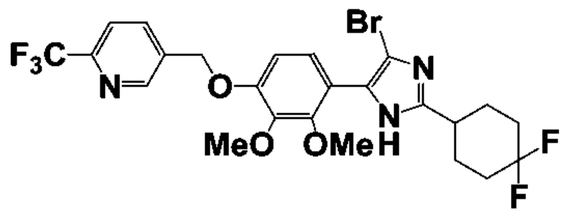
			8.3, 2.0 Hz, 1H), 8.98 (d, J = 2.0 Hz, 1H), 12.36 (s, 1H)
171		158-160	1H-NMR (**DMSO**) δ 1.41-1.64 (m, 2H), 1.65-2.20 (m, 5H), 2.21-2.43 (m, 1H), 2.82-3.03 (m, 1H), 3.85 (s, 3H), 5.31 (s, 2H), 7.12 (d, J = 8.3 Hz, 1H), 7.22 (d, J = 8.3 Hz, 1H), 7.31 (s, 1H), 7.75 (d, J = 8.3 Hz, 1H), 8.28 (dd, J = 8.3, 2.0 Hz, 1H), 8.98 (d, J = 2.0 Hz, 1H), 12.37 (s, 1H)
172		189-191	1H-NMR (**CDCL3**) δ 3.97 (s, 3H), 5.33 (s, 2H), 6.65-6.77 (m, 2H), 7.03 (dd, J = 8.3, 2.9 Hz, 1H), 7.66 (d, J = 7.8 Hz, 1H), 7.78 (d, J = 7.8 Hz, 1H), 7.95 (dd, J = 7.8, 7.8 Hz, 1H), 8.03 (d, J = 8.8 Hz, 1H), 8.31 (ddd, J = 8.3, 8.3, 2.0 Hz, 1H), 8.58 (d, J = 2.0 Hz, 1H), 10.51 (s, 1H)
173		185-187	1H-NMR (**CDCL3**) δ 4.00 (s, 3H), 5.31 (s, 2H), 6.73 (dd, J = 8.7, 2.5 Hz, 1H), 6.75 (d, J = 2.5 Hz, 1H), 7.04 (dd, J = 8.3, 2.9 Hz, 1H), 7.50 (d, J = 5.0 Hz, 1H), 7.81 (s, 1H), 8.06 (d, J = 8.7 Hz, 1H), 8.32 (ddd, J = 8.3, 8.3, 2.5 Hz, 1H), 8.59 (d, J = 2.5 Hz, 1H), 8.81 (d, J = 5.0 Hz, 1H), 10.51 (s, 1H)
174		176-178	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.38 (s, 2H), 6.79 (dd, J = 8.3, 2.0 Hz, 1H), 6.90 (d, J = 2.0 Hz, 1H), 7.36 (d, J = 8.3 Hz, 1H), 7.62 (d, J = 8.3 Hz, 1H), 7.77 (d, J = 5.4 Hz, 1H), 7.92 (s, 1H), 8.30 (dd, J = 8.3, 2.4 Hz, 1H), 8.90 (d, J = 5.4 Hz, 1H), 8.93 (d, J = 2.4 Hz, 1H), 13.02 (s, 1H)

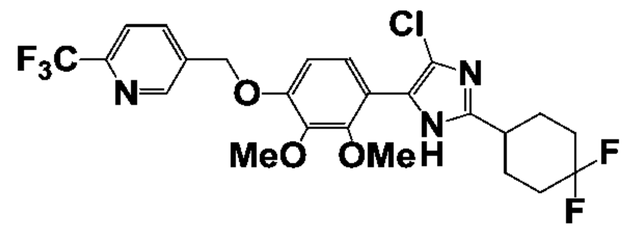
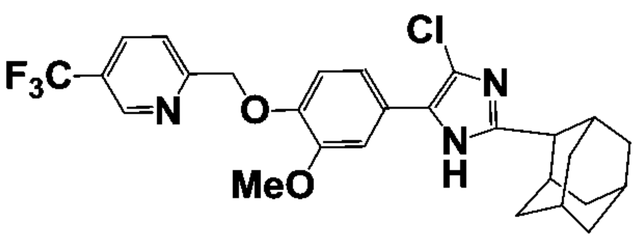
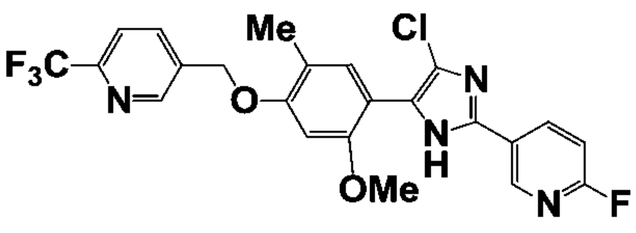
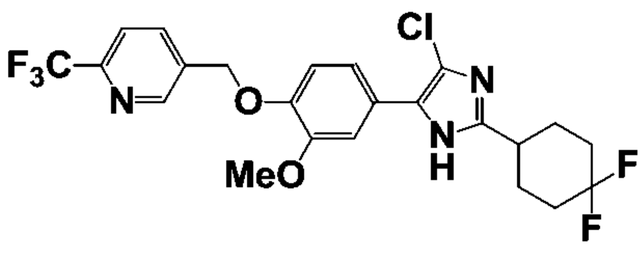
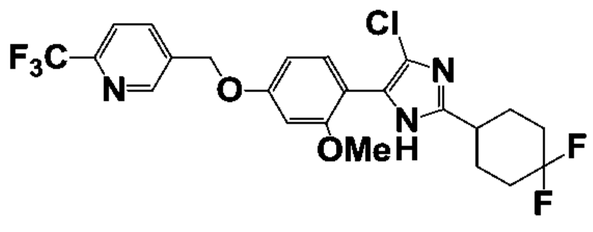
175		122-124	1H-NMR (**CDCL3**) δ 3.80-4.05 (3H), 5.27 (d, J = 2.0 Hz, 2H), 6.69-6.81 (m, 2H), 7.03 (dd, J = 8.8, 2.9 Hz, 1H), 7.68 (dd, J = 8.5, 1.8 Hz, 1H), 8.03 (d, J = 8.3 Hz, 1H), 8.31 (ddd, J = 8.5, 8.5, 1.7 Hz, 1H), 8.52-8.64 (m, 2H), 10.52 (s, 1H)
176		163-166	1H-NMR (**CDCL3**) δ 3.97 (s, 3H), 5.18 (s, 2H), 6.66-6.73 (m, 2H), 7.04 (dd, J = 8.3, 2.9 Hz, 1H), 7.54-7.73 (m, 4H), 8.05 (d, J = 8.8 Hz, 1H), 8.33 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.59 (d, J = 2.4 Hz, 1H), 10.50 (s, 1H)
177		202-204	1H-NMR (**CDCL3**) δ 3.91 (s, 3H), 5.24 (s, 2H), 6.91 (d, J = 8.3 Hz, 1H), 7.01 (dd, J = 8.0, 2.9 Hz, 1H), 7.12 (d, J = 8.3 Hz, 1H), 7.29-7.40 (m, 1H), 7.71 (d, J = 7.8 Hz, 1H), 7.98 (dd, J = 7.8, 1.5 Hz, 1H), 8.31 (ddd, J = 8.0, 8.0, 2.4 Hz, 1H), 8.59 (d, J = 2.4 Hz, 1H), 8.68-8.83 (m, 1H), 10.27 (s, 1H)
178		168-170	1H-NMR (**CDCL3**) δ 2.87-3.05 (m, 4H), 3.28-3.43 (m, 1H), 3.91 (s, 3H), 5.25 (s, 2H), 6.93 (d, J = 8.8 Hz, 1H), 7.06 (d, J = 7.8 Hz, 1H), 7.18-7.37 (m, 1H), 7.72 (d, J = 7.8 Hz, 1H), 8.00 (dd, J = 8.8, 1.5 Hz, 1H), 8.78 (d, J = 1.5 Hz, 1H), 9.47 (s, 1H)
179		170-174	1H-NMR (**CDCL3**) δ 2.88-3.05 (m, 4H), 3.28-3.41 (m, 1H), 3.93 (s, 3H), 5.25 (s, 2H), 6.93 (d, J = 8.5 Hz, 1H), 7.04 (dd, J = 8.2, 2.0 Hz, 1H), 7.22-7.28 (m, 1H), 7.73 (d, J = 8.2 Hz, 1H), 8.00 (dd, J = 8.5, 1.8 Hz, 1H), 8.78 (d, J = 1.8 Hz, 1H), 9.35 (s, 1H)

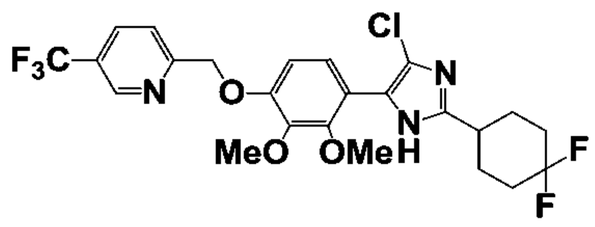
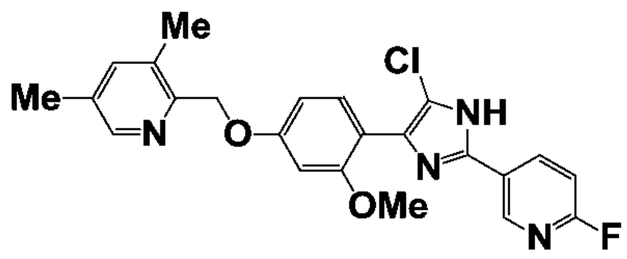
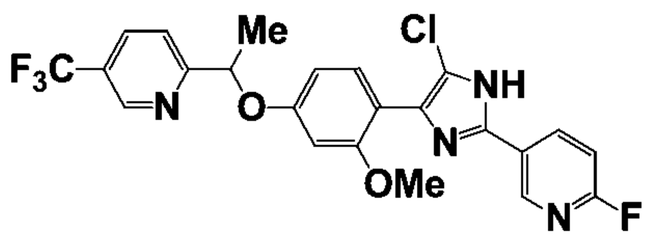
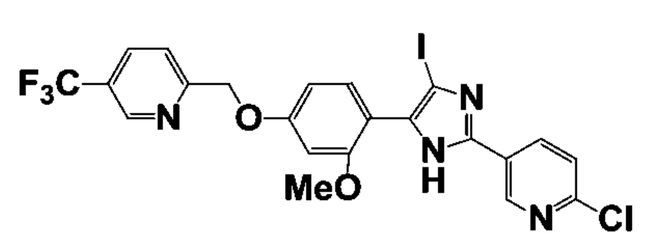
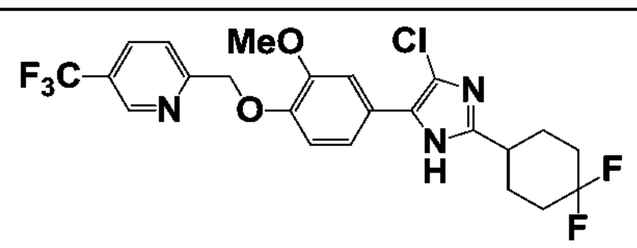
180		172-174	1H-NMR (**CDCL3**) δ 2.05-2.63 (m, 6H), 3.39-3.50 (m, 1H), 3.93 (s, 3H), 5.20 (s, 2H), 6.57-6.75 (m, 2H), 7.74 (d, J = 8.3 Hz, 1H), 7.99 (dd, J = 8.0, 3.2 Hz, 2H), 8.74-8.89 (m, 1H), 9.94 (s, 1H)
181		199-201	1H-NMR (**CDCL3**) δ 2.86-3.08 (m, 4H), 3.33-3.46 (m, 1H), 3.92 (s, 3H), 5.21 (s, 2H), 6.64 (d, J = 2.5 Hz, 1H), 6.67 (dd, J = 8.6, 2.5 Hz, 1H), 7.74 (d, J = 8.6 Hz, 1H), 7.94-8.04 (m, 2H), 8.81 (d, J = 1.5 Hz, 1H), 10.01 (s, 1H)
182		162-164	1H-NMR (**DMSO**) δ 1.42-1.61 (m, 2H), 1.68-2.17 (m, 5H), 2.25-2.40 (m, 1H), 2.85-3.02 (m, 1H), 3.86 (s, 3H), 5.31 (s, 2H), 7.12 (d, J = 8.3 Hz, 1H), 7.22 (dd, J = 8.3, 1.7 Hz, 1H), 7.30 (d, J = 1.7 Hz, 1H), 7.75 (d, J = 8.3 Hz, 1H), 8.28 (dd, J = 8.3, 2.4 Hz, 1H), 8.98 (d, J = 2.4 Hz, 1H), 12.33 (s, 1H)
183		170-171	1H-NMR (**CDCL3**) δ 1.53-2.22 (m, 7H), 2.30-2.48 (m, 1H), 2.91-3.10 (m, 1H), 3.95 (s, 3H), 5.35 (s, 2H), 6.90 (d, J = 8.3 Hz, 1H), 7.02 (d, J = 8.3 Hz, 1H), 7.28 (s, 1H), 7.73 (d, J = 8.5 Hz, 1H), 7.96 (dd, J = 8.5, 1.9 Hz, 1H), 8.86 (d, J = 1.9 Hz, 1H), 9.21 (s, 1H)
184		160-161	1H-NMR (**DMSO**) δ 1.68-2.16 (m, 8H), 2.77-2.91 (m, 1H), 3.76 (s, 3H), 5.38 (s, 2H), 6.71 (dd, J = 8.5, 2.2 Hz, 1H), 6.77 (d, J = 2.2 Hz, 1H), 7.28 (d, J = 8.3 Hz, 1H), 7.64 (dd, J = 7.8, 4.9 Hz, 1H), 8.41 (dd, J = 7.8, 1.5 Hz, 1H), 8.87 (dd, J = 4.9, 1.5 Hz, 1H),

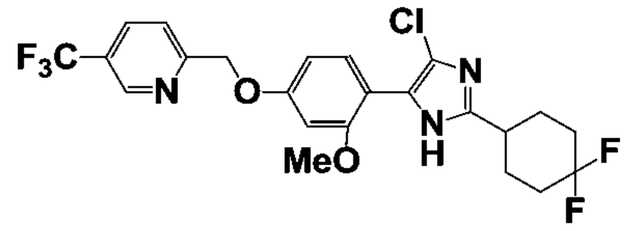
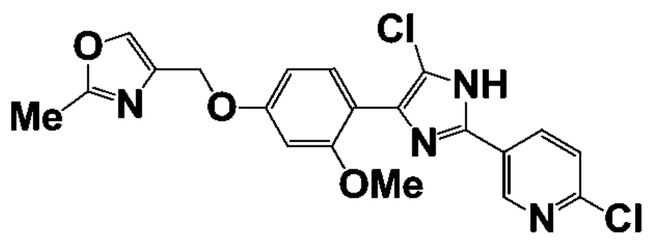
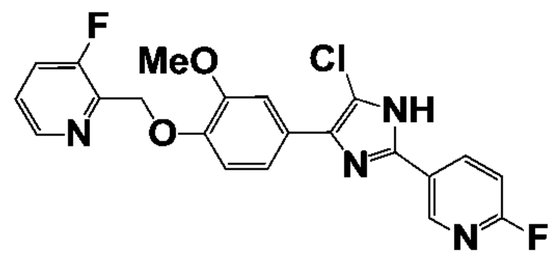
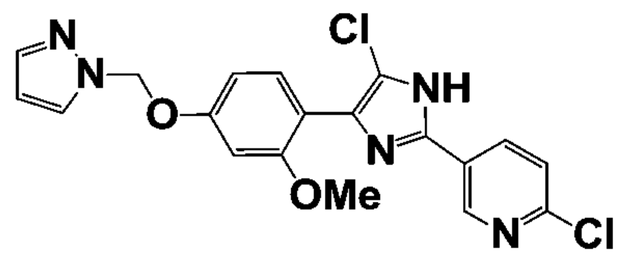
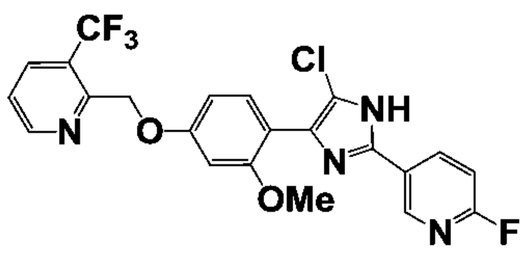
			12.06 (s, 1H)
185		161-162	1H-NMR (**DMSO**) δ 1.64-2.19 (m, 8H), 2.74-2.96 (m, 1H), 3.77 (s, 3H), 5.38 (s, 2H), 6.72 (dd, J = 8.3, 2.0 Hz, 1H), 6.78 (d, J = 2.0 Hz, 1H), 7.30 (d, J = 8.3 Hz, 1H), 7.64 (dd, J = 7.8, 4.9 Hz, 1H), 8.41 (dd, J = 7.8, 1.5 Hz, 1H), 8.86 (dd, J = 4.9, 1.5 Hz, 1H), 11.99 (s, 1H)
186			1H-NMR (**DMSO**) δ 1.68-2.15 (m, 8H), 2.75-2.92 (m, 1H), 3.78 (s, 3H), 5.30 (s, 2H), 6.68 (dd, J = 8.5, 2.2 Hz, 1H), 6.80 (d, J = 2.2 Hz, 1H), 7.30 (d, J = 8.5 Hz, 1H), 7.89 (d, J = 7.8 Hz, 1H), 8.02 (d, J = 7.8 Hz, 1H), 8.13 (dd, J = 7.8, 7.8 Hz, 1H), 11.99 (s, 1H)
187		195-196	1H-NMR (**DMSO**) δ 1.68-2.13 (m, 8H), 2.15 (s, 3H), 2.72-2.93 (m, 1H), 3.77 (s, 3H), 5.40 (s, 2H), 6.83 (s, 1H), 7.15 (s, 1H), 7.97 (d, J = 8.3 Hz, 1H), 8.20 (dd, J = 8.3, 1.2 Hz, 1H), 8.90 (d, J = 1.2 Hz, 1H), 12.03 (s, 1H)
188		191-193	1H-NMR (**CDCL3**) δ 2.86-3.07 (m, 4H), 3.31-3.48 (m, 1H), 3.93 (s, 3H), 5.32 (s, 2H), 6.57-6.76 (m, 2H), 7.69 (d, J = 8.3 Hz, 1H), 7.89-8.09 (m, 2H), 8.80-8.96 (m, 1H), 9.99 (s, 1H)
189		159-161	1H-NMR (**DMSO**) δ 1.91-2.59 (m, 6H), 3.34-3.47 (m, 1H), 3.86 (s, 3H), 5.31 (s, 2H), 7.12 (d, J = 8.3 Hz, 1H), 7.21 (dd, J = 8.3, 2.0 Hz, 1H), 7.30 (d, J = 2.0 Hz, 1H), 7.75 (d, J = 8.3 Hz, 1H), 8.28 (dd, J = 8.3, 2.4 Hz, 1H), 8.97 (s,

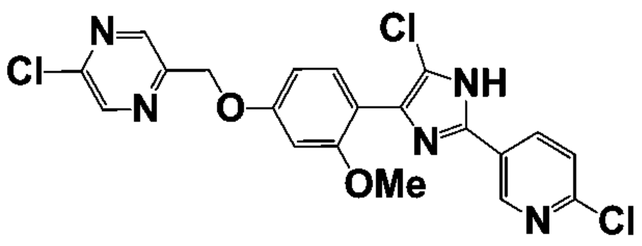
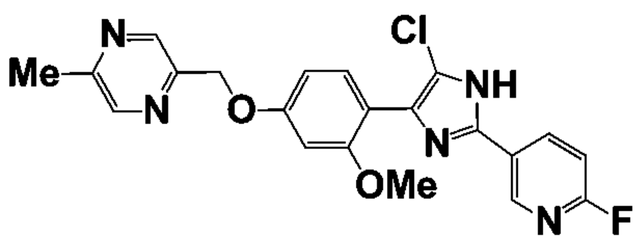
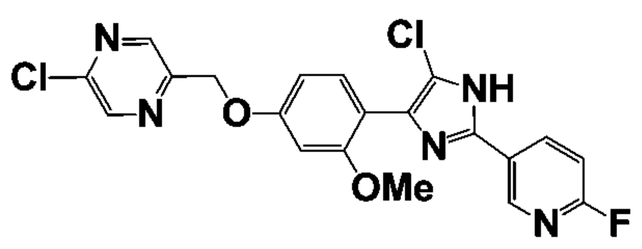
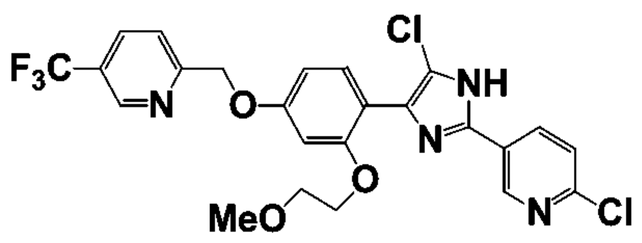
			1H), 12.39 (s, 1H)
190		151-157	1H-NMR (**CDCL3**) δ 2.88-3.05 (m, 4H), 3.31-3.43 (m, 1H), 3.95 (s, 3H), 5.35 (s, 2H), 6.89 (d, J = 8.3 Hz, 1H), 6.95-7.11 (m, 1H), 7.22-7.39 (m, 1H), 7.73 (d, J = 8.3 Hz, 1H), 7.96 (dd, J = 8.3, 2.0 Hz, 1H), 8.77-8.95 (m, 1H), 9.41 (s, 1H)
191		201-203 (分解)	1H-NMR (**CDCL3**) δ 2.84-3.07 (m, 4H), 3.29-3.43 (m, 1H), 3.95 (s, 3H), 5.35 (s, 2H), 6.90 (d, J = 8.3 Hz, 1H), 7.01 (d, J = 8.3 Hz, 1H), 7.22-7.32 (m, 1H), 7.72 (d, J = 8.3 Hz, 1H), 7.96 (dd, J = 8.3, 2.0 Hz, 1H), 8.81-8.90 (m, 1H), 9.32 (s, 1H)
192		175-178	1H-NMR (**DMSO**) δ 1.68-2.13 (m, 8H), 2.15 (s, 3H), 2.72-2.93 (m, 1H), 3.78 (s, 3H), 5.40 (s, 2H), 6.83 (s, 1H), 7.16 (s, 1H), 7.97 (d, J = 8.3 Hz, 1H), 8.20 (d, J = 8.3 Hz, 1H), 8.90 (s, 1H), 11.96 (s, 1H)
193		158-170	1H-NMR (**CDCL3**) δ 0.78-0.95 (m, 1H), 1.82-2.61 (m, 5H), 3.45-3.60 (m, 1H), 3.94 (s, 3H), 5.33 (s, 2H), 6.88 (d, J = 8.3 Hz, 1H), 7.03 (d, J = 8.3 Hz, 1H), 7.29 (s, 1H), 7.72 (d, J = 8.3 Hz, 1H), 7.96 (d, J = 8.3 Hz, 1H), 8.85 (s, 1H), 9.35 (s, 1H)
194		182-184 (分解)	1H-NMR (**DMSO**) δ 1.52-2.04 (m, 8H), 3.00-3.13 (m, 1H), 3.85 (s, 3H), 5.31 (s, 2H), 7.11 (d, J = 8.3 Hz, 1H), 7.21 (dd, J = 8.3, 1.0 Hz, 1H), 7.30 (d, J = 1.0 Hz, 1H), 7.75 (d, J = 8.3 Hz, 1H), 8.28 (dd, J = 8.3, 1.5 Hz, 1H), 8.97 (d, J

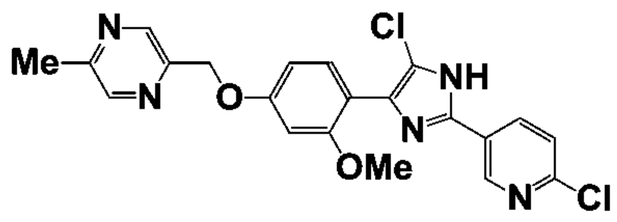
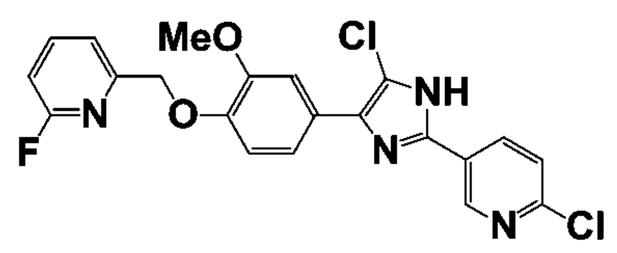
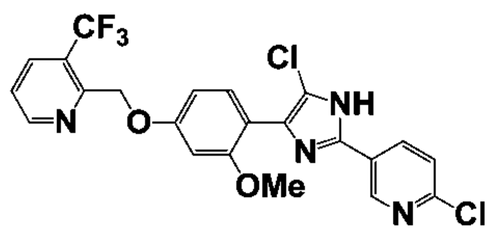
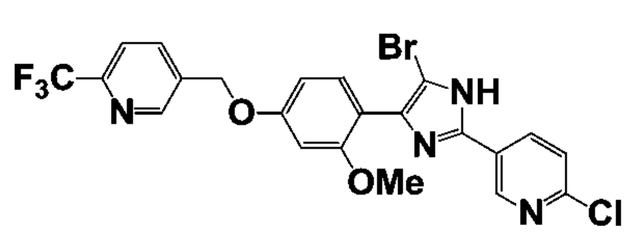
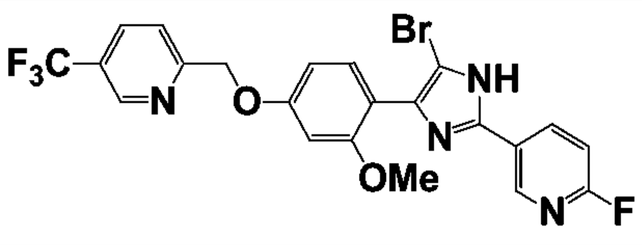
			= 1.5 Hz, 1H), 12.19 (s, 1H)
195		162-164	1H-NMR (**DMSO**) δ 1.69-2.17 (m, 8H), 2.72-2.93 (m, 1H), 3.75 (s, 3H), 5.33 (s, 2H), 6.68 (dd, J = 8.3, 2.4 Hz, 1H), 6.76 (d, J = 2.4 Hz, 1H), 7.28 (d, J = 8.3 Hz, 1H), 7.67 (dd, J = 8.3, 4.9 Hz, 1H), 8.28 (d, J = 8.3 Hz, 1H), 8.89 (d, J = 4.9 Hz, 1H), 11.98 (s, 1H)
196		182-184	1H-NMR (**DMSO**) δ 1.67-2.16 (m, 8H), 2.77-2.90 (m, 1H), 3.76 (s, 3H), 6.13 (s, 2H), 6.35 (dd, J = 2.4, 2.4 Hz, 1H), 6.79 (dd, J = 8.3, 2.4 Hz, 1H), 6.83 (d, J = 2.4 Hz, 1H), 7.29 (d, J = 8.3 Hz, 1H), 7.58 (d, J = 2.4 Hz, 1H), 8.01 (d, J = 2.4 Hz, 1H), 12.00 (s, 1H)
197		130-131	1H-NMR (**DMSO**) δ 1.69-2.15 (m, 8H), 2.40 (s, 3H), 2.76-2.89 (m, 1H), 3.77 (s, 3H), 4.97 (s, 2H), 6.68 (dd, J = 8.3, 2.4 Hz, 1H), 6.73 (d, J = 2.4 Hz, 1H), 7.28 (d, J = 8.3 Hz, 1H), 8.06 (s, 1H), 11.98 (s, 1H)
198		158-165	1H-NMR (**CDCL3**) δ 1.72-2.32 (m, 8H), 2.75-2.93 (m, 1H), 3.95 (s, 3H), 5.35 (s, 2H), 6.90 (d, J = 8.3 Hz, 1H), 7.01 (dd, J = 8.3, 2.0 Hz, 1H), 7.29 (d, J = 2.0 Hz, 1H), 7.73 (d, J = 8.3 Hz, 1H), 7.97 (d, J = 8.3 Hz, 1H), 8.78-8.95 (m, 1H), 9.12 (s, 1H)
199		162-165	1H-NMR (**CDCL3**) δ 1.75-2.01 (m, 4H), 2.08-2.31 (m, 4H), 2.81-2.94 (m, 1H), 3.83 (s, 3H), 3.98 (s, 3H), 5.34 (s, 2H), 6.80 (d, J = 9.1 Hz, 1H), 7.64-7.82 (m, 2H), 7.99 (dd, J = 8.2, 2.0

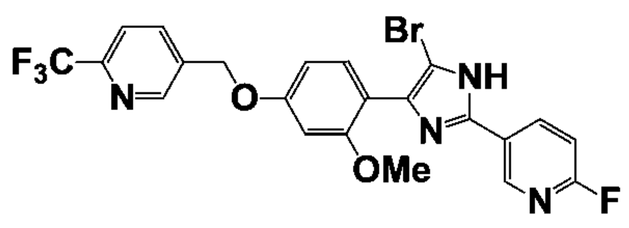
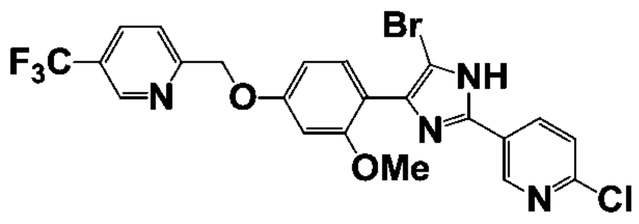
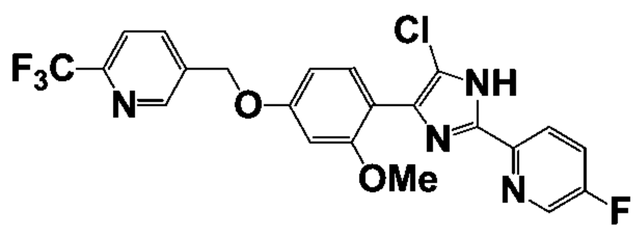
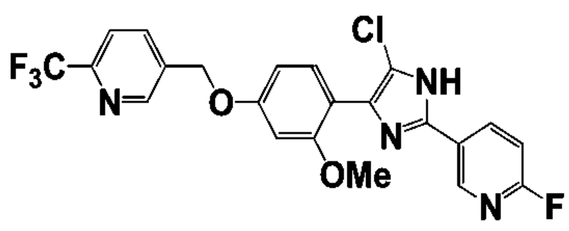
			Hz, 1H), 8.81-8.95 (m, 1H), 9.91 (s, 1H)
200		148-150	1H-NMR (**DMSO**) δ 1.69-2.15 (m, 8H), 2.75-2.95 (m, 1H), 3.63 (s, 3H), 3.82 (s, 3H), 5.35 (s, 2H), 6.99 (d, J = 8.8 Hz, 1H), 7.11 (d, J = 8.8 Hz, 1H), 7.98 (d, J = 8.3 Hz, 1H), 8.19 (d, J = 8.3 Hz, 1H), 8.89 (s, 1H), 12.11 (s, 1H)
201		238-240 (分解)	1H-NMR (**DMSO**) δ 1.66-1.80 (m, 6H), 1.89-1.99 (m, 6H), 1.99-2.07 (m, 3H), 3.86 (s, 3H), 5.32 (s, 2H), 7.11 (d, J = 8.3 Hz, 1H), 7.19 (dd, J = 8.3, 2.0 Hz, 1H), 7.29 (d, J = 2.0 Hz, 1H), 7.75 (d, J = 8.3 Hz, 1H), 8.28 (dd, J = 8.3, 2.0 Hz, 1H), 8.98 (d, J = 2.0 Hz, 1H), 11.86 (s, 1H)
202		213-215 (分解)	1H-NMR (**DMSO**) δ 2.19 (s, 3H), 3.82 (s, 3H), 5.43 (s, 2H), 6.90 (s, 1H), 7.22 (s, 1H), 7.29 (dd, J = 8.3, 2.7 Hz, 1H), 7.98 (d, J = 8.3 Hz, 1H), 8.21 (dd, J = 8.3, 1.5 Hz, 1H), 8.44 (ddd, J = 8.3, 8.3, 2.0 Hz, 1H), 8.76 (d, J = 2.0 Hz, 1H), 8.91 (d, J = 1.5 Hz, 1H), 12.91 (s, 1H)
203		164-167	1H-NMR (**CDCL3**) δ 1.72-2.32 (m, 8H), 2.74-2.88 (m, 1H), 3.91 (s, 3H), 5.25 (s, 2H), 6.92 (d, J = 8.3 Hz, 1H), 7.03 (d, J = 8.3 Hz, 1H), 7.21-7.33 (m, 1H), 7.72 (d, J = 8.3 Hz, 1H), 8.00 (dd, J = 8.3, 1.5 Hz, 1H), 8.79 (d, J = 1.5 Hz, 1H), 9.27 (s, 1H)
204		122-125	1H-NMR (**CDCL3**) δ 1.74-2.03 (m, 4H), 2.07-2.35 (m, 4H), 2.70-2.94 (m, 1H), 3.92 (s, 3H), 5.19 (s, 2H), 6.52-6.77 (m, 2H), 7.74 (d, J = 8.3

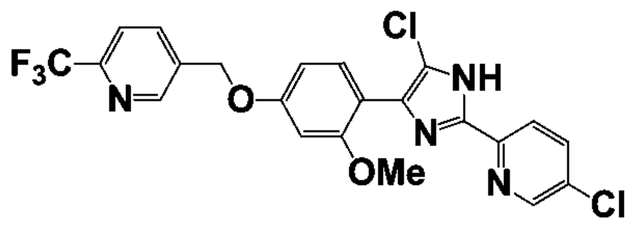
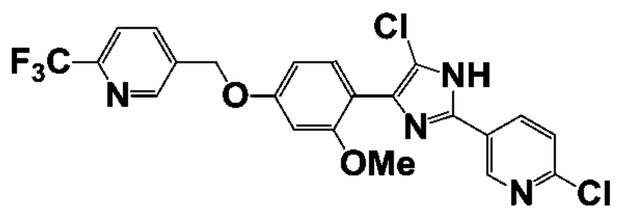
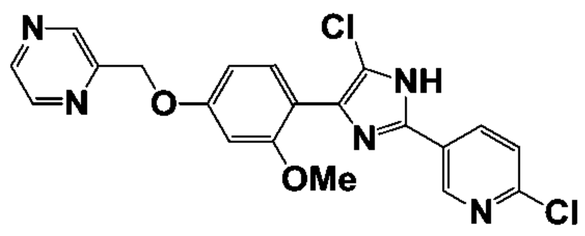
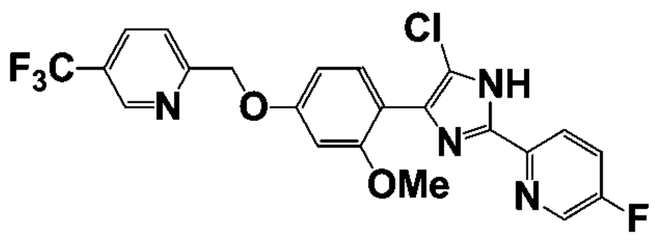
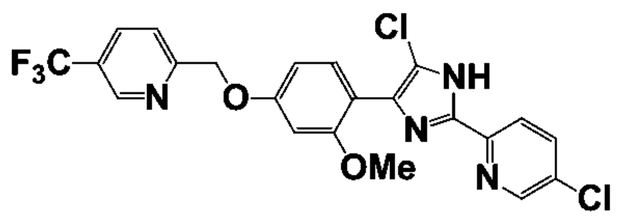
			Hz, 1H), 7.87-8.10 (m, 2H), 8.72-8.91 (m, 1H), 9.87 (s, 1H)
205		175-177	1H-NMR (**CDCL3**) δ 1.74-2.05 (m, 4H), 2.09-2.32 (m, 4H), 2.78-2.96 (m, 1H), 3.86 (s, 3H), 3.98 (s, 3H), 5.34 (s, 2H), 6.80 (d, J = 8.8 Hz, 1H), 7.69 (d, J = 8.8 Hz, 1H), 7.73 (d, J = 8.8 Hz, 1H), 7.99 (dd, J = 8.8, 2.0 Hz, 1H), 8.80-8.96 (m, 1H), 9.97 (s, 1H)
206		109-124	1H-NMR (**DMSO**) δ 2.20 (s, 3H), 2.29 (s, 3H), 3.72 (s, 3H), 5.16 (s, 2H), 6.69 (dd, J = 8.3, 2.4 Hz, 1H), 6.76 (d, J = 2.4 Hz, 1H), 7.20-7.29 (m, 2H), 7.41 (s, 1H), 8.17 (s, 1H), 8.37 (ddd, J = 8.0, 8.0, 2.4 Hz, 1H), 8.68 (d, J = 2.4 Hz, 1H), 12.84 (s, 1H)
207		166-169	1H-NMR (**CDCL3**) δ 1.73 (d, J = 6.8 Hz, 3H), 3.92 (s, 3H), 5.53 (q, J = 6.8 Hz, 1H), 6.52 (dd, J = 8.8, 2.4 Hz, 1H), 6.64 (d, J = 2.4 Hz, 1H), 7.01 (dd, J = 8.5, 2.4 Hz, 1H), 7.57 (d, J = 8.3 Hz, 1H), 7.87-7.98 (m, 2H), 8.29 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.56 (d, J = 2.4 Hz, 1H), 8.79-8.94 (m, 1H), 10.49 (s, 1H)
208		204-208 (分解)	1H-NMR (**CDCL3**) δ 3.87 (s, 3H), 5.30 (s, 2H), 6.59-6.71 (m, 2H), 7.37 (d, J = 8.2 Hz, 1H), 7.70 (d, J = 8.2 Hz, 1H), 7.86 (d, J = 8.5 Hz, 1H), 7.99 (dd, J = 8.2, 1.8 Hz, 1H), 8.16 (dd, J = 8.5, 2.3 Hz, 1H), 8.73 (d, J = 2.3 Hz, 1H), 8.88 (s, 1H), 10.57 (s, 1H)
209		175-177	1H-NMR (**DMSO**) δ 1.71-2.20 (m, 8H), 2.80-2.92 (m, 1H), 3.88 (s, 3H), 5.31 (s, 2H), 7.12 (d, J = 8.3

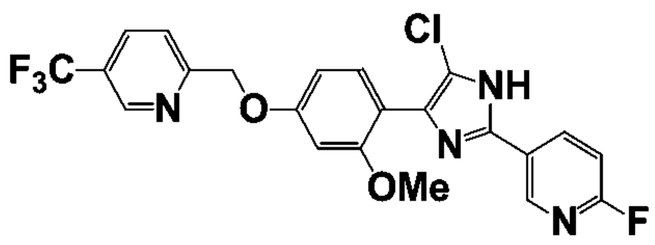
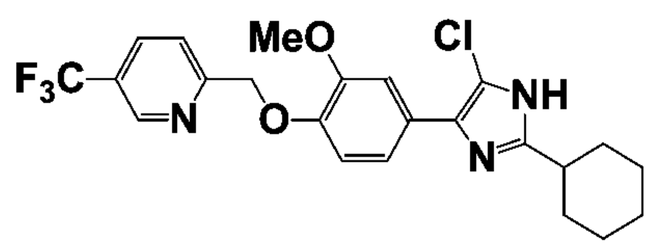
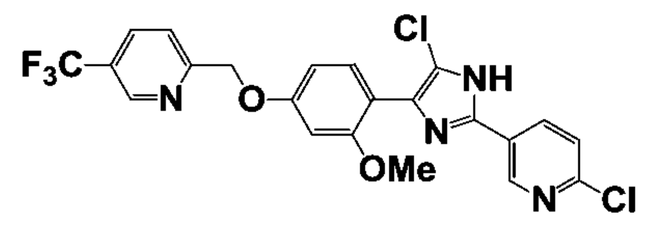
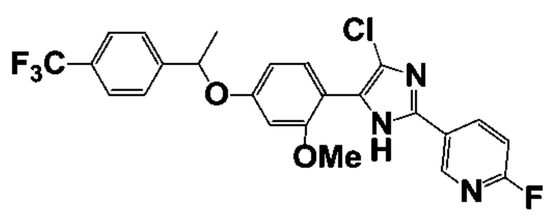
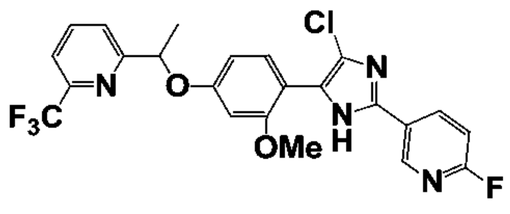
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210		147-149	1H-NMR (**CDCL3**) δ 1.76-2.27 (m, 8H), 2.77-2.89 (m, 1H), 3.92 (s, 3H), 5.30 (s, 2H), 6.62-6.71 (m, 2H), 7.69 (d, J = 8.3 Hz, 1H), 7.94 (d, J = 8.5 Hz, 1H), 7.98 (dd, J = 8.3, 2.0 Hz, 1H), 8.88 (d, J = 2.0 Hz, 1H), 9.87 (s, 1H)
211		136-155	1H-NMR (**CDCL3**) δ 2.48 (s, 3H), 3.88 (s, 3H), 4.97 (s, 2H), 6.58-6.69 (m, 2H), 7.37 (d, J = 8.3 Hz, 1H), 7.62 (s, 1H), 7.91 (d, J = 8.7 Hz, 1H), 8.13 (dd, J = 8.3, 2.5 Hz, 1H), 8.76 (d, J = 2.5 Hz, 1H), 10.89 (s, 1H)
212		161-163	1H-NMR (**CDCL3**) δ 3.44 (s, 3H), 5.19 (s, 2H), 6.83-6.95 (m, 2H), 7.07-7.15 (m, 2H), 7.22-7.31 (m, 1H), 7.40 (dd, J = 8.7, 8.7 Hz, 1H), 8.22-8.34 (m, 2H), 8.64 (d, J = 1.7 Hz, 1H), 12.10 (s, 1H)
213		166-169	1H-NMR (**DMSO**) δ 3.80 (s, 3H), 6.17 (s, 2H), 6.35 (dd, J = 2.4, 2.4 Hz, 1H), 6.85 (dd, J = 8.5, 2.4 Hz, 1H), 6.89 (d, J = 2.4 Hz, 1H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.35 (d, J = 8.5 Hz, 1H), 7.59 (d, J = 2.4 Hz, 1H), 8.02 (d, J = 2.4 Hz, 1H), 8.44 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.75 (d, J = 2.4 Hz, 1H), 12.94 (s, 1H)
214		143-146	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.37 (s, 2H), 6.73 (dd, J = 8.3, 2.2 Hz, 1H), 6.81 (d, J = 2.2 Hz, 1H), 7.30 (dd, J = 8.0, 2.4 Hz,

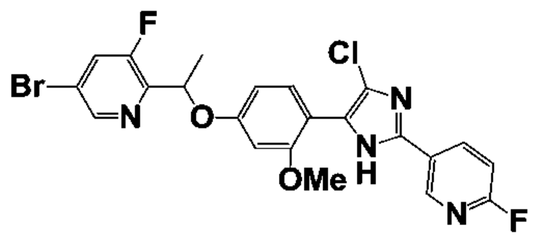
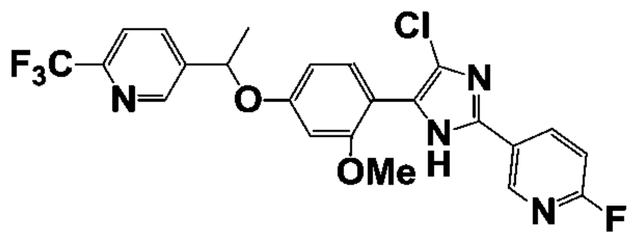
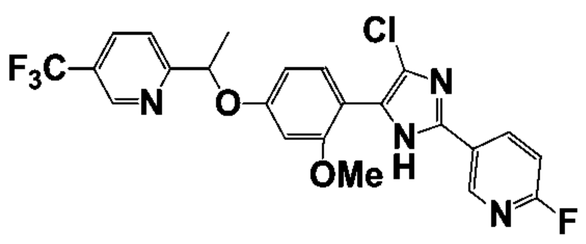
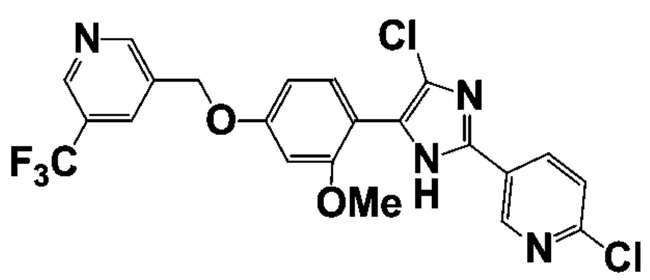
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215		232-234	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.36 (s, 2H), 6.78 (dd, J = 8.3, 2.4 Hz, 1H), 6.87 (d, J = 2.4 Hz, 1H), 7.36 (d, J = 8.3 Hz, 1H), 7.61 (d, J = 8.3 Hz, 1H), 8.31 (dd, J = 8.3, 2.4 Hz, 1H), 8.73 (s, 1H), 8.85 (d, J = 1.0 Hz, 1H), 8.93 (d, J = 2.4 Hz, 1H), 13.04 (s, 1H)
216		208-210 (分解)	1H-NMR (**CDCL3**) δ 2.60 (s, 3H), 3.95 (s, 3H), 5.24 (s, 2H), 6.62-6.81 (m, 2H), 7.02 (dd, J = 8.8, 2.9 Hz, 1H), 8.00 (d, J = 9.3 Hz, 1H), 8.31 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.47 (s, 1H), 8.58 (d, J = 2.4 Hz, 1H), 8.69 (s, 1H), 10.61 (s, 1H)
217		231-233 (分解)	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.36 (s, 2H), 6.78 (dd, J = 8.5, 2.4 Hz, 1H), 6.87 (d, J = 2.4 Hz, 1H), 7.30 (dd, J = 8.3, 2.7 Hz, 1H), 7.35 (d, J = 8.5 Hz, 1H), 8.44 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.72 (s, 1H), 8.75 (d, J = 2.4 Hz, 1H), 8.85 (s, 1H), 12.91 (s, 1H)
218		170-172	1H-NMR (**DMSO**) δ 3.21 (s, 3H), 3.68 (t, J = 4.6 Hz, 2H), 4.19 (t, J = 4.6 Hz, 2H), 5.40 (s, 2H), 6.78 (dd, J = 8.5, 2.4 Hz, 1H), 6.92 (d, J = 2.4 Hz, 1H), 7.42 (d, J = 8.3 Hz, 1H), 7.64 (d, J = 8.5 Hz, 1H), 7.79 (d, J = 7.8 Hz, 1H), 8.28-8.36 (m, 2H), 8.93 (d, J = 2.4 Hz, 1H), 9.01 (d, J = 1.6 Hz, 1H), 12.90 (s, 1H)

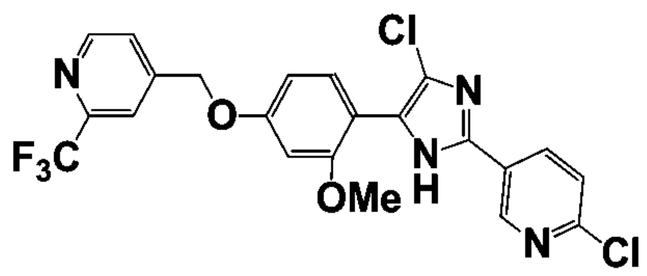
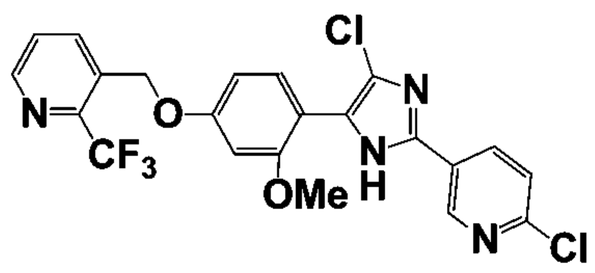
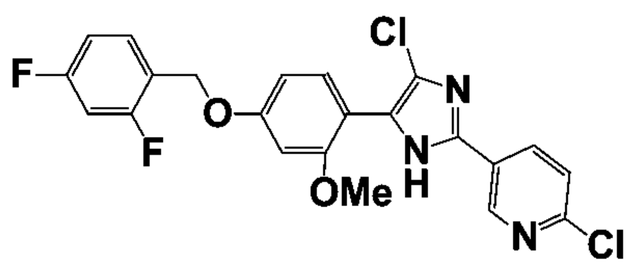
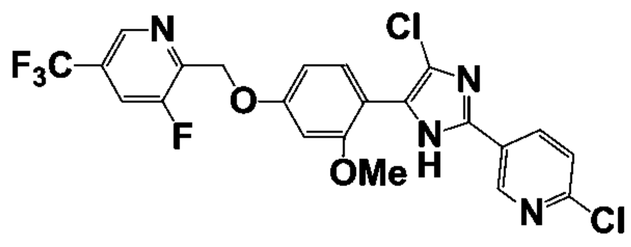
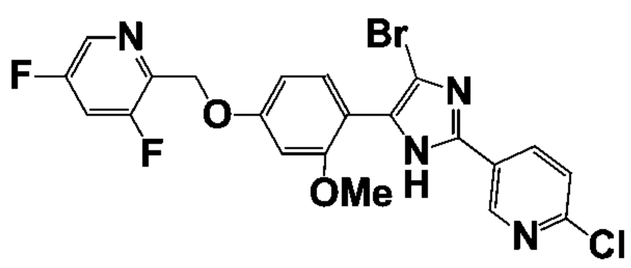
219		196-189	1H-NMR (**DMSO**) δ 2.49 (s, 3H), 3.78 (s, 3H), 5.27 (s, 2H), 6.74 (dd, J = 8.8, 2.4 Hz, 1H), 6.83 (d, J = 2.4 Hz, 1H), 7.32 (d, J = 8.3 Hz, 1H), 7.59 (d, J = 8.8 Hz, 1H), 8.28 (dd, J = 8.3, 2.4 Hz, 1H), 8.55 (d, J = 1.0 Hz, 1H), 8.67 (d, J = 1.0 Hz, 1H), 8.90 (d, J = 2.4 Hz, 1H), 12.99 (s, 1H)
220		198-201	1H-NMR (**DMSO**) δ 3.88 (s, 3H), 5.18 (s, 2H), 7.14 (dd, J = 8.3, 2.4 Hz, 1H), 7.17 (d, J = 8.8 Hz, 1H), 7.31 (dd, J = 8.3, 2.0 Hz, 1H), 7.40 (d, J = 2.0 Hz, 1H), 7.49 (dd, J = 7.3, 2.4 Hz, 1H), 7.64 (d, J = 8.3 Hz, 1H), 8.05 (dd, J = 8.3, 7.3 Hz, 1H), 8.35 (dd, J = 8.8, 2.4 Hz, 1H), 8.97 (d, J = 2.4 Hz, 1H), 13.06 (s, 1H)
221		182-184	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.37 (s, 2H), 6.74 (dd, J = 8.3, 2.2 Hz, 1H), 6.79 (d, J = 2.2 Hz, 1H), 7.34 (d, J = 8.3 Hz, 1H), 7.61 (d, J = 8.3 Hz, 1H), 7.68 (dd, J = 8.3, 4.9 Hz, 1H), 8.24-8.38 (m, 2H), 8.90 (d, J = 4.9 Hz, 1H), 8.92 (d, J = 2.4 Hz, 1H), 13.01 (s, 1H)
222		222-223 (分解)	1H-NMR (**DMSO**) δ 3.80 (s, 3H), 5.38 (s, 2H), 6.77 (dd, J = 8.5, 2.2 Hz, 1H), 6.85 (d, J = 2.4 Hz, 1H), 7.35 (d, J = 8.5 Hz, 1H), 7.61 (d, J = 8.3 Hz, 1H), 7.97 (d, J = 8.3 Hz, 1H), 8.19 (dd, J = 8.3, 1.5 Hz, 1H), 8.30 (dd, J = 8.3, 2.4 Hz, 1H), 8.82-8.91 (m, 1H), 8.92 (d, J = 2.4 Hz, 1H), 13.07 (s, 1H)
223		176-178	1H-NMR (**CDCL3**) δ 3.95 (s, 3H), 5.32 (s, 2H), 6.61-6.79 (m, 2H), 7.03 (dd, J = 8.8, 2.9 Hz, 1H), 7.70 (d, J

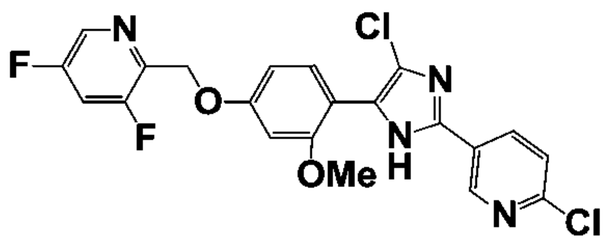
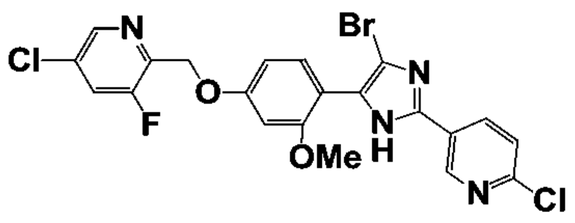
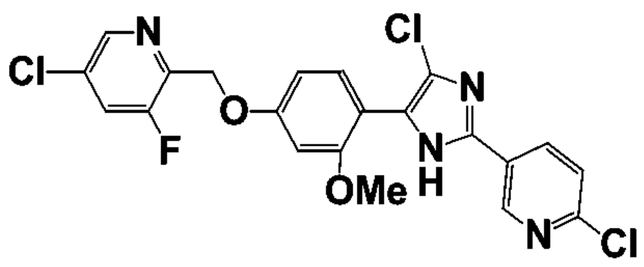
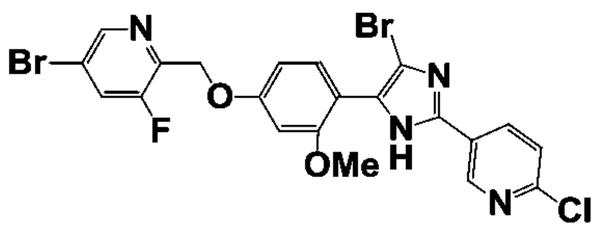
			= 8.3 Hz, 1H), 7.99 (dd, J = 8.3, 2.0 Hz, 1H), 8.04 (d, J = 8.3 Hz, 1H), 8.24-8.42 (m, 1H), 8.58 (d, J = 2.4 Hz, 1H), 8.89 (s, 1H), 10.43 (s, 1H)
224		195-197 (分解)	1H-NMR **(DMSO)** δ 3.80 (s, 3H), 5.38 (s, 2H), 6.75 (dd, J = 8.3, 2.0 Hz, 1H), 6.85 (d, J = 2.0 Hz, 1H), 7.30 (dd, J = 8.5, 2.4 Hz, 1H), 7.35 (d, J = 8.3 Hz, 1H), 7.97 (d, J = 8.3 Hz, 1H), 8.19 (dd, J = 8.3, 1.2 Hz, 1H), 8.44 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.75 (d, J = 2.0 Hz, 1H), 8.82-8.97 (m, 1H), 12.99 (s, 1H)
225		186-188	1H-NMR **(DMSO)** δ 3.80 (s, 3H), 5.39 (s, 2H), 6.74 (dd, J = 8.3, 1.9 Hz, 1H), 6.86 (d, J = 1.9 Hz, 1H), 7.34 (d, J = 8.3 Hz, 1H), 7.61 (d, J = 8.3 Hz, 1H), 7.79 (d, J = 8.3 Hz, 1H), 8.25-8.36 (m, 2H), 8.92 (d, J = 2.5 Hz, 1H), 9.00 (s, 1H)
226		186-193 (分解)	1H-NMR **(DMSO)** δ 3.80 (s, 3H), 5.37 (s, 2H), 6.75 (dd, J = 8.3, 2.4 Hz, 1H), 6.82 (d, J = 2.4 Hz, 1H), 7.35 (d, J = 8.3 Hz, 1H), 7.85 (ddd, J = 8.8, 8.8, 2.9 Hz, 1H), 7.99 (d, J = 8.3 Hz, 1H), 8.05 (dd, J = 8.8, 8.8 Hz, 1H), 8.21 (dd, J = 8.3, 1.5 Hz, 1H), 8.61 (d, J = 2.9 Hz, 1H), 8.91 (d, J = 1.5 Hz, 1H), 13.01 (s, 1H)
227		176-177	1H-NMR **(CDCL3)** δ 3.98 (s, 3H), 5.22 (s, 2H), 6.65-6.74 (m, 2H), 7.03 (dd, J = 8.8, 2.9 Hz, 1H), 7.75 (d, J = 8.3 Hz, 1H), 8.00 (dd, J = 8.3, 1.0 Hz, 1H), 8.06 (d, J = 8.3 Hz, 1H), 8.32 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.59 (d, J = 2.4 Hz, 1H), 8.82 (s, 1H), 10.50 (s, 1H)

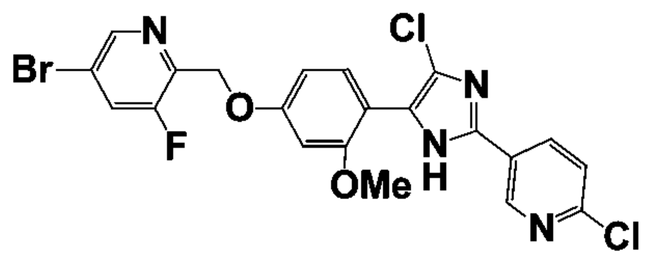
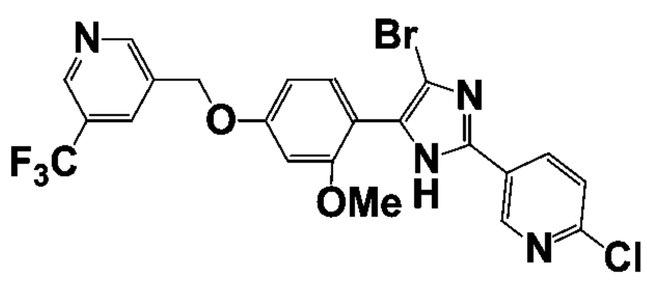
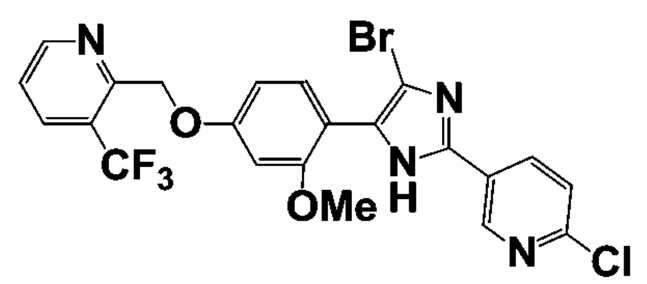
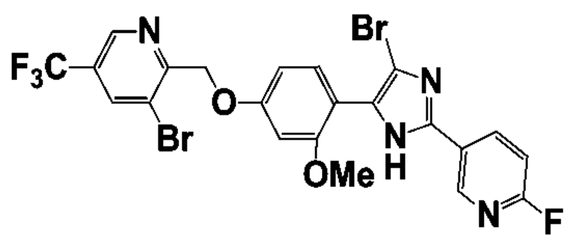
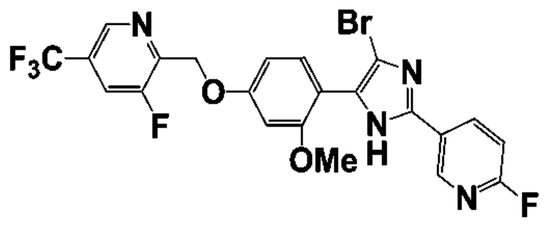
228		193-196	1H-NMR (**CDCL3**) δ 3.97 (s, 3H), 5.22 (s, 2H), 6.49-6.76 (m, 2H), 7.64-7.88 (m, 2H), 7.91-8.25 (m, 3H), 8.48 (d, J = 2.4 Hz, 1H), 8.74-8.90 (m, 1H), 11.05 (s, 1H)
229		205-208	1H-NMR (**CDCL3**) δ 3.98 (s, 3H), 5.22 (s, 2H), 6.61-6.79 (m, 2H), 7.41 (d, J = 8.3 Hz, 1H), 7.75 (d, J = 7.8 Hz, 1H), 8.00 (dd, J = 7.8, 1.5 Hz, 1H), 8.07 (d, J = 8.8 Hz, 1H), 8.16 (dd, J = 8.8, 2.9 Hz, 1H), 8.76 (d, J = 2.9 Hz, 1H), 8.82 (d, J = 1.5 Hz, 1H), 10.54 (s, 1H)
230		172-174	1H-NMR (**DMSO**) δ 3.83 (s, 3H), 5.37 (s, 2H), 6.80 (dd, J = 8.3, 2.1 Hz, 1H), 6.89 (d, J = 2.1 Hz, 1H), 7.37 (d, J = 8.3 Hz, 1H), 7.63 (d, J = 8.7 Hz, 1H), 8.32 (dd, J = 8.7, 2.5 Hz, 1H), 8.64-8.75 (m, 2H), 8.87 (s, 1H), 8.94 (d, J = 2.5 Hz, 1H), 13.06 (s, 1H)
231		222-224 (分解)	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.38 (s, 2H), 6.71 (dd, J = 8.8, 2.4 Hz, 1H), 6.83 (d, J = 2.4 Hz, 1H), 7.32 (d, J = 8.8 Hz, 1H), 7.71-7.92 (m, 2H), 8.04 (dd, J = 8.8, 4.6 Hz, 1H), 8.29 (dd, J = 8.3, 2.4 Hz, 1H), 8.59 (d, J = 2.4 Hz, 1H), 8.92-9.08 (m, 1H), 12.98 (s, 1H)
232		197-199 (分解)	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.38 (s, 2H), 6.71 (dd, J = 8.5, 2.4 Hz, 1H), 6.83 (d, J = 2.4 Hz, 1H), 7.23-7.41 (1H), 7.80 (d, J = 8.3 Hz, 1H), 7.90-8.12 (m, 2H), 8.29 (dd, J = 8.3, 2.0 Hz, 1H), 8.64 (d, J = 2.4 Hz, 1H), 8.92-9.09 (1H), 13.13 (s, 1H)

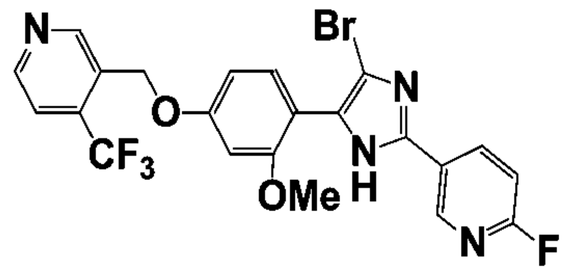
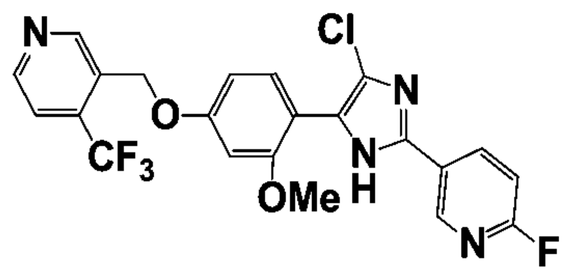
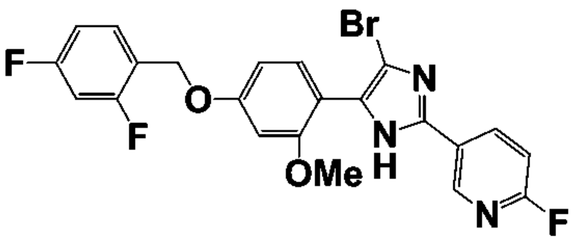
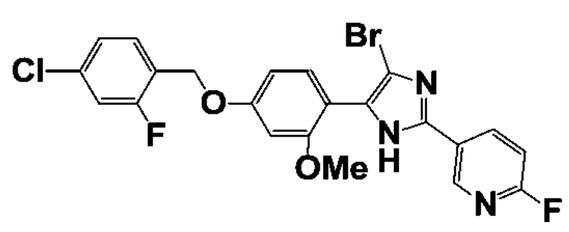
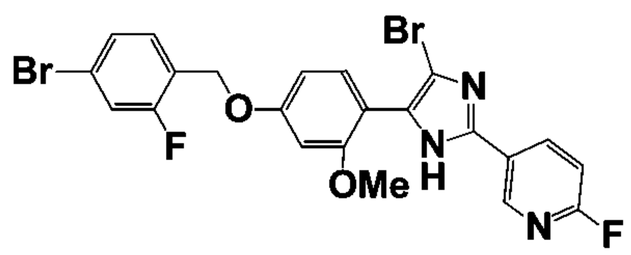
233		190-193	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.39 (s, 2H), 6.75 (dd, J = 8.3, 2.4 Hz, 1H), 6.87 (d, J = 2.0 Hz, 1H), 7.30 (dd, J = 8.8, 2.9 Hz, 1H), 7.35 (d, J = 8.3 Hz, 1H), 7.79 (d, J = 8.3 Hz, 1H), 8.29 (dd, J = 8.3, 2.4 Hz, 1H), 8.44 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.76 (d, J = 2.0 Hz, 1H), 9.00 (s, 1H), 12.94 (s, 1H)
234		171-175	1H-NMR (**CDCL3**) δ 1.10-2.07 (m, 10H), 2.64 (tt, J = 11.8, 3.5 Hz, 1H), 3.90 (s, 3H), 5.32 (s, 2H), 6.87 (d, J = 8.2 Hz, 1H), 7.06 (dd, J = 8.2, 2.0 Hz, 1H), 7.29 (d, J = 2.0 Hz, 1H), 7.72 (d, J = 8.2 Hz, 1H), 7.95 (dd, J = 8.2, 2.0 Hz, 1H), 8.84 (s, 1H), 9.97 (s, 1H)
235		180-182	1H-NMR (**CDCL3**) δ 3.94 (s, 3H), 5.30 (s, 2H), 6.62-6.72 (m, 2H), 7.38 (d, J = 8.5 Hz, 1H), 7.69 (d, J = 8.2 Hz, 1H), 7.95-8.03 (m, 2H), 8.13 (dd, J = 8.5, 2.6 Hz, 1H), 8.74 (d, J = 2.6 Hz, 1H), 8.88 (s, 1H), 10.69 (s, 1H)
236		137-146	1H-NMR (**CDCL3**) δ 1.68 (d, J = 6.3 Hz, 3H), 3.91 (s, 3H), 5.41 (q, J = 6.3 Hz, 1H), 6.49 (dd, J = 8.8, 2.4 Hz, 1H), 6.59 (d, J = 2.4 Hz, 1H), 7.00 (dd, J = 8.5, 2.7 Hz, 1H), 7.50 (d, J = 8.3 Hz, 2H), 7.62 (d, J = 8.3 Hz, 2H), 7.91 (d, J = 8.8 Hz, 1H), 8.28 (ddd, J = 9.1, 8.5, 2.4 Hz, 1H), 8.55 (d, J = 2.4 Hz, 1H), 10.50 (s, 1H)
237		170-175	1H-NMR (**DMSO**) δ 1.65 (d, J = 6.6 Hz, 3H), 3.75 (s, 3H), 5.71 (q, J = 6.6 Hz, 1H), 6.60 (dd, J = 8.5, 1.9 Hz, 1H), 6.78 (d, J = 1.9 Hz, 1H), 7.20-7.35

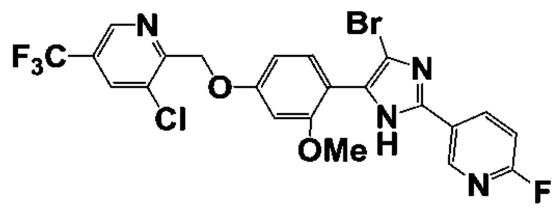
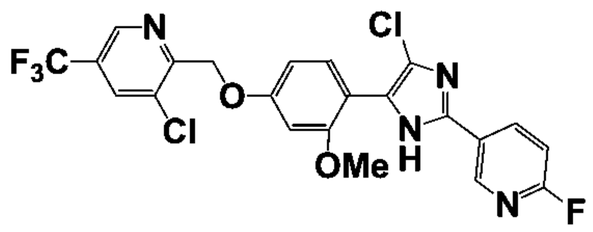
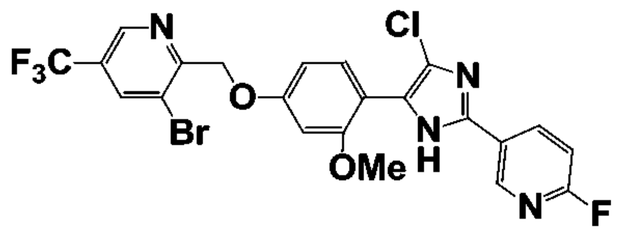
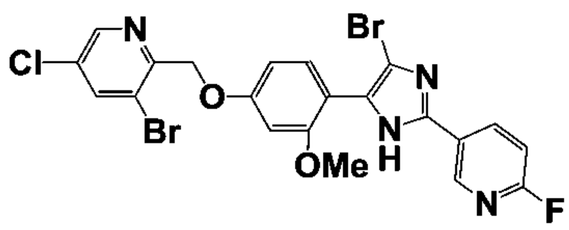
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238		173-175	1H-NMR (**CDCL3**) δ 1.76 (d, J = 6.8 Hz, 3H), 3.92 (s, 3H), 5.72 (q, J = 6.8 Hz, 1H), 6.58 (dd, J = 8.8, 2.4 Hz, 1H), 6.69 (d, J = 2.4 Hz, 1H), 7.01 (dd, J = 8.3, 2.4 Hz, 1H), 7.62 (dd, J = 9.0, 1.7 Hz, 1H), 7.94 (d, J = 8.8 Hz, 1H), 8.29 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.51 (d, J = 1.7 Hz, 1H), 8.56 (s, 1H), 10.50 (s, 1H)
239		148-150	1H-NMR (**CDCL3**) δ 1.72 (d, J = 6.5 Hz, 3H), 3.92 (s, 3H), 5.51 (q, J = 6.5 Hz, 1H), 6.49 (dd, J = 8.7, 2.1 Hz, 1H), 6.60 (d, J = 2.1 Hz, 1H), 7.00 (dd, J = 8.5, 2.7 Hz, 1H), 7.70 (d, J = 7.9 Hz, 1H), 7.85-7.98 (m, 2H), 8.17-8.37 (m, 1H), 8.55 (d, J = 1.7 Hz, 1H), 8.76 (s, 1H), 10.57 (s, 1H)
240		165-168	1H-NMR (**CDCL3**) δ 1.73 (d, J = 6.5 Hz, 3H), 3.93 (s, 3H), 5.54 (q, J = 6.5 Hz, 1H), 6.53 (dd, J = 8.8, 2.4 Hz, 1H), 6.64 (d, J = 2.4 Hz, 1H), 7.02 (dd, J = 8.8, 2.9 Hz, 1H), 7.58 (d, J = 8.8 Hz, 1H), 7.87-8.02 (m, 2H), 8.30 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.56 (d, J = 2.0 Hz, 1H), 8.79-8.94 (m, 1H), 10.45 (s, 1H)
241		198-201	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.35 (s, 2H), 6.79 (dd, J = 8.3, 2.4 Hz, 1H), 6.86 (d, J = 2.4 Hz, 1H), 7.37 (d, J = 8.3 Hz, 1H), 7.62 (d, J = 8.3 Hz, 1H), 8.31 (dd, J = 8.3, 2.4 Hz, 1H), 8.33-8.39 (m, 1H), 8.93 (d, J = 2.4

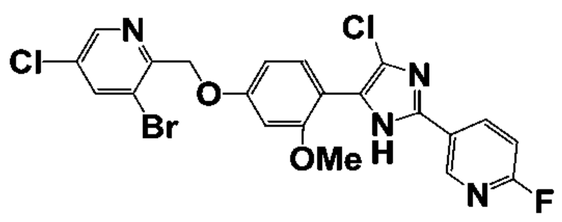
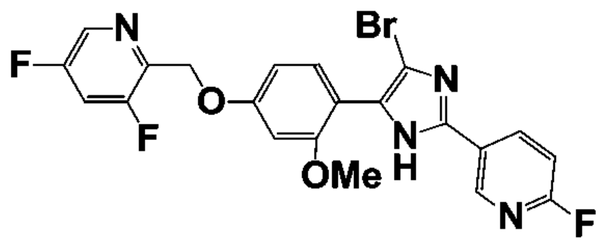
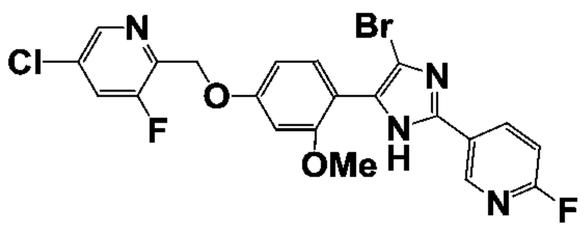
			Hz, 1H), 8.98 (s, 1H), 9.02 (d, J = 1.0 Hz, 1H), 13.02 (s, 1H)
242		236-239	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.40 (s, 2H), 6.75 (dd, J = 8.3, 2.4 Hz, 1H), 6.87 (d, J = 2.4 Hz, 1H), 7.36 (d, J = 8.3 Hz, 1H), 7.61 (d, J = 8.3 Hz, 1H), 7.80 (d, J = 4.9 Hz, 1H), 7.92-8.05 (m, 1H), 8.30 (dd, J = 8.3, 2.4 Hz, 1H), 8.80 (d, J = 4.9 Hz, 1H), 8.92 (d, J = 2.4 Hz, 1H)
243		195-199	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.37 (s, 2H), 6.74 (dd, J = 8.8, 2.4 Hz, 1H), 6.81 (d, J = 2.4 Hz, 1H), 7.36 (d, J = 8.3 Hz, 1H), 7.61 (d, J = 8.8 Hz, 1H), 7.80 (dd, J = 8.0, 4.6 Hz, 1H), 8.23-8.36 (m, 2H), 8.74 (d, J = 4.6 Hz, 1H), 8.92 (d, J = 2.4 Hz, 1H)
244		173-177	1H-NMR (**DMSO**) δ 3.80 (s, 3H), 5.18 (s, 2H), 6.76 (dd, J = 8.5, 2.4 Hz, 1H), 6.80 (d, J = 2.4 Hz, 1H), 7.15 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 7.27-7.41 (m, 2H), 7.57-7.71 (m, 2H), 8.30 (dd, J = 8.3, 2.4 Hz, 1H), 8.92 (d, J = 2.4 Hz, 1H)
245		116-131	1H-NMR (**DMSO**) δ 3.69 (s, 3H), 5.60 (s, 2H), 6.41 (dd, J = 8.3, 2.4 Hz, 1H), 6.46 (d, J = 2.4 Hz, 1H), 7.18 (d, J = 8.3 Hz, 1H), 7.60 (d, J = 8.8 Hz, 1H), 8.11 (dd, J = 8.8, 2.4 Hz, 1H), 8.41 (d, J = 9.8 Hz, 1H), 8.68 (d, J = 2.4 Hz, 1H), 8.85 (s, 1H), 9.63 (s, 1H)
246		190-193	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.30 (d, J = 1.5 Hz, 2H), 6.77 (dd, J = 8.3, 2.4 Hz, 1H), 6.82 (d, J = 2.4 Hz, 1H), 7.34 (d, J = 8.3 Hz, 1H), 7.61 (d, J = 8.3 Hz, 1H), 8.00 (ddd, J = 9.4, 9.4, 2.4

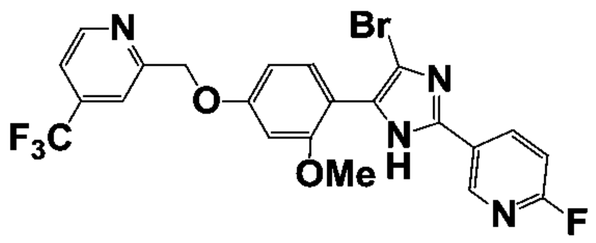
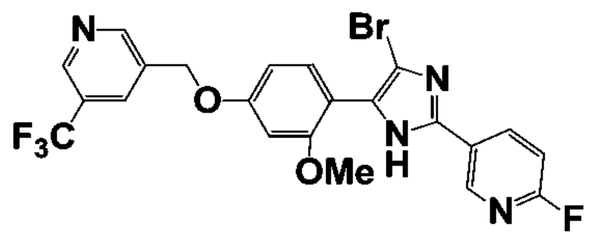
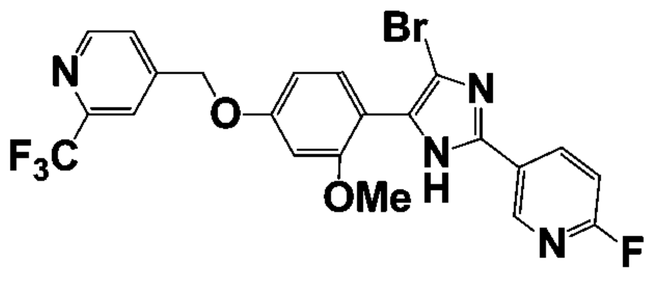
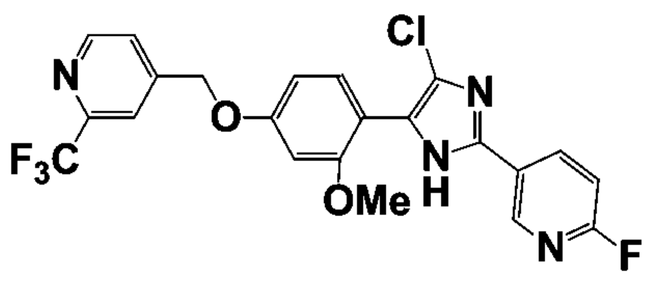
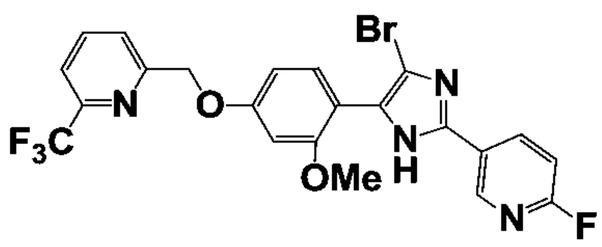
			Hz, 1H), 8.30 (dd, J = 8.3, 2.4 Hz, 1H), 8.57 (d, J = 2.4 Hz, 1H), 8.92 (d, J = 2.4 Hz, 1H), 13.06 (s, 1H)
247		187-190	1H-NMR **(DMSO)** δ 3.80 (s, 3H), 5.30 (d, J = 2.0 Hz, 2H), 6.77 (dd, J = 8.3, 2.4 Hz, 1H), 6.83 (d, J = 2.4 Hz, 1H), 7.35 (d, J = 8.5 Hz, 1H), 7.62 (d, J = 8.3 Hz, 1H), 8.04 (ddd, J = 9.6, 8.4, 2.7 Hz, 1H), 8.31 (dd, J = 8.5, 2.7 Hz, 1H), 8.57 (d, J = 2.7 Hz, 1H), 8.93 (dd, J = 2.7, 1.0 Hz, 1H), 13.01 (s, 1H)
248		172-176	1H-NMR **(DMSO)** δ 3.79 (s, 3H), 5.31 (d, J = 2.0 Hz, 2H), 6.75 (dd, J = 8.5, 2.4 Hz, 1H), 6.81 (d, J = 2.4 Hz, 1H), 7.33 (d, J = 8.5 Hz, 1H), 7.61 (d, J = 8.3 Hz, 1H), 8.20 (dd, J = 9.8, 2.0 Hz, 1H), 8.30 (dd, J = 8.3, 2.4 Hz, 1H), 8.58 (dd, J = 2.0, 1.0 Hz, 1H), 8.92 (d, J = 2.4 Hz, 1H), 13.07 (s, 1H)
249		174-181	1H-NMR **(DMSO)** δ 3.79 (s, 3H), 5.31 (d, J = 1.5 Hz, 2H), 6.76 (dd, J = 8.3, 2.4 Hz, 1H), 6.82 (d, J = 2.4 Hz, 1H), 7.34 (d, J = 8.5 Hz, 1H), 7.62 (d, J = 8.3 Hz, 1H), 8.19 (dd, J = 9.8, 2.0 Hz, 1H), 8.30 (dd, J = 8.5, 2.4 Hz, 1H), 8.58 (d, J = 2.0 Hz, 1H), 8.92 (d, J = 2.4 Hz, 1H), 13.01 (s, 1H)
250		174-179	1H-NMR **(DMSO)** δ 3.79 (s, 3H), 5.30 (d, J = 2.0 Hz, 2H), 6.75 (dd, J = 8.3, 2.4 Hz, 1H), 6.82 (d, J = 2.4 Hz, 1H), 7.33 (d, J = 8.3 Hz, 1H), 7.61 (d, J = 8.3 Hz, 1H), 8.21-8.39 (m, 2H), 8.65 (d, J = 1.5 Hz, 1H), 8.92 (d, J = 2.4 Hz, 1H), 13.06 (s, 1H)

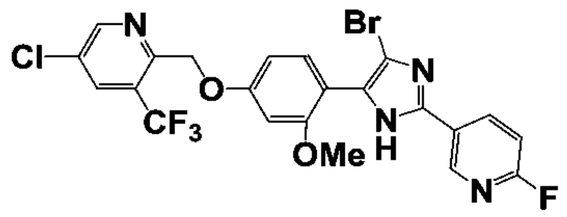
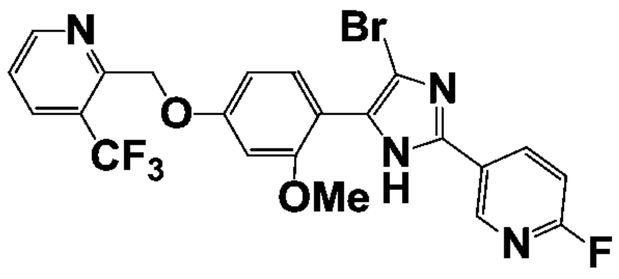
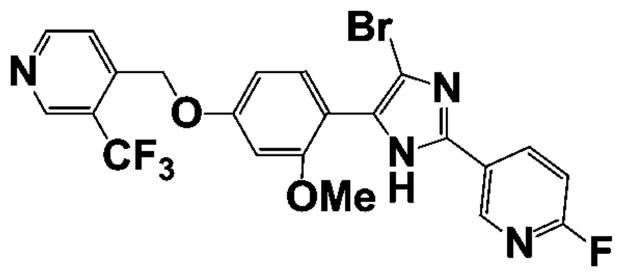
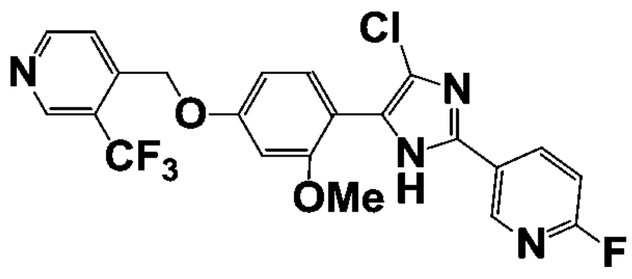
251		189-191	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.30 (d, J = 2.0 Hz, 2H), 6.75 (dd, J = 8.3, 2.4 Hz, 1H), 6.82 (d, J = 2.4 Hz, 1H), 7.34 (d, J = 8.3 Hz, 1H), 7.62 (d, J = 8.3 Hz, 1H), 8.26-8.34 (m, 2H), 8.62-8.68 (m, 1H), 8.92 (d, J = 2.4 Hz, 1H), 13.01 (s, 1H)
252		186-199	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.35 (s, 2H), 6.78 (dd, J = 8.3, 2.4 Hz, 1H), 6.86 (d, J = 2.4 Hz, 1H), 7.37 (d, J = 8.3 Hz, 1H), 7.61 (d, J = 8.3 Hz, 1H), 8.30 (dd, J = 8.3, 2.4 Hz, 1H), 8.33-8.38 (m, 1H), 8.92 (d, J = 2.4 Hz, 1H), 8.98 (d, J = 1.5 Hz, 1H), 9.02 (d, J = 1.5 Hz, 1H), 13.07 (s, 1H)
253		176-186	1H-NMR (**DMSO**) δ 3.77 (s, 3H), 5.37 (s, 2H), 6.64-6.84 (m, 2H), 7.31 (d, J = 8.8 Hz, 1H), 7.52-7.65 (m, 1H), 7.68 (dd, J = 7.3, 4.9 Hz, 1H), 8.20-8.37 (m, 2H), 8.83-8.98 (m, 2H)
254		148-170	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.42 (s, 2H), 6.73 (dd, J = 8.5, 2.2 Hz, 1H), 6.82 (d, J = 2.2 Hz, 1H), 7.30 (dd, J = 8.8, 2.7 Hz, 1H), 7.33 (d, J = 8.5 Hz, 1H), 8.43 (ddd, J = 8.8, 8.8, 2.2 Hz, 1H), 8.67 (d, J = 1.5 Hz, 1H), 8.75 (d, J = 2.2 Hz, 1H), 9.02 (d, J = 1.5 Hz, 1H), 12.99 (s, 1H)
255		156-158	1H-NMR (**CDCL3**) δ 3.93 (s, 3H), 5.38 (s, 2H), 6.65-6.85 (m, 2H), 7.02 (dd, J = 8.5, 2.7 Hz, 1H), 7.73 (dd, J = 9.3, 1.5 Hz, 1H), 8.03 (d, J = 8.3 Hz, 1H), 8.32 (ddd, J = 9.1, 8.5, 2.4 Hz, 1H), 8.58 (d, J = 2.4 Hz, 1H), 8.77 (s, 1H), 10.47 (s, 1H)

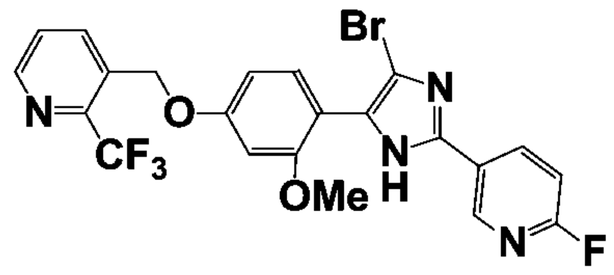
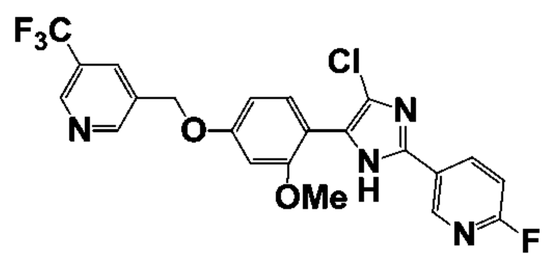
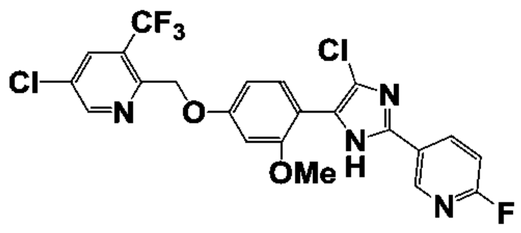
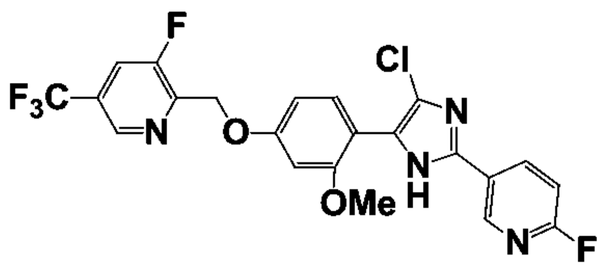
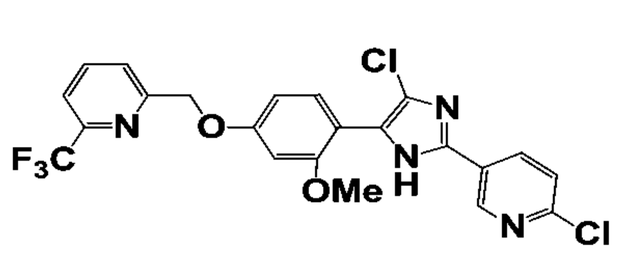
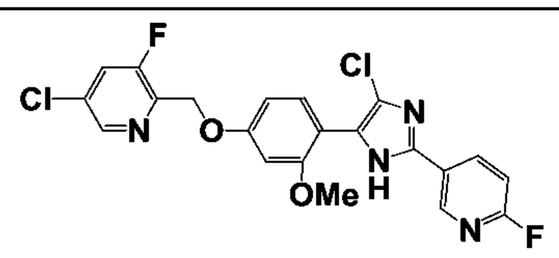
256		132-162	1H-NMR (**DMSO**) δ 3.73 (s, 3H), 5.30 (s, 2H), 6.70 (dd, J = 8.5, 2.3 Hz, 1H), 6.75 (d, J = 2.3 Hz, 1H), 7.23 (dd, J = 8.7, 2.9 Hz, 1H), 7.29 (d, J = 8.5 Hz, 1H), 7.77 (d, J = 5.0 Hz, 1H), 8.37 (ddd, J = 8.7, 8.7, 2.1 Hz, 1H), 8.69 (d, J = 2.1 Hz, 1H), 8.82 (d, J = 5.0 Hz, 1H), 8.98 (s, 1H), 12.93 (s, 1H)
257		133-153	1H-NMR (**DMSO**) δ 3.74 (s, 3H), 5.30 (s, 2H), 6.71 (dd, J = 8.3, 2.1 Hz, 1H), 6.77 (d, J = 2.1 Hz, 1H), 7.23 (dd, J = 8.5, 2.7 Hz, 1H), 7.30 (d, J = 8.3 Hz, 1H), 7.77 (d, J = 5.4 Hz, 1H), 8.37 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.69 (d, J = 2.4 Hz, 1H), 8.82 (d, J = 5.4 Hz, 1H), 8.98 (s, 1H)
258		164-166	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.20 (s, 2H), 6.77 (dd, J = 8.5, 2.1 Hz, 1H), 6.82 (d, J = 2.1 Hz, 1H), 7.16 (ddd, J = 8.5, 8.5, 2.5 Hz, 1H), 7.25-7.41 (m, 3H), 7.68 (dd, J = 8.3, 7.7 Hz, 1H), 8.45 (ddd, J = 8.0, 8.0, 2.4 Hz, 1H), 8.77 (d, J = 2.4 Hz, 1H), 13.00 (s, 1H)
259		165-167	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.23 (s, 2H), 6.77 (dd, J = 8.3, 1.7 Hz, 1H), 6.82 (d, J = 1.7 Hz, 1H), 7.31 (dd, J = 8.5, 2.3 Hz, 1H), 7.33-7.41 (m, 2H), 7.52 (d, J = 9.5 Hz, 1H), 7.65 (dd, J = 8.1, 8.1 Hz, 1H), 8.45 (ddd, J = 8.5, 8.5, 2.1 Hz, 1H), 8.77 (d, J = 2.1 Hz, 1H), 13.01 (s, 1H)
260		158-161	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.21 (s, 2H), 6.76 (dd, J = 8.7, 1.7 Hz, 1H), 6.82 (d, J = 1.7 Hz, 1H), 7.31 (dd, J = 8.5, 2.3 Hz,

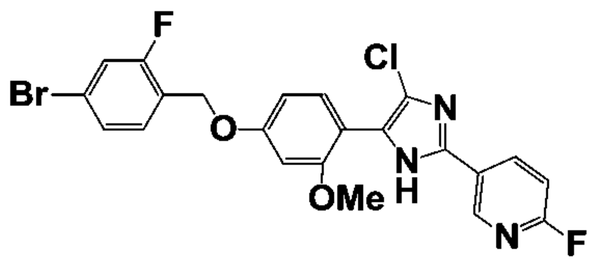
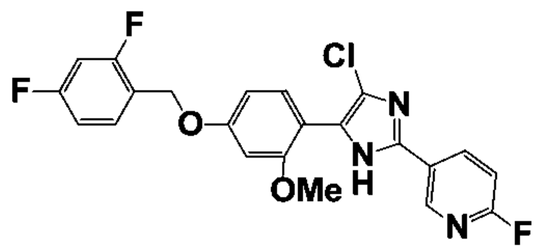
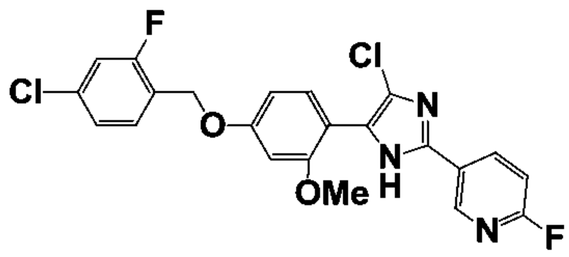
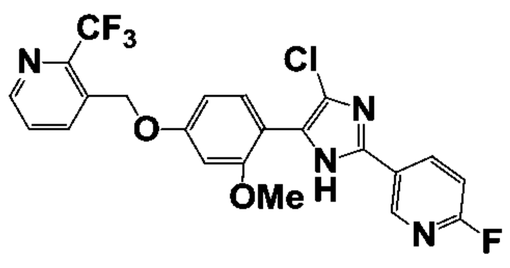
			1H), 7.35 (d, J = 8.7 Hz, 1H), 7.50 (d, J = 8.3 Hz, 1H), 7.58 (dd, J = 8.3, 8.3 Hz, 1H), 7.64 (d, J = 10.0 Hz, 1H), 8.45 (ddd, J = 8.5, 8.5, 1.9 Hz, 1H), 8.77 (d, J = 1.9 Hz, 1H), 13.00 (s, 1H)
261		179-180	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.46 (s, 2H), 6.75 (dd, J = 8.5, 2.5 Hz, 1H), 6.84 (d, J = 2.5 Hz, 1H), 7.31 (dd, J = 8.5, 2.7 Hz, 1H), 7.35 (d, J = 8.5 Hz, 1H), 8.43 (ddd, J = 8.5, 8.5, 2.5 Hz, 1H), 8.58 (d, J = 1.7 Hz, 1H), 8.76 (d, J = 2.5 Hz, 1H), 9.01 (d, J = 1.7 Hz, 1H), 13.01 (s, 1H)
262		160-162	1H-NMR (**CDCL3**) δ 3.97 (s, 3H), 5.42 (s, 2H), 6.73 (dd, J = 8.8, 2.4 Hz, 1H), 6.76 (d, J = 2.4 Hz, 1H), 7.03 (dd, J = 8.8, 2.9 Hz, 1H), 8.01 (d, J = 2.0 Hz, 1H), 8.04 (d, J = 8.8 Hz, 1H), 8.31 (ddd, J = 9.3, 8.8, 2.4 Hz, 1H), 8.58 (d, J = 2.4 Hz, 1H), 8.82 (d, J = 2.0 Hz, 1H), 10.53 (s, 1H)
263		166-170	1H-NMR (**DMSO**) δ 3.80 (s, 3H), 5.43 (s, 2H), 6.73 (dd, J = 8.8, 2.4 Hz, 1H), 6.82 (d, J = 2.4 Hz, 1H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.34 (d, J = 8.8 Hz, 1H), 8.44 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.67 (d, J = 1.5 Hz, 1H), 8.75 (d, J = 2.4 Hz, 1H), 9.02 (d, J = 1.5 Hz, 1H), 12.93 (s, 1H)
264		196-203	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.32 (s, 2H), 6.73 (dd, J = 8.3, 2.2 Hz, 1H), 6.81 (d, J = 2.2 Hz, 1H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.33 (d, J = 8.3 Hz, 1H), 8.39-8.50 (m, 2H), 8.69 (d, J = 2.2 Hz, 1H), 8.75 (d, J =

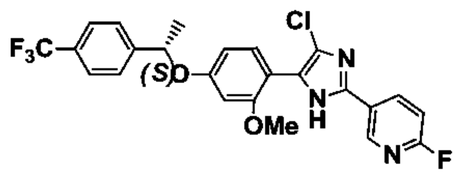
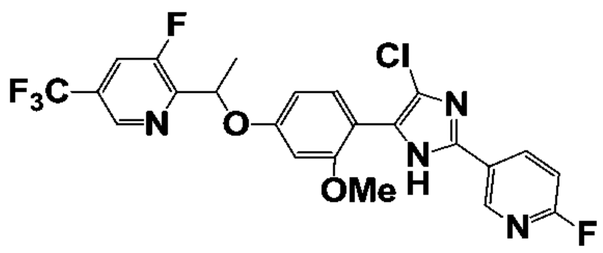
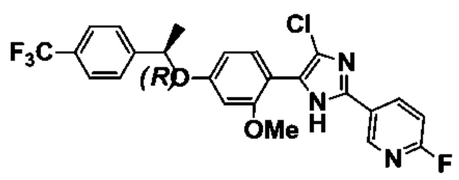
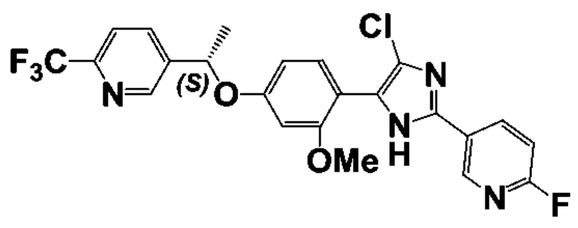
			2.4 Hz, 1H), 12.98 (s, 1H)
265		195-199	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.33 (s, 2H), 6.75 (dd, J = 8.5, 2.4 Hz, 1H), 6.83 (d, J = 2.4 Hz, 1H), 7.29 (dd, J = 8.7, 2.6 Hz, 1H), 7.35 (d, J = 8.5 Hz, 1H), 7.96 (s, 1H), 8.40-8.52 (m, 2H), 8.70 (d, J = 2.2 Hz, 1H), 8.76 (d, J = 2.4 Hz, 1H), 12.94 (s, 1H)
266		161-164	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.30 (d, J = 2.0 Hz, 2H), 6.76 (dd, J = 8.3, 2.2 Hz, 1H), 6.82 (d, J = 2.2 Hz, 1H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.33 (d, J = 8.3 Hz, 1H), 8.04 (ddd, J = 8.5, 8.0, 2.0 Hz, 1H), 8.44 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.57 (d, J = 2.0 Hz, 1H), 8.75 (d, J = 2.4 Hz, 1H), 12.99 (s, 1H)
267		175-178	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.31 (d, J = 1.5 Hz, 2H), 6.75 (dd, J = 8.3, 2.4 Hz, 1H), 6.82 (d, J = 2.4 Hz, 1H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.33 (d, J = 8.3 Hz, 1H), 8.19 (dd, J = 9.3, 2.0 Hz, 1H), 8.43 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.58 (dd, J = 2.0, 1.0 Hz, 1H), 8.75 (d, J = 2.4 Hz, 1H), 12.99 (s, 1H)
268		179-181	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.30 (d, J = 2.0 Hz, 2H), 6.75 (dd, J = 8.3, 2.4 Hz, 1H), 6.81 (d, J = 2.4 Hz, 1H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.36 (d, J = 8.3 Hz, 1H), 8.29 (dd, J = 9.3, 2.0 Hz, 1H), 8.43 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.65 (dd, J = 2.0, 1.0 Hz, 1H), 8.75 (d, J = 2.4 Hz, 1H), 12.98 (s, 1H)

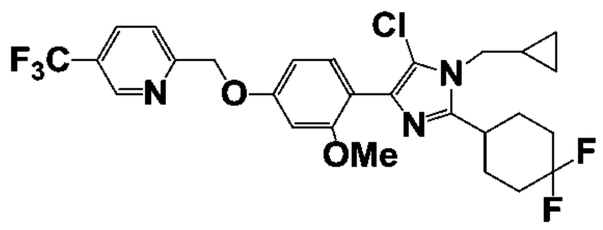
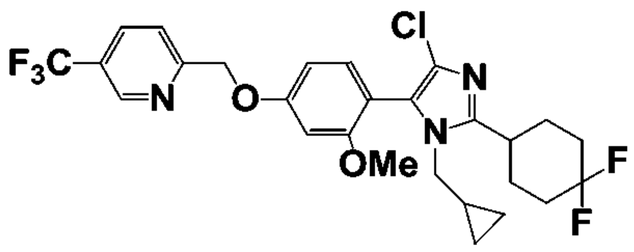
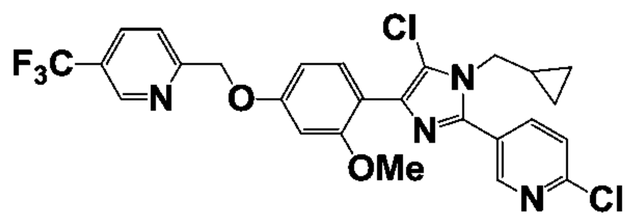
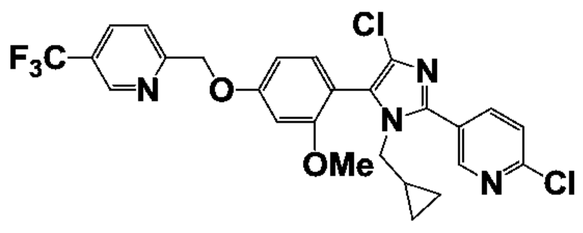
269		179-181	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.38 (s, 2H), 6.78 (dd, J = 8.3, 2.4 Hz, 1H), 6.89 (d, J = 2.4 Hz, 1H), 7.30 (dd, J = 8.8, 2.4 Hz, 1H), 7.35 (d, J = 8.3 Hz, 1H), 7.77 (d, J = 4.9 Hz, 1H), 7.92 (s, 1H), 8.44 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.75 (d, J = 2.4 Hz, 1H), 8.90 (d, J = 4.9 Hz, 1H), 12.99 (s, 1H)
270		176-179	1H-NMR (**CDCL3**) δ 3.96 (s, 3H), 5.21 (s, 2H), 6.62-6.80 (m, 2H), 7.03 (dd, J = 8.5, 2.7 Hz, 1H), 7.99-8.15 (m, 2H), 8.25-8.43 (m, 1H), 8.59 (d, J = 1.5 Hz, 1H), 8.83-8.98 (m, 2H), 10.41 (s, 1H)
271		223-225 (分解)	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.40 (s, 2H), 6.75 (dd, J = 8.3, 2.4 Hz, 1H), 6.87 (d, J = 2.4 Hz, 1H), 7.29 (dd, J = 8.5, 2.7 Hz, 1H), 7.35 (d, J = 8.3 Hz, 1H), 7.80 (d, J = 4.9 Hz, 1H), 7.97-8.00 (m, 1H), 8.44 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.75 (d, J = 2.4 Hz, 1H), 8.80 (d, J = 4.9 Hz, 1H), 12.99 (s, 1H)
272		236-238	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.40 (s, 2H), 6.75 (dd, J = 8.3, 2.4 Hz, 1H), 6.87 (d, J = 2.4 Hz, 1H), 7.29 (dd, J = 8.5, 2.7 Hz, 1H), 7.35 (d, J = 8.3 Hz, 1H), 7.80 (d, J = 5.4 Hz, 1H), 7.98 (s, 1H), 8.44 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.75 (d, J = 2.4 Hz, 1H), 8.80 (d, J = 5.4 Hz, 1H), 12.99 (s, 1H)
273		200-202 (分解)	1H-NMR (**CDCL3**) δ 3.95 (s, 3H), 5.33 (s, 2H), 6.67-6.75 (m, 2H), 7.03 (dd, J = 8.5, 2.7 Hz, 1H), 7.66 (d, J = 7.8 Hz, 1H), 7.78 (d, J = 7.8 Hz, 1H), 7.95 (dd, J = 7.8, 7.8 Hz, 1H), 8.03 (d, J = 8.3 Hz, 1H), 8.32 (ddd, J =

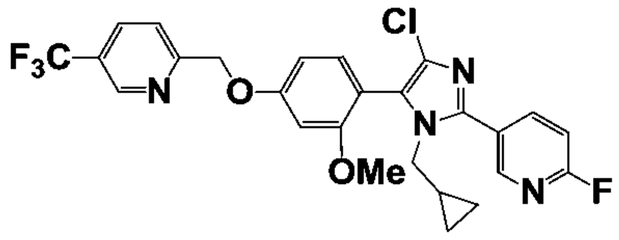
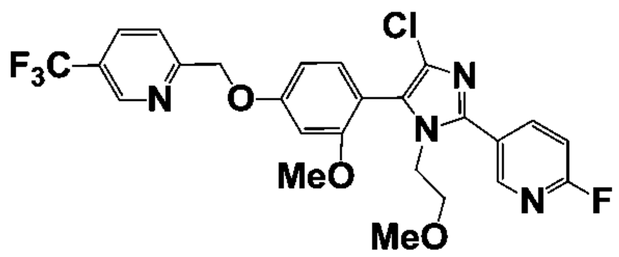
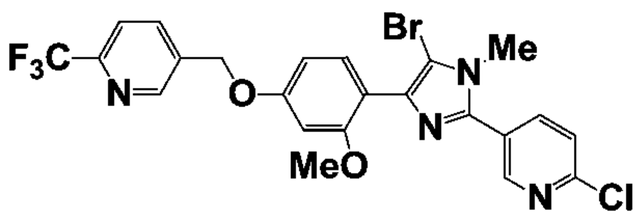
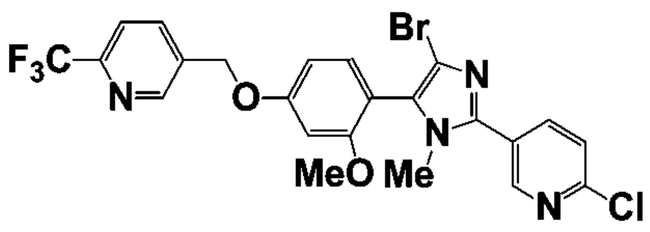
			9.1, 8.5, 2.4 Hz, 1H), 8.58 (d, J = 2.4 Hz, 1H), 10.43 (s, 1H)
274		167-168	1H-NMR (**DMSO**) δ 3.78 (s, 3H), 5.37 (s, 2H), 6.71 (dd, J = 8.3, 2.4 Hz, 1H), 6.78 (d, J = 2.4 Hz, 1H), 7.28 (dd, J = 8.5, 2.7 Hz, 1H), 7.33 (d, J = 8.3 Hz, 1H), 8.43 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.49 (d, J = 2.0 Hz, 1H), 8.74 (d, J = 2.4 Hz, 1H), 8.99 (d, J = 2.0 Hz, 1H), 12.99 (s, 1H)
275		144-154	1H-NMR (**DMSO**) δ 3.78 (s, 3H), 5.37 (s, 2H), 6.73 (dd, J = 8.3, 2.0 Hz, 1H), 6.81 (d, J = 2.0 Hz, 1H), 7.24-7.41 (m, 2H), 7.68 (dd, J = 7.8, 4.4 Hz, 1H), 8.29 (d, J = 7.8 Hz, 1H), 8.43 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.74 (d, J = 2.4 Hz, 1H), 8.90 (d, J = 4.4 Hz, 1H), 12.98 (s, 1H)
276		199-203 (分解)	1H-NMR (**CDCL3**) δ 3.97 (s, 3H), 5.35 (s, 2H), 6.66 (dd, J = 8.8, 2.4 Hz, 1H), 6.69 (d, J = 2.4 Hz, 1H), 7.04 (dd, J = 8.3, 2.9 Hz, 1H), 7.75 (d, J = 5.4 Hz, 1H), 8.06 (d, J = 8.8 Hz, 1H), 8.34 (ddd, J = 8.3, 7.6, 2.4 Hz, 1H), 8.59 (d, J = 2.4 Hz, 1H), 8.84 (d, J = 5.4 Hz, 1H), 8.93 (s, 1H), 10.38 (s, 1H)
277		203-208	1H-NMR (**DMSO**) δ 3.80 (s, 3H), 5.41 (s, 2H), 6.72 (dd, J = 8.3, 2.4 Hz, 1H), 6.84 (d, J = 2.4 Hz, 1H), 7.30 (dd, J = 8.8, 2.4 Hz, 1H), 7.36 (d, J = 8.3 Hz, 1H), 7.83 (d, J = 5.4 Hz, 1H), 8.43 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.75 (d, J = 2.4 Hz, 1H), 8.92 (d, J = 5.4 Hz, 1H), 8.99 (s, 1H), 12.94 (s, 1H)

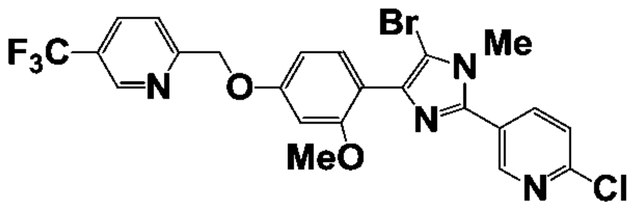
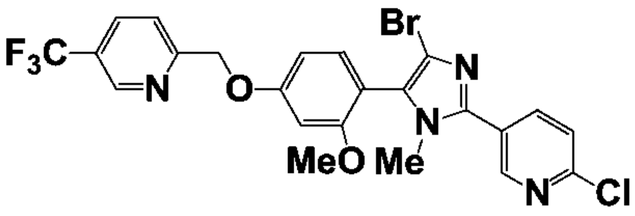
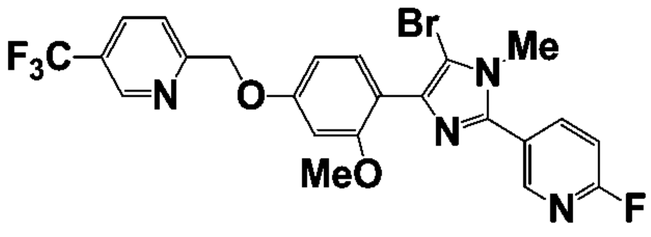
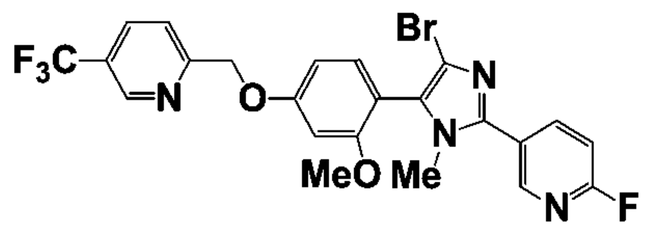
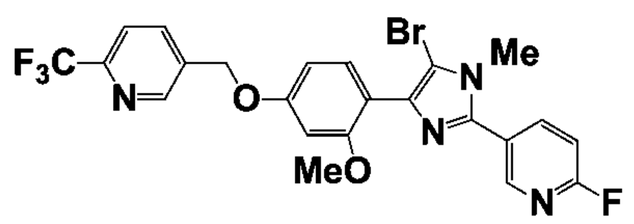
278		176-179	1H-NMR (**DMSO**) δ 3.79 (s, 3H), 5.37 (s, 2H), 6.74 (dd, J = 8.3, 2.2 Hz, 1H), 6.81 (d, J = 2.2 Hz, 1H), 7.30 (dd, J = 8.8, 2.9 Hz, 1H), 7.35 (d, J = 8.3 Hz, 1H), 7.80 (dd, J = 7.8, 4.4 Hz, 1H), 8.27 (d, J = 7.8 Hz, 1H), 8.43 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.70-8.80 (m, 2H), 13.00 (s, 1H)
279		188-190	1H-NMR (**CDCL3**) δ 3.99 (s, 3H), 5.20 (s, 2H), 6.66-6.77 (m, 2H), 7.04 (dd, J = 8.3, 2.9 Hz, 1H), 7.99-8.15 (m, 2H), 8.32 (ddd, J = 9.1, 8.3, 2.4 Hz, 1H), 8.59 (d, J = 2.4 Hz, 1H), 8.82-8.98 (m, 2H), 10.53 (s, 1H)
280		156-158	1H-NMR (**CDCL3**) δ 3.93 (s, 3H), 5.36 (s, 2H), 6.59-6.79 (m, 2H), 7.01 (dd, J = 8.8, 2.4 Hz, 1H), 7.91-8.13 (m, 2H), 8.20-8.39 (m, 1H), 8.58 (s, 1H), 8.78 (s, 1H), 10.58 (s, 1H)
281		150-152	1H-NMR (**CDCL3**) δ 3.96 (s, 3H), 5.37 (s, 2H), 6.70-6.81 (m, 2H), 7.03 (dd, J = 8.5, 2.7 Hz, 1H), 7.73 (dd, J = 9.0, 2.0 Hz, 1H), 8.04 (d, J = 8.3 Hz, 1H), 8.31 (ddd, J = 8.5, 8.5, 2.7 Hz, 1H), 8.58 (d, J = 2.0 Hz, 1H), 8.77 (s, 1H), 10.53 (s, 1H)
282		190-193	1H-NMR (**CDCL3**) δ 3.97 (s, 3H), 5.33 (s, 2H), 6.67-6.75 (2H), 7.41 (dd, J = 8.3, 0.8 Hz, 1H), 7.66 (d, J = 7.7 Hz, 1H), 7.78 (d, J = 7.7 Hz, 1H), 7.94 (dd, J = 7.7, 7.7 Hz, 1H), 8.04 (d, J = 8.7 Hz, 1H), 8.15 (dd, J = 8.3, 2.5 Hz, 1H), 8.76 (d, J = 2.5 Hz, 1H), 10.54 (s, 1H)
283		172-175	1H-NMR (**DMSO**) δ 3.80 (s, 3H), 5.31 (d, J = 2.1 Hz, 2H), 6.76 (dd, J = 8.3, 2.5 Hz, 1H), 6.84 (d, J = 2.5

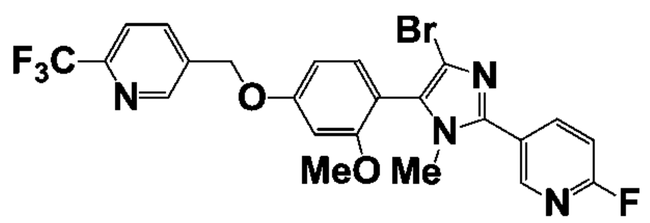
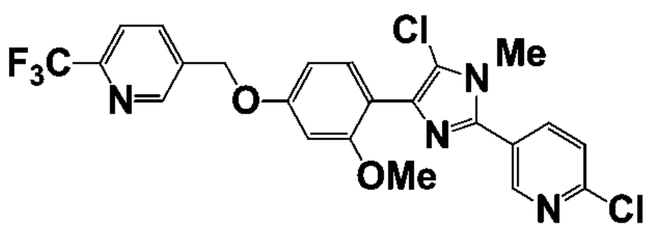
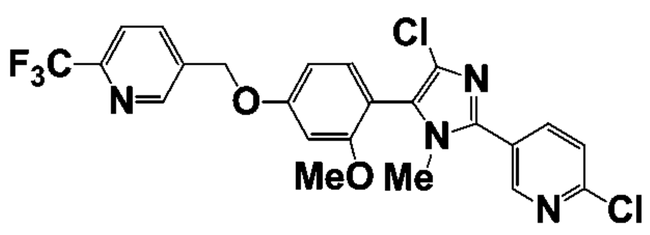
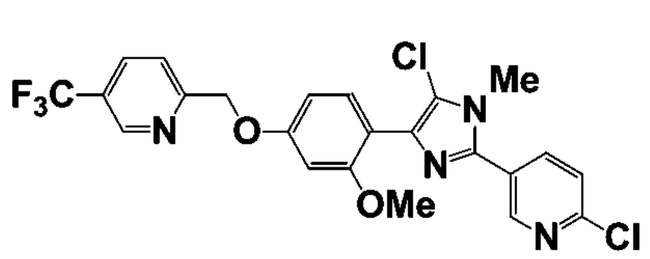
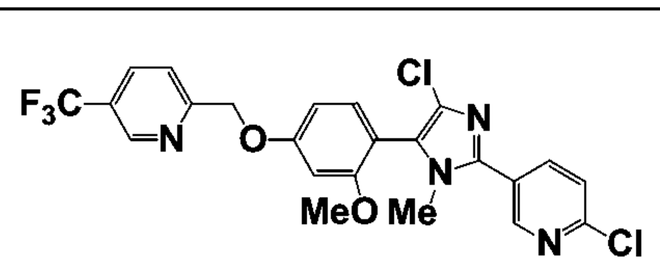
			Hz, 1H), 7.30 (dd, J = 8.5, 2.3 Hz, 1H), 7.34 (d, J = 8.3 Hz, 1H), 8.19 (dd, J = 9.5, 2.1 Hz, 1H), 8.44 (ddd, J = 8.5, 8.5, 2.5 Hz, 1H), 8.58 (dd, J = 2.1, 0.8 Hz, 1H), 8.75 (d, J = 2.5 Hz, 1H), 12.93 (s, 1H)
284		183-185	1H-NMR (**CDCL3**) δ 3.92 (s, 3H), 5.10 (s, 2H), 6.63 (d, J = 2.5 Hz, 1H), 6.67 (dd, J = 8.7, 2.5 Hz, 1H), 6.99 (dd, J = 8.7, 2.9 Hz, 1H), 7.27-7.44 (m, 3H), 7.97 (d, J = 8.7 Hz, 1H), 8.28 (ddd, J = 8.7, 8.7, 2.5 Hz, 1H), 8.57 (d, J = 2.5 Hz, 1H), 10.66 (s, 1H)
285		163-165	1H-NMR (**DMSO**) δ 3.81 (s, 3H), 5.19 (s, 2H), 6.76 (dd, J = 8.3, 2.4 Hz, 1H), 6.81 (d, J = 2.4 Hz, 1H), 7.15 (ddd, J = 11.1, 11.1, 2.0 Hz, 1H), 7.27-7.40 (m, 3H), 7.66 (dd, J = 8.5, 8.5, 6.8 Hz, 1H), 8.44 (ddd, J = 8.0, 8.0, 2.4 Hz, 1H), 8.76 (d, J = 2.4 Hz, 1H), 12.92 (s, 1H)
286		163-166	1H-NMR (**DMSO**) δ 3.80 (s, 3H), 5.21 (s, 2H), 6.75 (dd, J = 8.5, 2.4 Hz, 1H), 6.83 (d, J = 2.4 Hz, 1H), 7.30 (dd, J = 8.8, 2.4 Hz, 1H), 7.33-7.39 (m, 2H), 7.51 (dd, J = 9.8, 2.0 Hz, 1H), 7.63 (dd, J = 8.0, 8.0 Hz, 1H), 8.44 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.76 (d, J = 2.4 Hz, 1H), 12.94 (s, 1H)
287		165-171	1H-NMR (**CDCL3**) δ 3.98 (s, 3H), 5.35 (s, 2H), 6.64-6.72 (m, 2H), 7.03 (dd, J = 8.8, 2.9 Hz, 1H), 7.57 (dd, J = 7.8, 4.9 Hz, 1H), 8.04 (d, J = 8.3 Hz, 1H), 8.15 (d, J = 7.8 Hz, 1H), 8.31 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.58 (d, J = 2.4 Hz, 1H), 8.68 (d, J = 4.9

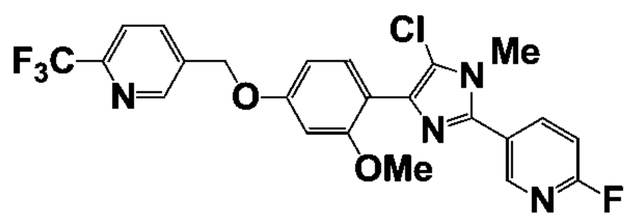
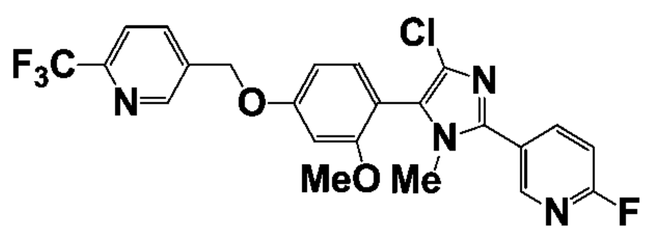
			Hz, 1H), 10.51 (s, 1H)
288		137-139	1H-NMR (**CDCL3**) δ 1.68 (d, J = 6.5 Hz, 3H), 3.91 (s, 3H), 5.42 (q, J = 6.5 Hz, 1H), 6.49 (dd, J = 8.8, 2.4 Hz, 1H), 6.60 (d, J = 2.4 Hz, 1H), 7.01 (dd, J = 8.5, 2.7 Hz, 1H), 7.51 (d, J = 8.3 Hz, 2H), 7.63 (d, J = 8.3 Hz, 2H), 7.92 (d, J = 8.8 Hz, 1H), 8.28 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.55 (d, J = 2.4 Hz, 1H), 10.48 (s, 1H)
289		155-159	1H-NMR (**CDCL3**) δ 1.79 (d, J = 6.5 Hz, 3H), 3.93 (s, 3H), 5.82 (q, J = 6.5 Hz, 1H), 6.57 (dd, J = 8.8, 2.4 Hz, 1H), 6.70 (d, J = 2.4 Hz, 1H), 7.02 (dd, J = 8.5, 2.7 Hz, 1H), 7.67 (d, J = 8.8 Hz, 1H), 7.95 (d, J = 8.8 Hz, 1H), 8.29 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.56 (d, J = 1.5 Hz, 1H), 8.72 (s, 1H), 10.49 (s, 1H)
290		137-139	1H-NMR (**CDCL3**) δ 1.70 (d, J = 6.8 Hz, 3H), 3.92 (s, 3H), 5.42 (q, J = 6.8 Hz, 1H), 6.50 (dd, J = 8.8, 2.0 Hz, 1H), 6.60 (d, J = 2.0 Hz, 1H), 7.02 (dd, J = 8.3, 2.4 Hz, 1H), 7.51 (d, J = 8.3 Hz, 2H), 7.63 (d, J = 8.3 Hz, 2H), 7.93 (d, J = 8.8 Hz, 1H), 8.30 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.56 (s, 1H), 10.46 (s, 1H)
291		74-97	1H-NMR (**CDCL3**) δ 1.72 (d, J = 6.5 Hz, 3H), 3.93 (s, 3H), 5.52 (q, J = 6.5 Hz, 1H), 6.50 (dd, J = 8.5, 2.4 Hz, 1H), 6.61 (d, J = 2.4 Hz, 1H), 7.01 (dd, J = 8.5, 2.7 Hz, 1H), 7.69 (d, J = 7.8 Hz, 1H), 7.87-8.01 (m, 2H), 8.29 (ddd, J =

			9.1, 8.5, 1.2 Hz, 1H), 8.56 (d, J = 2.4 Hz, 1H), 8.77 (d, J = 1.2 Hz, 1H), 10.51 (s, 1H)
292		144-146	1H-NMR (**CDCL3**) δ 0.34-0.49 (m, 2H), 0.57-0.74 (m, 2H), 1.08-1.23 (m, 1H), 1.73-2.41 (m, 8H), 2.64-2.85 (m, 1H), 3.80-3.87 (m, 5H), 5.30 (s, 2H), 6.55 (dd, J = 8.3, 2.4 Hz, 1H), 6.62 (d, J = 2.4 Hz, 1H), 7.40 (d, J = 8.3 Hz, 1H), 7.69 (d, J = 8.3 Hz, 1H), 7.96 (d, J = 8.3 Hz, 1H), 8.79-8.95 (m, 1H)
293		149-151	1H-NMR (**DMSO**) δ -0.16-0.17 (m, 2H), 0.25-0.49 (m, 2H), 0.72-0.92 (m, 1H), 1.73-2.24 (m, 8H), 3.00-3.14 (m, 1H), 3.46-3.55 (m, 1H), 3.79 (s, 3H), 3.81-3.93 (m, 1H), 5.42 (s, 2H), 6.78 (dd, J = 8.3, 2.4 Hz, 1H), 6.89 (d, J = 2.4 Hz, 1H), 7.20 (d, J = 8.3 Hz, 1H), 7.86 (d, J = 8.3 Hz, 1H), 8.34 (dd, J = 8.3, 2.0 Hz, 1H), 9.05 (d, J = 2.0 Hz, 1H)
294		123-126	1H-NMR (**CDCL3**) δ 0.20-0.30 (m, 2H), 0.44-0.66 (m, 2H), 1.02-1.19 (m, 1H), 3.85 (s, 3H), 3.98 (d, J = 6.8 Hz, 2H), 5.32 (s, 2H), 6.61 (dd, J = 8.3, 2.4 Hz, 1H), 6.67 (d, J = 2.4 Hz, 1H), 7.34-7.53 (m, 2H), 7.71 (d, J = 8.3 Hz, 1H), 7.89-8.09 (m, 2H), 8.70 (d, J = 2.0 Hz, 1H), 8.79-8.96 (m, 1H)
295		130-132	1H-NMR (**CDCL3**) δ -0.38--0.15 (m, 2H), 0.20-0.36 (m, 2H), 0.63-0.79 (m, 1H), 3.52-3.70 (m, 1H), 3.75-3.97 (m, 4H), 5.33 (s, 2H), 6.60-6.77 (m, 2H), 7.19-7.35 (m, 2H), 7.45 (d, J = 8.3 Hz, 1H), 7.73 (d, J =

			8.3 Hz, 1H), 7.93-8.09 (m, 2H), 8.70 (d, J = 2.0 Hz, 1H), 8.89 (s, 1H)
296		油狀	1H-NMR (**CDCL3**) δ -0.39--0.16 (m, 2H), 0.18-0.37 (m, 2H), 0.62-0.79 (m, 1H), 3.51-3.70 (m, 1H), 3.74-3.95 (m, 4H), 4.03-4.21 (m, 1H), 5.33 (s, 2H), 6.60-6.78 (m, 2H), 7.06 (dd, J = 8.8, 2.9 Hz, 1H), 7.23-7.35 (m, 2H), 7.74 (d, J = 8.3 Hz, 1H), 7.98-8.04 (m, 1H), 8.10-8.17 (m, 1H), 8.52 (d, J = 2.0 Hz, 1H), 8.82-8.97 (m, 1H)
297		131-136	1H-NMR (**CDCL3**) δ 3.11 (s, 3H), 3.16-3.34 (m, 2H), 3.82 (s, 3H), 3.93-4.18 (m, 2H), 5.33 (s, 2H), 6.61-6.78 (m, 2H), 7.03 (dd, J = 8.3, 2.9 Hz, 1H), 7.19-7.35 (m, 1H), 7.74 (d, J = 7.8 Hz, 1H), 8.01 (dd, J = 8.3, 2.0 Hz, 1H), 8.22 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.63 (d, J = 2.4 Hz, 1H), 8.82-8.97 (m, 1H)
298		177-182	1H-NMR (**DMSO**) δ 3.74 (s, 3H), 3.78 (s, 3H), 5.36 (s, 2H), 6.71 (dd, J = 8.3, 2.0 Hz, 1H), 6.79 (d, J = 2.0 Hz, 1H), 7.27 (d, J = 8.3 Hz, 1H), 7.68 (d, J = 8.8 Hz, 1H), 7.98 (d, J = 7.8 Hz, 1H), 8.17-8.23 (m, 2H), 8.75 (d, J = 2.4 Hz, 1H), 8.90 (s, 1H)
299		140-142	1H-NMR (**DMSO**) δ 3.50 (s, 3H), 3.83 (s, 3H), 5.39 (s, 2H), 6.81 (dd, J = 8.3, 2.0 Hz, 1H), 6.89 (d, J = 2.0 Hz, 1H), 7.27 (d, J = 8.3 Hz, 1H), 7.67 (d, J = 8.3 Hz, 1H), 7.99 (d, J = 8.3 Hz, 1H), 8.17-8.31 (m, 2H), 8.78 (d, J = 2.4 Hz, 1H), 8.90-8.98 (m, 1H)

300		141-143	1H-NMR (**DMSO**) δ 3.73 (s, 3H), 3.77 (s, 3H), 5.36 (s, 2H), 6.67 (dd, J = 8.3, 2.2 Hz, 1H), 6.80 (d, J = 2.2 Hz, 1H), 7.25 (d, J = 8.2 Hz, 1H), 7.66 (d, J = 8.3 Hz, 1H), 7.79 (d, J = 8.2 Hz, 1H), 8.17 (dd, J = 8.2, 2.3 Hz, 1H), 8.27 (dd, J = 8.2, 2.0 Hz, 1H), 8.73 (d, J = 2.3 Hz, 1H), 8.99 (s, 1H)
301		125-127	1H-NMR (**DMSO**) δ 3.48 (s, 3H), 3.82 (s, 3H), 5.39 (s, 2H), 6.78 (dd, J = 8.5, 2.0 Hz, 1H), 6.90 (d, J = 2.0 Hz, 1H), 7.23 (d, J = 8.5 Hz, 1H), 7.65 (d, J = 8.5 Hz, 1H), 7.82 (d, J = 8.5 Hz, 1H), 8.20 (dd, J = 8.5, 2.3 Hz, 1H), 8.30 (dd, J = 8.5, 2.0 Hz, 1H), 8.76 (d, J = 2.3 Hz, 1H), 9.00 (d, J = 2.0 Hz, 1H)
302		179-181	1H-NMR (**DMSO**) δ 3.72 (s, 3H), 3.78 (s, 3H), 5.37 (s, 2H), 6.66 (dd, J = 8.8, 2.0 Hz, 1H), 6.81 (d, J = 2.0 Hz, 1H), 7.26 (dd, J = 8.3, 1.5 Hz, 1H), 7.36 (d, J = 8.3 Hz, 1H), 7.80 (d, J = 8.3 Hz, 1H), 8.21-8.39 (m, 2H), 8.57 (s, 1H), 9.01 (s, 1H)
303		130-132	1H-NMR (**DMSO**) δ 3.47 (s, 3H), 3.83 (s, 3H), 5.41 (s, 2H), 6.79 (dd, J = 8.5, 2.4 Hz, 1H), 6.91 (d, J = 2.4 Hz, 1H), 7.25 (d, J = 8.3 Hz, 1H), 7.36 (dd, J = 8.5, 2.7 Hz, 1H), 7.84 (d, J = 8.5 Hz, 1H), 8.28-8.40 (m, 2H), 8.60 (d, J = 2.0 Hz, 1H), 9.02 (d, J = 1.0 Hz, 1H)
304			1H-NMR (**CDCL3**) δ 3.75 (s, 3H), 3.86 (s, 3H), 5.21 (s, 2H), 6.53-6.75 (m, 2H), 7.06 (dd, J = 8.3, 2.9 Hz, 1H), 7.41 (d, J = 7.8 Hz, 1H), 7.73 (d, J = 8.3 Hz, 1H), 8.00 (d,

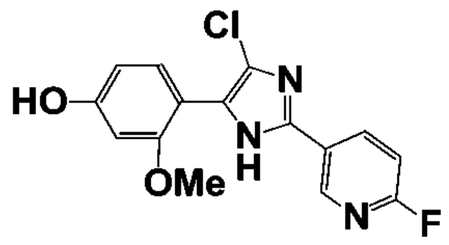
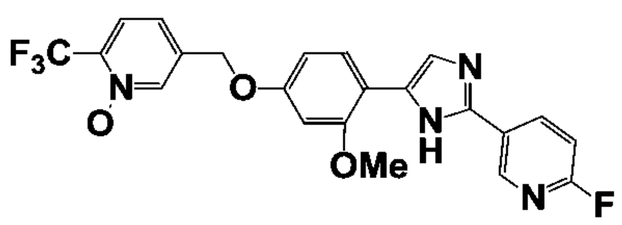
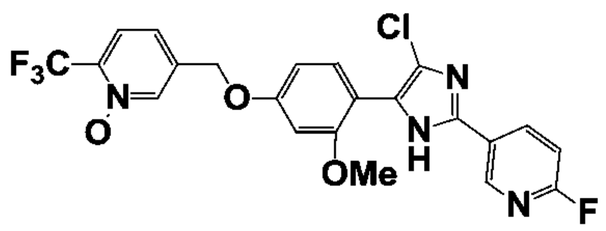
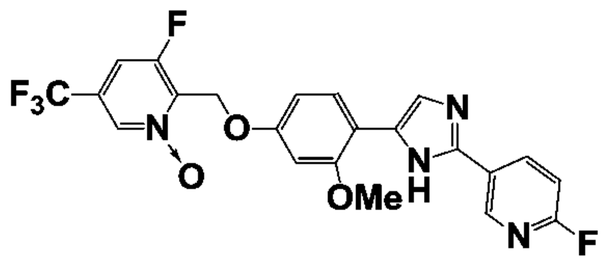
			J = 7.8 Hz, 1H), 8.13 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.51 (d, J = 2.4 Hz, 1H), 8.74-8.90 (m, 1H)
305		134-136	1H-NMR (**CDCL3**) δ 3.52 (s, 3H), 3.85 (s, 3H), 5.23 (s, 2H), 6.60-6.77 (m, 2H), 7.06 (dd, J = 8.8, 3.4 Hz, 1H), 7.31 (d, J = 8.8 Hz, 1H), 7.76 (d, J = 8.8 Hz, 1H), 8.01 (dd, J = 8.8, 1.5 Hz, 1H), 8.18 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.53 (d, J = 2.4 Hz, 1H), 8.76-8.91 (m, 1H)
306		180-182	1H-NMR (**DMSO**) δ 3.73 (s, 3H), 3.79 (s, 3H), 5.36 (s, 2H), 6.72 (dd, J = 8.3, 2.4 Hz, 1H), 6.80 (d, J = 2.4 Hz, 1H), 7.31 (d, J = 8.3 Hz, 1H), 7.68 (d, J = 8.3 Hz, 1H), 7.98 (d, J = 8.3 Hz, 1H), 8.16-8.26 (m, 2H), 8.76 (d, J = 2.4 Hz, 1H), 8.90 (d, J = 1.6 Hz, 1H)
307		149-151	1H-NMR (**DMSO**) δ 3.49 (s, 3H), 3.84 (s, 3H), 5.39 (s, 2H), 6.82 (dd, J = 8.3, 2.0 Hz, 1H), 6.91 (d, J = 2.0 Hz, 1H), 7.27 (d, J = 8.3 Hz, 1H), 7.68 (d, J = 8.3 Hz, 1H), 7.99 (d, J = 8.3 Hz, 1H), 8.17-8.29 (m, 2H), 8.78 (d, J = 2.9 Hz, 1H), 8.92 (s, 1H)
308		114-117	1H-NMR (**CDCL3**) δ 3.73 (s, 3H), 3.85 (s, 3H), 5.31 (s, 2H), 6.60 (dd, J = 8.8, 2.4 Hz, 1H), 6.68 (d, J = 2.4 Hz, 1H), 7.37-7.48 (m, 2H), 7.70 (d, J = 8.3 Hz, 1H), 7.88-8.08 (m, 2H), 8.68 (d, J = 2.0 Hz, 1H), 8.79-8.94 (m, 1H)
309		133-135	1H-NMR (**CDCL3**) δ 3.51 (s, 3H), 3.85 (s, 3H), 5.33 (s, 2H), 6.68 (dd, J = 8.5, 2.4 Hz, 1H), 6.72 (d, J = 2.4 Hz, 1H), 7.19-7.36 (m,

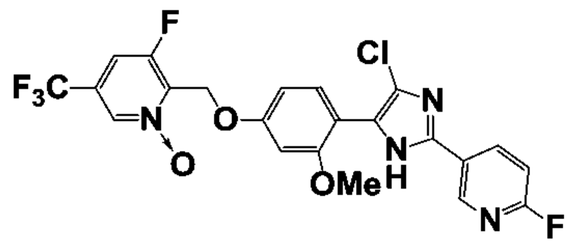
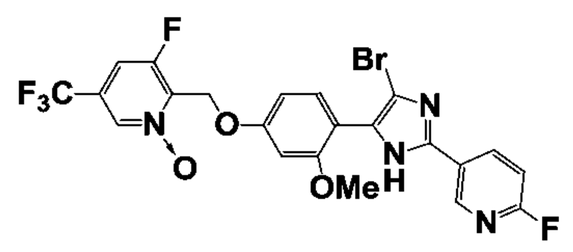
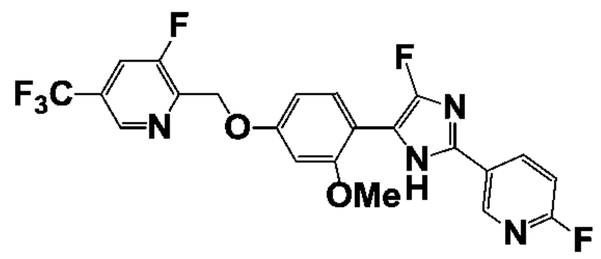
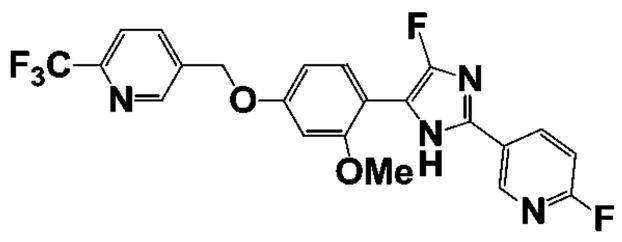
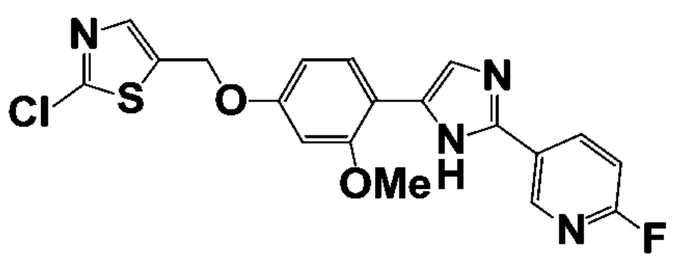
			1H), 7.44 (d, J = 8.5 Hz, 1H), 7.73 (d, J = 8.3 Hz, 1H), 8.01 (dd, J = 8.3, 2.0 Hz, 1H), 8.05 (dd, J = 8.3, 2.4 Hz, 1H), 8.71 (d, J = 2.4 Hz, 1H), 8.87-8.92 (m, 1H)
310		162-165	1H-NMR (**CDCL3**) δ 8.82 (s, 1H), 8.51 (d, J = 2.4 Hz, 1H), 8.13 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.00 (d, J = 7.8 Hz, 1H), 7.73 (d, J = 8.3 Hz, 1H), 7.43 (d, J = 7.8 Hz, 1H), 7.06 (dd, J = 8.3, 2.9 Hz, 1H), 6.75-6.55 (m, 2H), 5.21 (s, 2H), 4.00-3.81 (3H), 3.82-3.66 (3H)
311		138-140	1H-NMR (**DMSO**) δ 3.47 (s, 3H), 3.84 (s, 3H), 5.39 (s, 2H), 6.81 (dd, J = 8.3, 2.4 Hz, 1H), 6.89 (d, J = 2.4 Hz, 1H), 7.27 (d, J = 8.3 Hz, 1H), 7.36 (dd, J = 8.5, 2.7 Hz, 1H), 7.99 (d, J = 8.3 Hz, 1H), 8.22 (d, J = 8.3 Hz, 1H), 8.35 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.61 (d, J = 2.4 Hz, 1H), 8.92 (s, 1H)
312		142-144	1H-NMR (**DMSO**) δ 3.47 (s, 3H), 3.83 (s, 3H), 5.41 (s, 2H), 6.79 (dd, J = 8.3, 2.4 Hz, 1H), 6.91 (d, J = 2.4 Hz, 1H), 7.26 (d, J = 8.3 Hz, 1H), 7.36 (dd, J = 8.5, 2.7 Hz, 1H), 7.83 (d, J = 8.3 Hz, 1H), 8.27-8.42 (m, 2H), 8.60 (d, J = 2.0 Hz, 1H), 9.02 (d, J = 1.0 Hz, 1H)

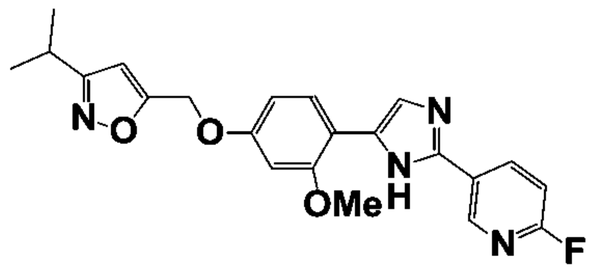
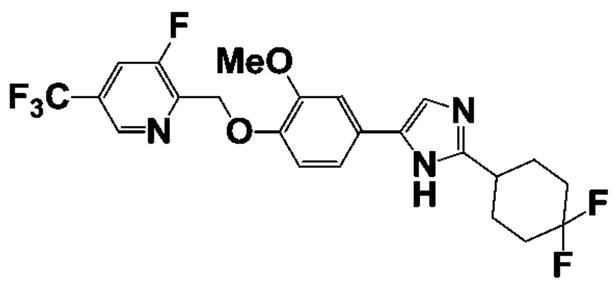
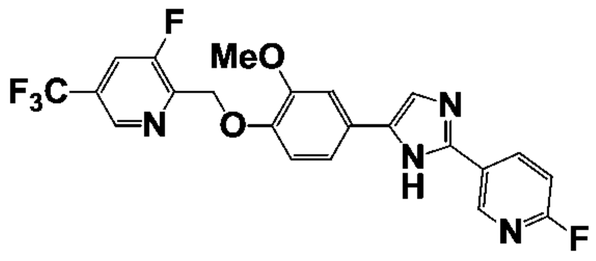
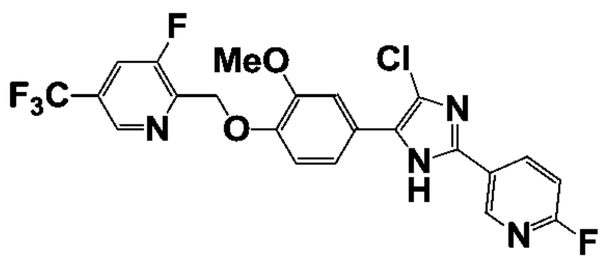
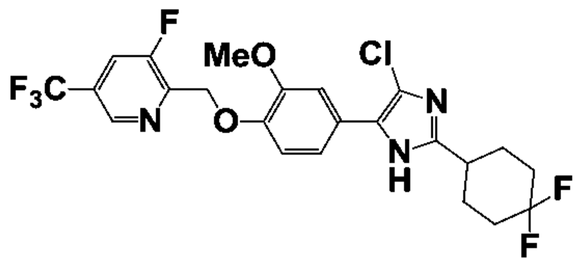
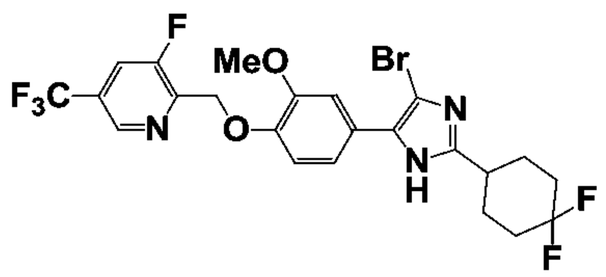
【0144】 [實施例313~405]

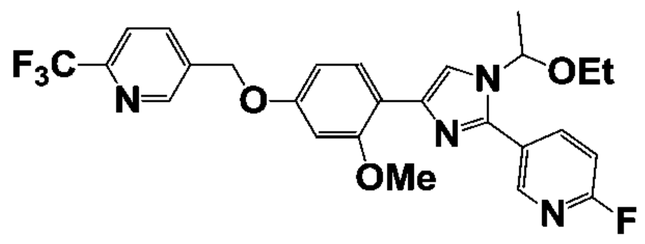
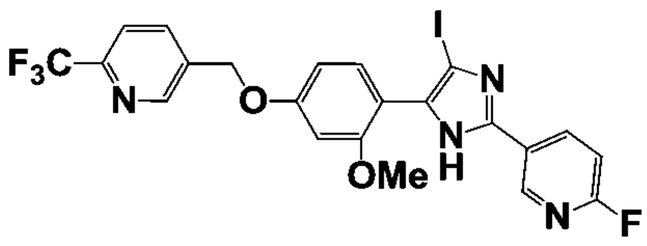
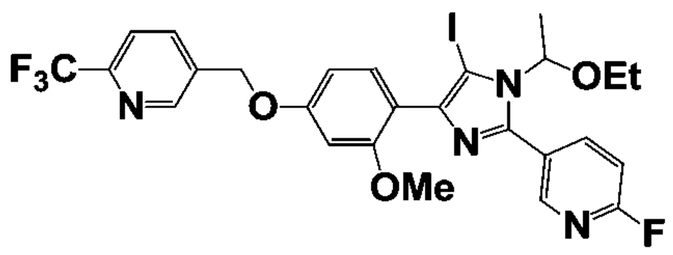
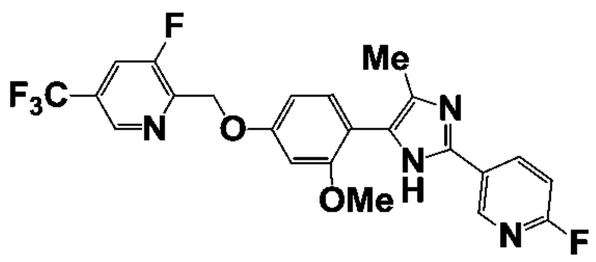
與上述實施例中任一者同樣地製出具有下述表4所示結構及熔點之實施例313~405之化合物。

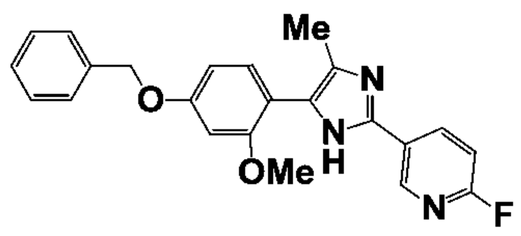
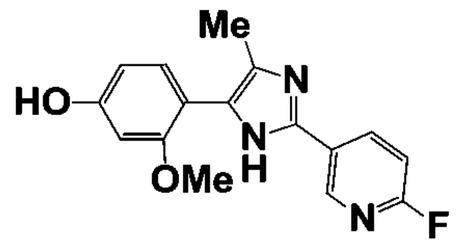
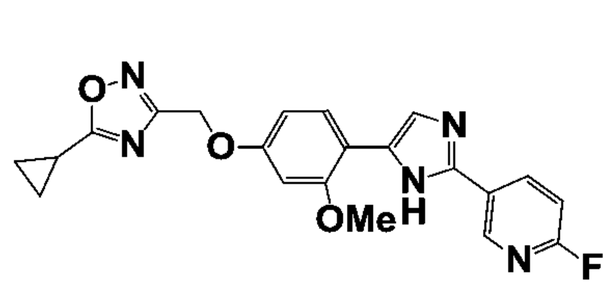
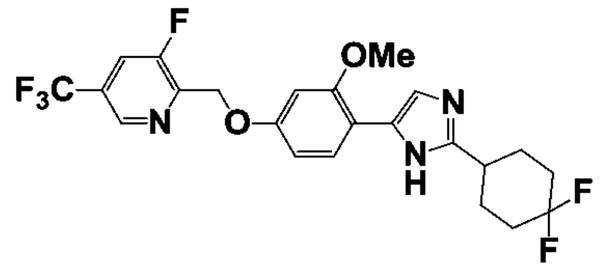
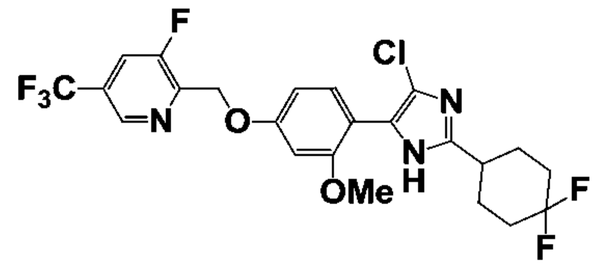
【0145】[表4]

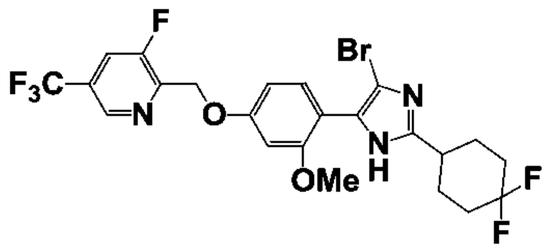
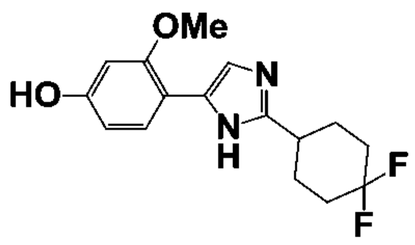
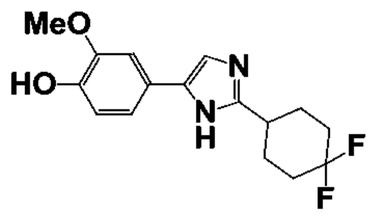
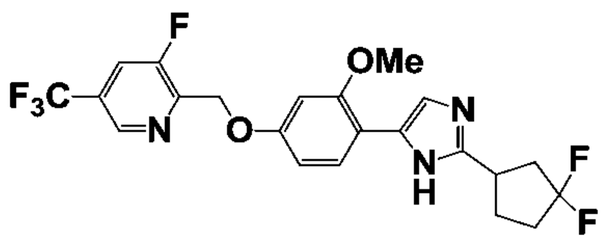
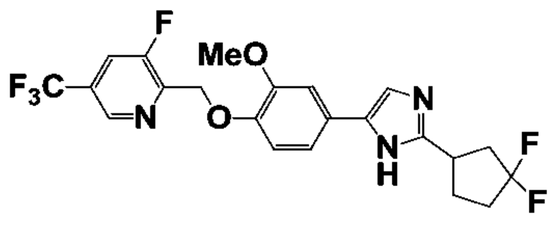
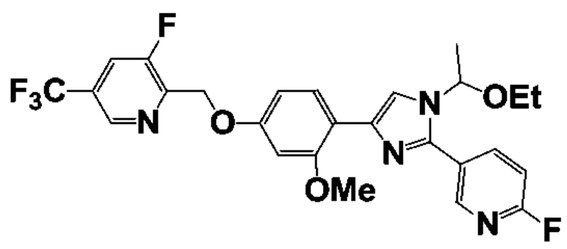
實施例 No.	結構	熔點(°C)	1H-NMR(δ:ppm)
313		209-214 (分解)	1H-NMR (**DMSO**) δ 6.47 (dd, J = 8.3, 2.4 Hz, 1H), 6.53 (d, J = 2.4 Hz, 1H), 7.20 (d, J = 8.3 Hz, 1H), 7.29 (dd, J = 8.5, 2.7 Hz, 1H), 8.43 (ddd, J = 8.5, 8.5, 2.6 Hz, 1H), 8.75 (d, J = 2.6 Hz, 1H), 9.85 (s, 1H), 12.86 (s, 1H)
314		235-239	1H-NMR (**DMSO**) δ 3.91 (s, 3H), 5.24 (s, 2H), 6.71 (dd, J = 8.5, 1.8 Hz, 1H), 6.78 (d, J = 1.8 Hz, 1H), 7.30 (dd, J = 8.5, 2.6 Hz, 1H), 7.44-7.69 (m, 2H), 7.98 (d, J = 8.5 Hz, 1H), 8.09 (s, 1H), 8.50 (ddd, J = 8.5, 8.5, 2.3 Hz, 1H), 8.57 (s, 1H), 8.82 (d, J = 2.3 Hz, 1H)
315		>250	1H-NMR (**DMSO**) δ 3.82 (s, 3H), 5.30 (s, 2H), 6.75 (dd, J = 8.5, 2.3 Hz, 1H), 6.86 (d, J = 2.3 Hz, 1H), 7.30 (dd, J = 8.8, 2.6 Hz, 1H), 7.37 (d, J = 8.5 Hz, 1H), 7.59 (d, J = 8.5 Hz, 1H), 8.00 (d, J = 8.5 Hz, 1H), 8.44 (ddd, J = 8.8, 8.8, 2.3 Hz, 1H), 8.58 (s, 1H), 8.76 (d, J = 2.3 Hz, 1H)
316		162-167	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.36 (s, 2H), 6.63-6.87 (m, 2H), 7.30 (dd, J = 8.5, 2.7 Hz, 1H), 7.57 (s, 1H), 7.91-8.20 (m, 2H), 8.51 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.82 (d, J = 2.4 Hz, 1H), 8.90 (s, 1H), 12.71 (s, 1H)

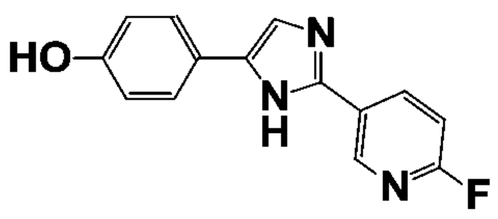
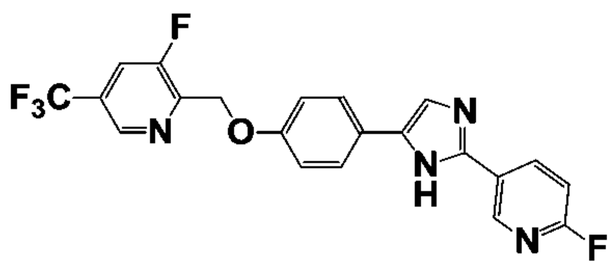
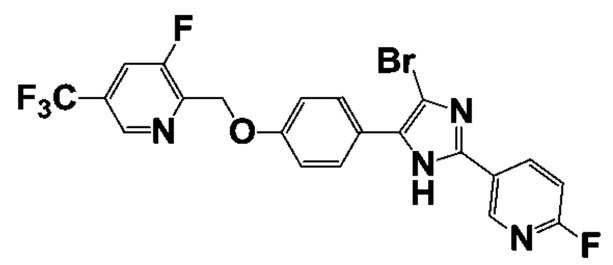
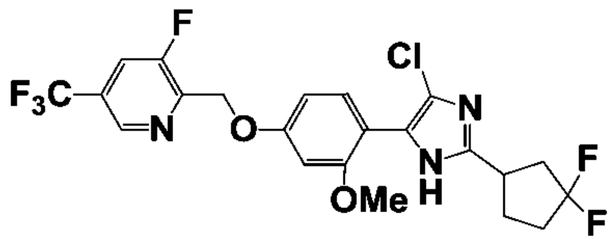
317		105-110	1H-NMR (**CDCL3**) δ 3.83 (s, 3H), 5.38 (s, 2H), 6.54-6.74 (m, 2H), 6.94 (dd, J = 8.6, 2.8 Hz, 1H), 7.32 (d, J = 8.8 Hz, 1H), 7.76 (d, J = 8.8 Hz, 1H), 8.16-8.32 (m, 1H), 8.38 (s, 1H), 8.59 (d, J = 2.6 Hz, 1H), 11.03 (s, 1H)
318		105-120	1H-NMR (**CDCL3**) δ 3.87 (s, 3H), 5.42 (s, 2H), 6.60-6.79 (m, 2H), 6.98 (dd, J = 8.5, 2.6 Hz, 1H), 7.32 (d, J = 8.5 Hz, 1H), 7.87 (d, J = 8.5 Hz, 1H), 8.21-8.36 (m, 1H), 8.41 (s, 1H), 8.60 (d, J = 2.6 Hz, 1H), 10.77 (s, 1H)
319		156-158	1H-NMR (**CDCL3**) δ 4.00 (s, 3H), 5.36 (s, 2H), 6.68-6.82 (m, 2H), 7.02 (dd, J = 8.8, 2.9 Hz, 1H), 7.64-7.84 (m, 2H), 8.23 (ddd, J = 8.8, 8.8, 2.0 Hz, 1H), 8.56 (d, J = 2.0 Hz, 1H), 8.76 (s, 1H), 10.39 (s, 1H)
320		194-196	1H-NMR (**DMSO**) δ 3.84 (s, 3H), 5.36 (s, 2H), 6.77 (dd, J = 8.5, 2.4 Hz, 1H), 6.84 (d, J = 2.4 Hz, 1H), 7.29 (dd, J = 8.3, 2.4 Hz, 1H), 7.36 (d, J = 8.3 Hz, 1H), 7.97 (d, J = 8.3 Hz, 1H), 8.19 (d, J = 8.5 Hz, 1H), 8.42 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.74 (d, J = 2.4 Hz, 1H), 8.90 (s, 1H), 12.56 (s, 1H)
321		109-116	1H-NMR (**DMSO**) δ 3.90 (s, 3H), 5.37 (s, 2H), 6.63-6.88 (m, 2H), 7.30 (dd, J = 8.3, 2.4 Hz, 1H), 7.58 (s, 1H), 7.81 (s, 1H), 8.00-8.17 (m, 1H), 8.41-8.60 (m, 1H), 8.82 (s, 1H), 12.72 (s, 1H)

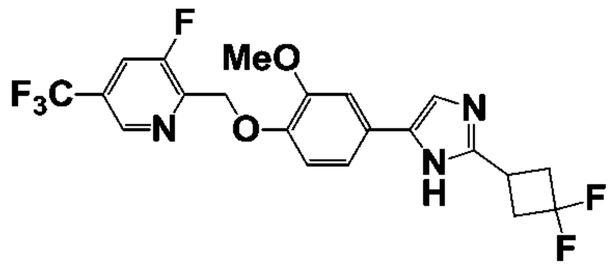
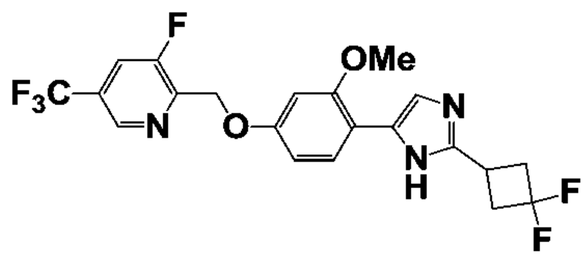
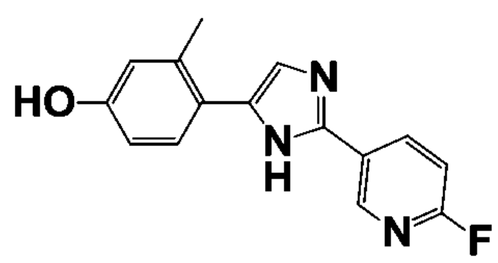
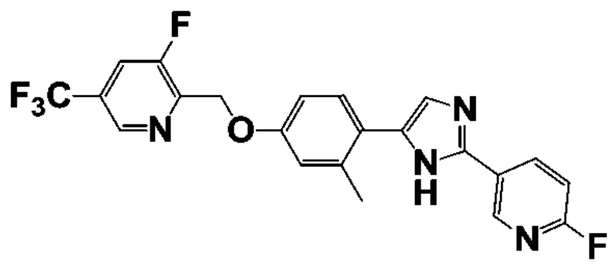
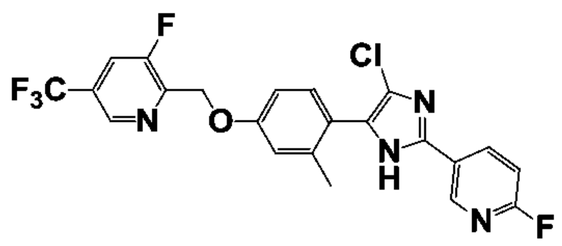
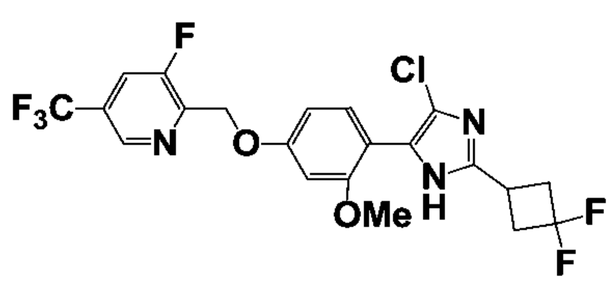
322		227-232	1H-NMR (**CDCL3**) δ 1.30 (d, J = 7.3 Hz, 6H), 3.00-3.16 (m, 1H), 3.99 (s, 3H), 5.16 (s, 2H), 6.24 (s, 1H), 6.58-6.74 (m, 2H), 7.03 (dd, J = 8.8, 2.9 Hz, 1H), 7.36-7.79 (m, 2H), 8.26-8.44 (m, 1H), 8.62 (s, 1H)
323		157-159	1H-NMR (**CDCL3**) δ 1.75-2.34 (m, 8H), 2.80-3.02 (m, 1H), 3.90 (s, 3H), 5.36 (s, 2H), 6.91-7.46 (m, 4H), 7.66 (d, J = 8.8 Hz, 1H), 8.72 (s, 1H), 9.04 (s, 1H)
324			1H-NMR (**CDCL3**) δ 3.90 (s, 3H), 5.37 (s, 2H), 6.91-7.12 (m, 2H), 7.18-7.58 (m, 3H), 7.66 (dd, J = 9.0, 1.2 Hz, 1H), 8.28-8.48 (m, 1H), 8.65 (d, J = 2.4 Hz, 1H), 8.70 (d, J = 1.2 Hz, 1H), 10.13 (s, 1H)
325		165-170	1H-NMR (**DMSO**) δ 3.82 (s, 3H), 5.37 (s, 2H), 7.23 (d, J = 8.3 Hz, 1H), 7.28-7.46 (m, 3H), 8.41 (d, J = 9.3 Hz, 1H), 8.49 (ddd, J = 8.3, 8.3, 2.3 Hz, 1H), 8.81 (d, J = 2.3 Hz, 1H), 8.89 (s, 1H), 13.00 (s, 1H)
326		173-176	1H-NMR (**CDCL3**) δ 1.73-2.32 (m, 8H), 2.69-2.91 (m, 1H), 3.86 (s, 3H), 5.37 (s, 2H), 6.97-7.17 (m, 2H), 7.14-7.26 (m, 1H), 7.68 (d, J = 8.8 Hz, 1H), 8.72 (s, 1H), 9.46 (s, 1H)
327		203-204	1H-NMR (**CDCL3**) δ 1.72-2.34 (m, 8H), 2.71-2.92 (m, 1H), 3.88 (s, 3H), 5.38 (s, 2H), 6.96-7.16 (m, 2H), 7.16-7.26 (m, 1H), 7.69 (dd, J = 9.3, 2.0 Hz, 1H), 8.72 (d, J = 2.0 Hz, 1H), 9.28 (s, 1H)

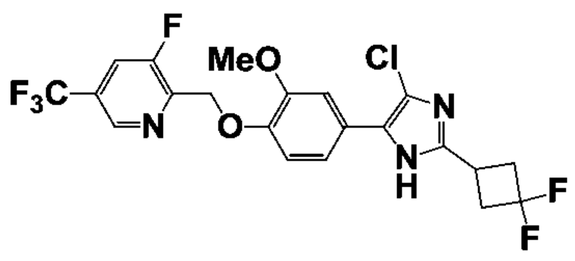
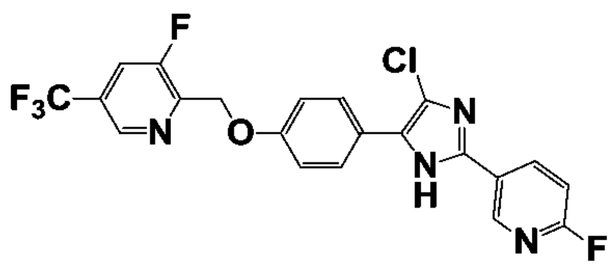
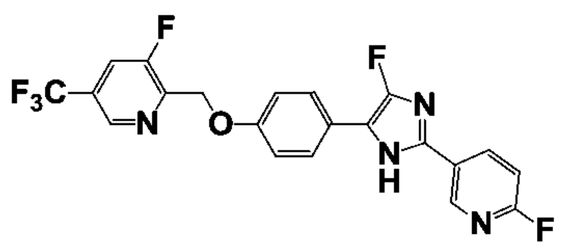
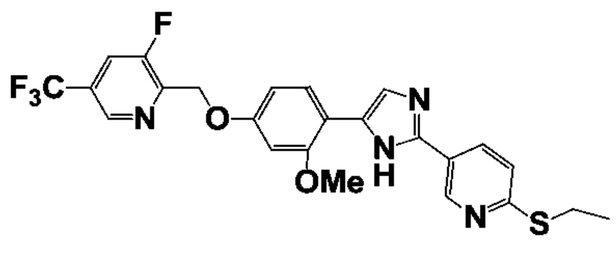
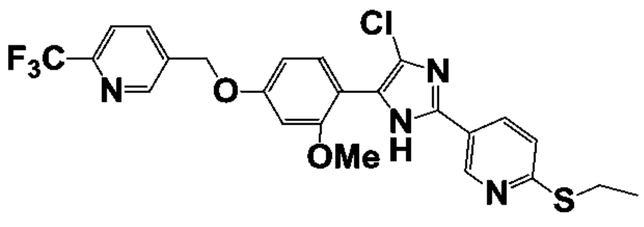
328		102-104	1H-NMR (**CDCL3**) δ 1.12 (t, J = 7.0 Hz, 3H), 1.72 (d, J = 5.9 Hz, 3H), 3.12-3.40 (m, 2H), 3.96 (s, 3H), 5.20 (s, 2H), 5.40 (q, J = 5.9 Hz, 1H), 6.54-6.73 (m, 2H), 7.07 (dd, J = 8.3, 3.1 Hz, 1H), 7.63-7.81 (m, 2H), 7.92-8.04 (m, 1H), 8.04-8.14 (m, 1H), 8.20 (d, J = 8.4 Hz, 1H), 8.46 (d, J = 2.3 Hz, 1H), 8.81 (s, 1H)
329		195-198	1H-NMR (**CDCL3**) δ 3.79 (s, 3H), 5.17 (s, 2H), 6.48-6.68 (m, 2H), 6.97 (dd, J = 8.6, 2.5 Hz, 1H), 7.49 (d, J = 8.2 Hz, 1H), 7.71 (d, J = 8.2 Hz, 1H), 7.98 (dd, J = 8.2, 1.6 Hz, 1H), 8.24-8.43 (m, 1H), 8.53 (d, J = 2.0 Hz, 1H), 8.74 (d, J = 1.6 Hz, 1H)
330		129-131	1H-NMR (**DMSO**) δ 0.94 (t, J = 7.0 Hz, 3H), 1.30 (d, J = 6.2 Hz, 3H), 3.32-3.46 (m, 2H), 3.76 (s, 3H), 5.07 (q, J = 6.2 Hz, 1H), 5.37 (s, 2H), 6.81 (dd, J = 8.5, 2.3 Hz, 1H), 6.85 (d, J = 2.3 Hz, 1H), 7.20 (d, J = 8.4 Hz, 1H), 7.32 (dd, J = 8.6, 2.8 Hz, 1H), 7.98 (d, J = 8.4 Hz, 1H), 8.22 (d, J = 8.5 Hz, 1H), 8.32 (ddd, J = 8.6, 8.6, 2.5 Hz, 1H), 8.52 (d, J = 2.5 Hz, 1H), 8.91 (s, 1H)
331		100-105	1H-NMR (**CDCL3**) δ 2.44 (s, 3H), 3.90 (s, 3H), 5.36 (s, 2H), 6.62-6.82 (m, 2H), 6.99 (dd, J = 8.3, 2.4 Hz, 1H), 7.41 (d, J = 8.8 Hz, 1H), 7.73 (dd, J = 9.2, 1.6 Hz, 1H), 8.30 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H),

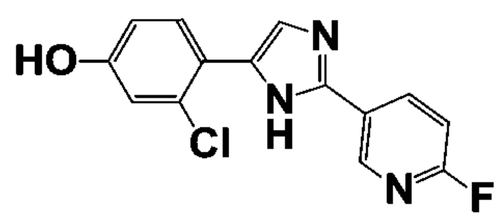
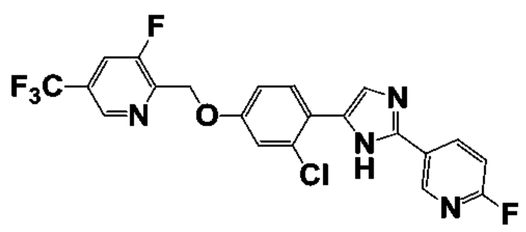
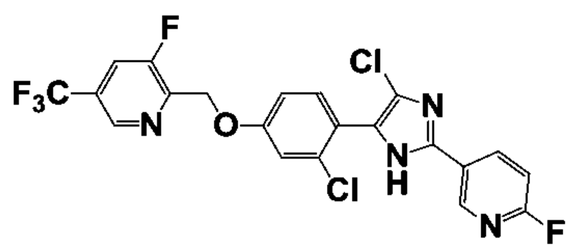
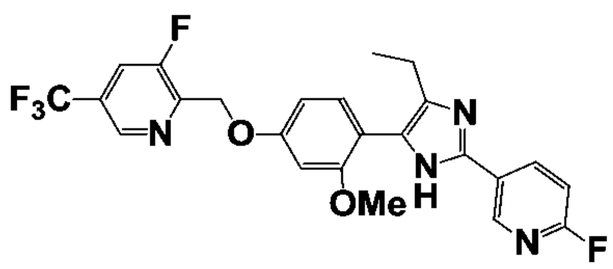
			8.57 (d, J = 2.4 Hz, 1H), 8.76 (d, J = 1.6 Hz, 1H), 10.12 (s, 1H)
332		169-171	1H-NMR (**CDCL3**) δ 2.43 (s, 3H), 3.87 (s, 3H), 5.10 (s, 2H), 6.54-6.76 (m, 2H), 6.97 (dd, J = 8.4, 2.0 Hz, 1H), 7.29-7.54 (m, 6H), 8.29 (ddd, J = 8.4, 8.4, 2.4 Hz, 1H), 8.57 (d, J = 2.4 Hz, 1H), 10.24 (s, 1H)
333		154-159	1H-NMR (**DMSO**) δ 2.09 (s, 3H), 3.72 (s, 3H), 6.32-6.60 (m, 2H), 7.00-7.20 (m, 1H), 7.24 (dd, J = 8.8, 2.4 Hz, 1H), 8.30-8.52 (m, 1H), 8.72 (s, 1H), 12.24 (s, 1H)
334		153-158	1H-NMR (**CDCL3**) δ 1.18-1.35 (m, 4H), 2.15-2.33 (m, 1H), 3.99 (s, 3H), 5.16 (s, 2H), 6.61-6.81 (m, 2H), 7.03 (dd, J = 8.8, 2.9 Hz, 1H), 7.45 (s, 1H), 7.52-7.69 (m, 1H), 8.25-8.42 (m, 1H), 8.62 (s, 1H), 10.53 (s, 1H)
335		105-110	1H-NMR (**CDCL3**) δ 1.79-2.35 (m, 8H), 2.81-3.01 (m, 1H), 3.92 (s, 3H), 5.34 (s, 2H), 6.59-6.78 (m, 2H), 7.27-7.37 (m, 1H), 7.53-7.84 (m, 2H), 8.75 (s, 1H)
336		172-174	1H-NMR (**CDCL3**) δ 1.72-2.32 (m, 8H), 2.73-2.93 (m, 1H), 3.91 (s, 3H), 5.35 (s, 2H), 6.63-6.81 (m, 2H), 7.72 (dd, J = 8.8, 1.5 Hz, 1H), 7.96 (d, J = 8.3 Hz, 1H), 8.76 (d, J = 1.5 Hz, 1H), 9.82 (s, 1H)

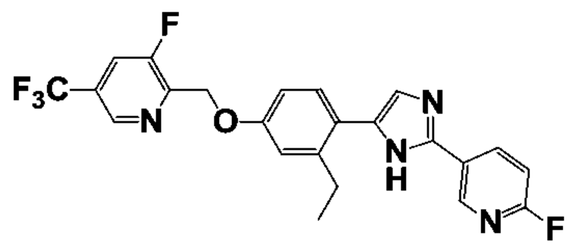
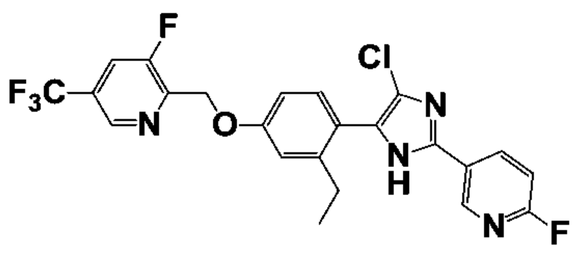
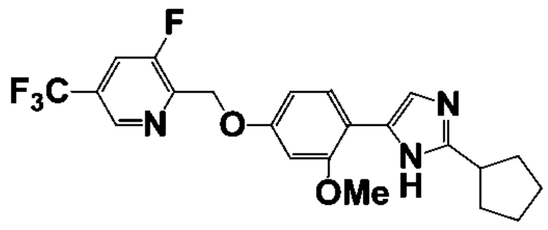
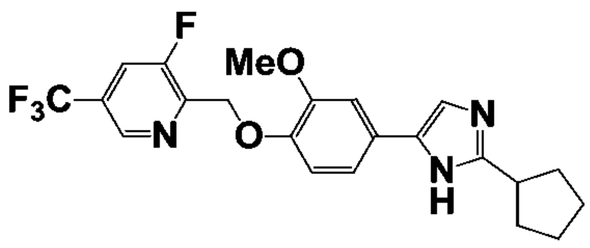
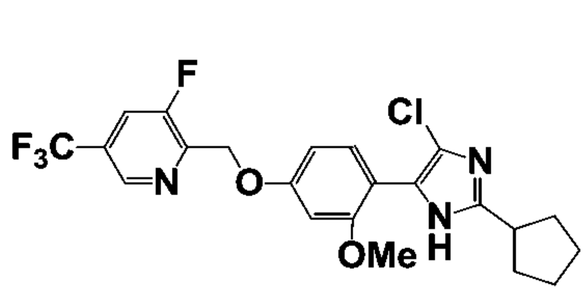
337		190-191	1H-NMR (**CDCL3**) δ 1.71-2.32 (m, 8H), 2.74-2.94 (m, 1H), 3.88 (s, 3H), 5.35 (s, 2H), 6.62-6.81 (m, 2H), 7.72 (dd, J = 8.8, 1.5 Hz, 1H), 7.95 (d, J = 8.8 Hz, 1H), 8.76 (d, J = 1.5 Hz, 1H), 9.75 (s, 1H)
338		油狀	1H-NMR (**DMSO**) δ 1.67-2.22 (m, 8H), 2.75-2.97 (m, 1H), 3.79 (s, 3H), 6.28-6.54 (m, 2H), 7.28 (s, 1H), 7.80 (dd, J = 8.4, 1.2 Hz, 1H), 9.30 (s, 1H), 11.62 (s, 1H)
339		131-136	1H-NMR (**DMSO**) d 1.66-2.21 (m, 8H), 2.75-2.96 (m, 1H), 3.78 (s, 3H), 6.70 (d, J = 8.3 Hz, 1H), 7.12 (dd, J = 8.3, 1.7 Hz, 1H), 7.26 (d, J = 1.7 Hz, 1H), 7.31 (s, 1H), 8.75 (s, 1H), 11.71 (s, 1H)
340		油狀	1H-NMR (**CDCL3**) d 2.02-2.70 (m, 6H), 3.40-3.61 (m, 1H), 3.92 (s, 3H), 5.36 (s, 2H), 6.59-6.78 (m, 2H), 7.26-7.38 (m, 1H), 7.50-7.82 (m, 2H), 8.75 (s, 1H)
341		油狀	1H-NMR (**CDCL3**) δ 2.00-2.69 (m, 6H), 3.38-3.60 (m, 1H), 3.91 (s, 3H), 5.36 (s, 2H), 7.00 (d, J = 8.3 Hz, 1H), 7.10-7.19 (m, 2H), 7.28 (s, 1H), 7.66 (dd, J = 8.8, 1.5 Hz, 1H), 8.72 (d, J = 1.5 Hz, 1H)
342		117-119	1H-NMR (**CDCL3**) δ 1.11 (t, J = 7.1 Hz, 3H), 1.71 (d, J = 6.0 Hz, 3H), 3.11-3.38 (m, 2H), 3.93 (s, 3H), 5.34 (s, 2H), 5.39 (q, J = 6.0 Hz, 1H), 6.60-6.80 (m, 2H), 7.06 (dd, J = 8.3, 2.9 Hz, 1H), 7.69 (dd, J = 9.3, 1.5

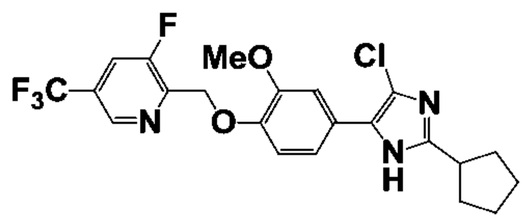
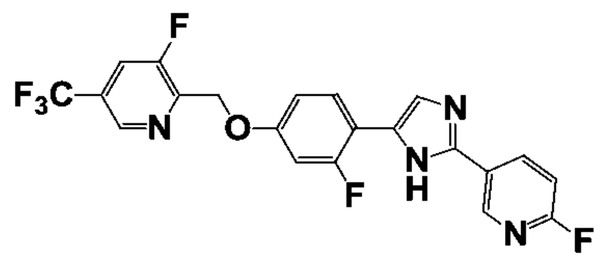
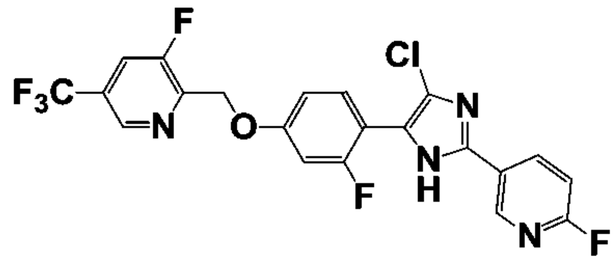
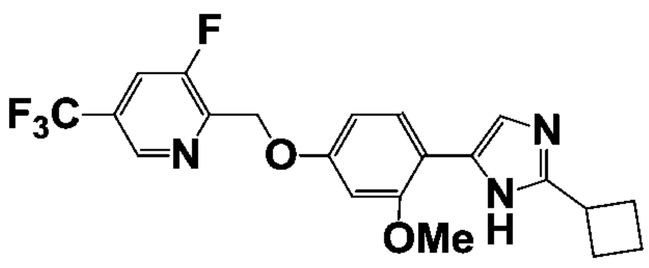
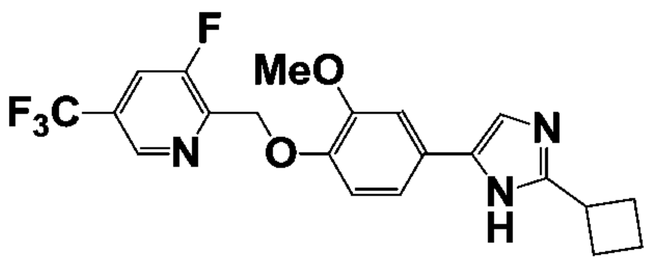
			Hz, 1H), 7.72 (s, 1H), 8.09 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.16 (d, J = 8.8 Hz, 1H), 8.45 (d, J = 2.4 Hz, 1H), 8.74 (d, J = 1.5 Hz, 1H)
343		>270	1H-NMR (**DMSO**) δ 6.76 (d, J = 8.8 Hz, 2H), 7.29 (dd, J = 8.8, 2.9 Hz, 1H), 7.49-7.77 (m, 3H), 8.37-8.60 (m, 1H), 8.78 (d, J = 2.0 Hz, 1H), 9.34 (s, 1H), 12.70 (s, 1H)
344		174-177	1H-NMR (**CDCL3**) δ 5.34 (s, 2H), 6.93-7.17 (m, 3H), 7.33 (s, 1H), 7.59-7.82 (m, 3H), 8.28-8.47 (m, 1H), 8.63 (d, J = 2.4 Hz, 1H), 8.74 (s, 1H)
345		155-158	1H-NMR (**DMSO**) δ 5.42 (s, 2H), 7.19 (d, J = 8.8 Hz, 2H), 7.32 (dd, J = 8.8, 2.0 Hz, 1H), 7.72 (d, J = 8.8 Hz, 2H), 8.41 (d, J = 9.8 Hz, 1H), 8.48 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.80 (d, J = 2.4 Hz, 1H), 8.89 (s, 1H), 13.06 (s, 1H)
346		147-149	1H-NMR (**CDCL3**) δ 1.98-2.67 (m, 6H), 3.33-3.54 (m, 1H), 3.91 (s, 3H), 5.35 (s, 2H), 6.63-6.81 (m, 2H), 7.72 (dd, J = 8.8, 1.5 Hz, 1H), 7.98 (d, J = 8.8 Hz, 1H), 8.76 (d, J = 1.5 Hz, 1H), 9.95 (s, 1H)
347		142-147	1H-NMR (**CDCL3**) δ 2.01-2.62 (m, 6H), 3.28-3.49 (m, 1H), 3.87 (s, 3H), 5.38 (s, 2H), 6.97-7.15 (m, 2H), 7.22 (s, 1H), 7.68 (dd, J = 8.8, 1.6 Hz, 1H), 8.72 (d, J = 1.6 Hz, 1H), 9.33 (s, 1H)

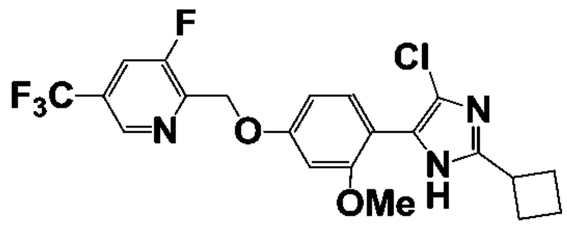
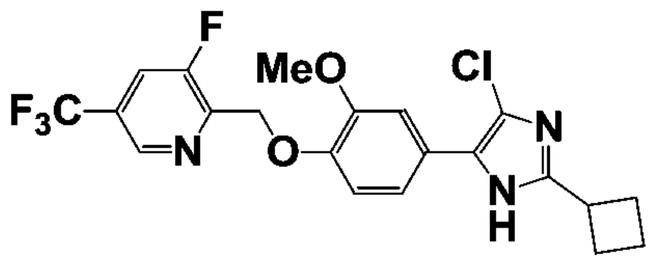
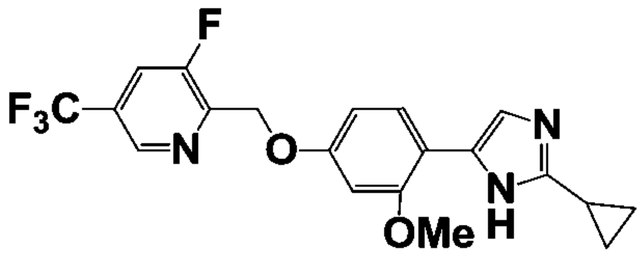
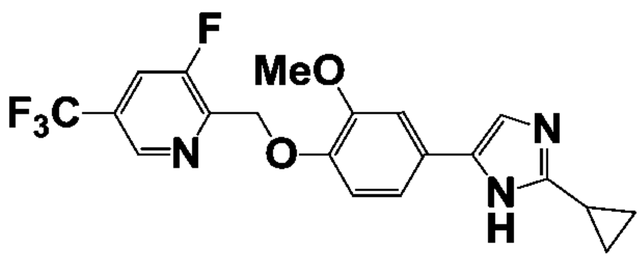
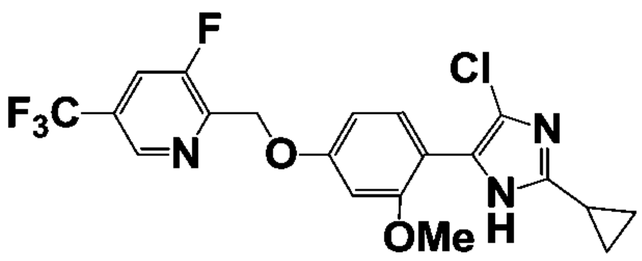
348		105-110	1H-NMR (**CDCL3**) δ 2.85-3.17 (m, 4H), 3.42-3.67 (m, 1H), 3.90 (s, 3H), 5.36 (s, 2H), 7.00 (d, J = 8.3 Hz, 1H), 7.12-7.23 (m, 2H), 7.33 (d, J = 2.0 Hz, 1H), 7.66 (dd, J = 9.0, 1.7 Hz, 1H), 8.71 (s, 1H)
349		70-75	1H-NMR (**CDCL3**) δ 2.86-3.12 (m, 4H), 3.38-3.47 (m, 1H), 3.93 (s, 3H), 5.34 (s, 2H), 6.63-6.75 (m, 2H), 7.27-7.38 (m, 1H), 7.49-7.80 (m, 2H), 8.75 (s, 1H)
350		218-220	1H-NMR (**DMSO**) δ 2.38 (s, 3H), 6.53-6.83 (m, 2H), 7.19-7.40 (m, 2H), 7.61 (s, 1H), 8.41-8.56 (m, 1H), 8.80 (s, 1H), 12.73 (s, 1H)
351		216-222	1H-NMR (**CDCL3**) δ 2.44 (s, 3H), 5.33 (s, 2H), 6.90 (dd, J = 8.3, 2.9 Hz, 1H), 6.93 (d, J = 2.9 Hz, 1H), 7.00 (dd, J = 8.3, 2.9 Hz, 1H), 7.16 (s, 1H), 7.42-7.63 (m, 1H), 7.70 (dd, J = 8.8, 1.5 Hz, 1H), 8.35 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.62 (d, J = 2.4 Hz, 1H), 8.74 (d, J = 1.5 Hz, 1H)
352		204-206	1H-NMR (**CDCL3**) δ 2.25 (s, 3H), 5.27 (s, 2H), 6.80 (d, J = 8.3 Hz, 1H), 6.87 (s, 1H), 6.95 (d, J = 8.3 Hz, 1H), 7.19 (d, J = 8.3 Hz, 1H), 7.71 (d, J = 8.8 Hz, 1H), 8.17-8.37 (m, 1H), 8.56 (s, 1H), 8.69 (s, 1H), 11.26 (s, 1H)
353		167-169	1H-NMR (**CDCL3**) δ 2.82-3.09 (m, 4H), 3.25-3.54 (m, 1H), 3.91 (s, 3H), 5.34 (s, 2H), 6.60-6.80 (m, 2H), 7.71 (d, J =

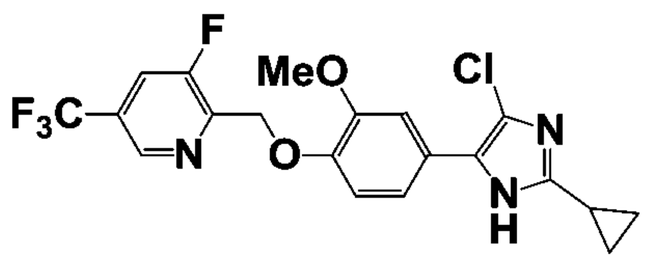
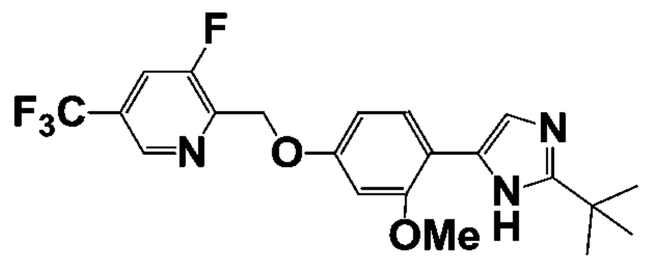
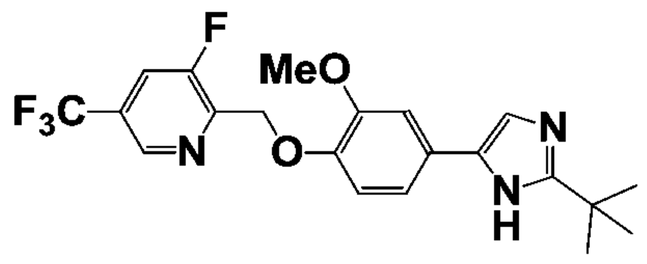
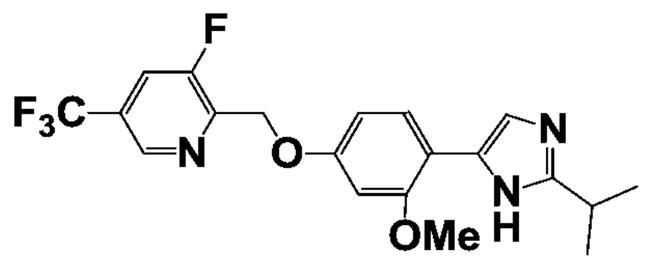
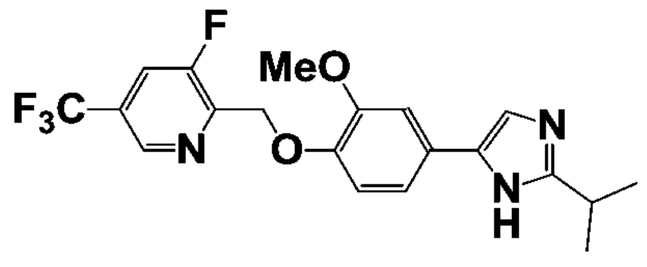
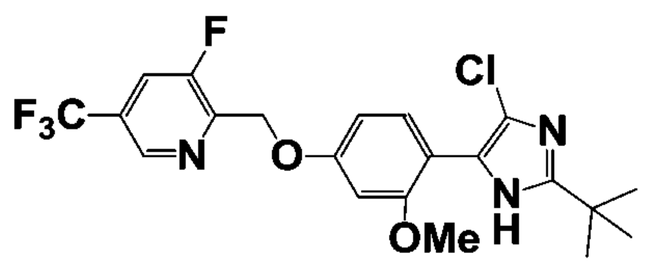
			8.8 Hz, 1H), 7.98 (d, J = 8.3 Hz, 1H), 8.74 (s, 1H), 10.00 (s, 1H)
354		159-161	1H-NMR (**CDCL3**) δ 2.85-3.06 (m, 4H), 3.26-3.43 (m, 1H), 3.85 (s, 3H), 5.37 (s, 2H), 6.95-7.16 (m, 2H), 7.13-7.26 (m, 1H), 7.68 (dd, J = 8.2, 1.6 Hz, 1H), 8.71 (d, J = 1.6 Hz, 1H), 9.56 (s, 1H)
355		180-183	1H-NMR (**CDCL3**) δ 5.33 (s, 2H), 6.99 (dd, J = 8.8, 2.9 Hz, 1H), 7.06 (d, J = 8.8 Hz, 2H), 7.60 (d, J = 8.8 Hz, 2H), 7.72 (d, J = 8.8 Hz, 1H), 8.29 (ddd, J = 8.8, 8.8, 2.0 Hz, 1H), 8.59 (d, J = 2.0 Hz, 1H), 8.73 (s, 1H)
356		222-227	1H-NMR (**DMSO**) δ 5.39 (s, 2H), 7.18 (d, J = 9.1 Hz, 2H), 7.33 (dd, J = 8.7, 2.9 Hz, 1H), 7.62 (d, J = 9.1 Hz, 2H), 8.41 (dd, J = 10.0, 1.2 Hz, 1H), 8.46 (ddd, J = 8.7, 8.7, 2.5 Hz, 1H), 8.78 (d, J = 2.5 Hz, 1H), 8.89 (d, J = 1.2 Hz, 1H), 12.77 (s, 1H)
357		145-149	1H-NMR (**CDCL3**) δ 1.39 (t, J = 7.3 Hz, 3H), 3.04 (q, J = 7.3 Hz, 2H), 3.95 (s, 3H), 5.34 (s, 2H), 6.69 (dd, J = 8.5, 2.2 Hz, 1H), 6.72 (s, 1H), 6.90-7.09 (m, 1H), 7.46 (s, 1H), 7.59-7.78 (m, 1H), 7.78-7.90 (m, 1H), 8.23-8.43 (m, 1H), 8.61 (d, J = 2.4 Hz, 1H), 8.65 (d, J = 1.2 Hz, 1H)
358		160-163	1H-NMR (**DMSO**) δ 1.30 (t, J = 7.3 Hz, 3H), 3.15 (q, J = 7.3 Hz, 2H), 3.81 (s, 3H), 5.37 (s, 2H), 6.76 (dd, J = 8.8, 2.4

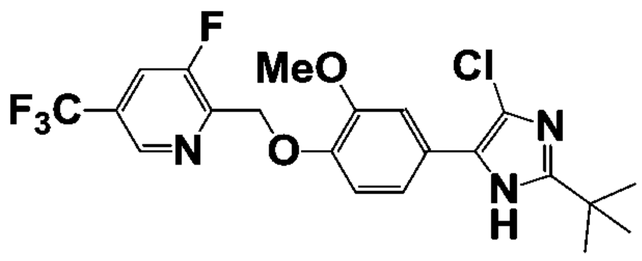
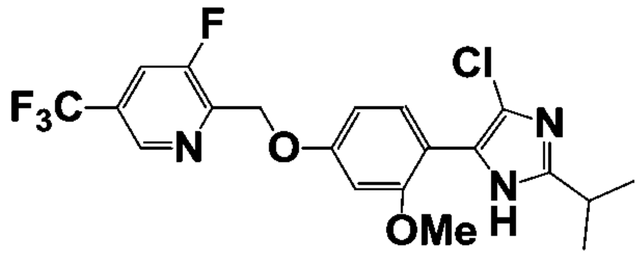
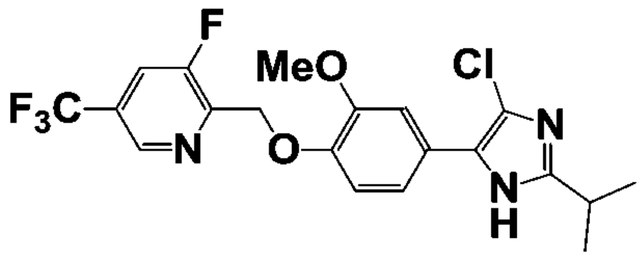
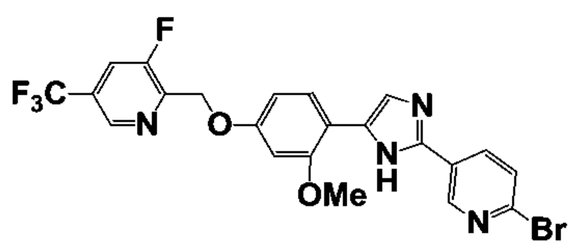
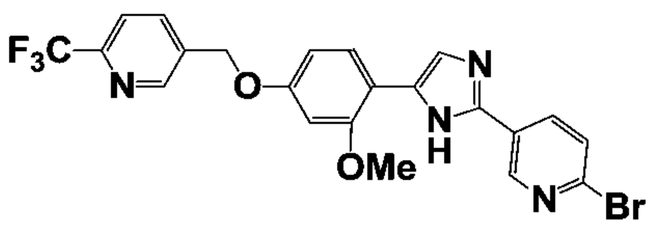
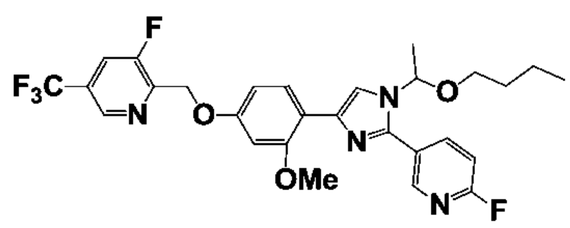
			Hz, 1H), 6.84 (d, J = 2.4 Hz, 1H), 7.27-7.45 (m, 2H), 7.97 (d, J = 8.3 Hz, 1H), 8.09 (dd, J = 8.3, 2.4 Hz, 1H), 8.19 (dd, J = 8.0, 1.2 Hz, 1H), 8.89 (d, J = 1.2 Hz, 1H), 8.94 (d, J = 2.4 Hz, 1H), 12.82 (s, 1H)
359		223-225	1H-NMR (**DMSO**) δ 6.74-6.97 (m, 2H), 7.31 (dd, J = 8.5, 2.7 Hz, 1H), 7.72 (s, 1H), 7.96 (d, J = 8.8 Hz, 1H), 8.49 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.81 (d, J = 2.4 Hz, 1H), 9.88 (s, 1H), 12.86 (s, 1H)
360		169-171	1H-NMR (**DMSO**) δ 5.42 (s, 2H), 7.11 (dd, J = 8.8, 2.4 Hz, 1H), 7.23 (d, J = 2.4 Hz, 1H), 7.31 (dd, J = 8.5, 2.7 Hz, 1H), 7.74 (s, 1H), 8.03 (d, J = 8.8 Hz, 1H), 8.41 (dd, J = 9.8, 1.5 Hz, 1H), 8.51 (ddd, J = 8.5, 8.5, 2.4 Hz, 1H), 8.82 (d, J = 2.4 Hz, 1H), 8.89 (d, J = 1.5 Hz, 1H)
361		158-160	1H-NMR (**DMSO**) δ 5.48 (s, 2H), 7.16 (dd, J = 8.8, 2.4 Hz, 1H), 7.32 (dd, J = 8.8, 2.4 Hz, 1H), 7.37 (d, J = 2.4 Hz, 1H), 7.49 (d, J = 8.8 Hz, 1H), 8.33-8.54 (m, 2H), 8.75 (d, J = 2.4 Hz, 1H), 8.90 (s, 1H), 13.23 (s, 1H)
362		油狀	1H-NMR (**CDCL3**) δ 1.31 (t, J = 7.6 Hz, 3H), 2.75 (q, J = 7.6 Hz, 2H), 3.87 (s, 3H), 5.35 (s, 2H), 6.64-6.80 (m, 2H), 6.98 (dd, J = 8.5, 2.7 Hz, 1H), 7.37 (d, J = 8.8 Hz, 1H), 7.72 (dd, J = 7.3, 1.6 Hz, 1H), 8.32 (ddd, J = 8.5, 8.5, 2.0 Hz, 1H), 8.57 (d, J = 2.0 Hz, 1H), 8.76 (d, J = 1.6 Hz, 1H)

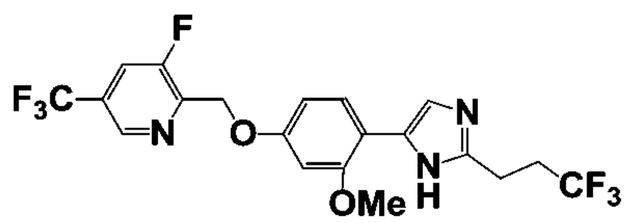
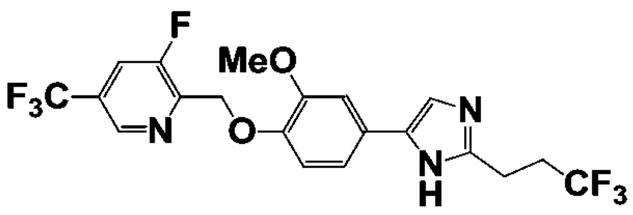
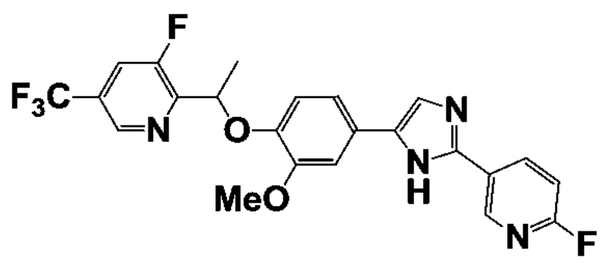
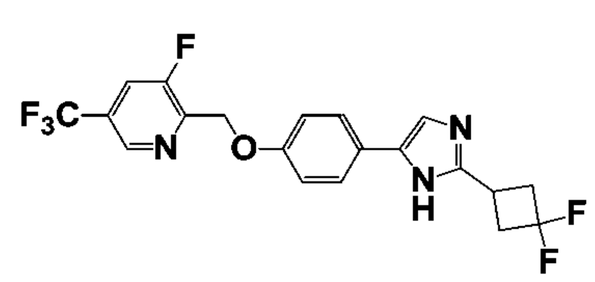
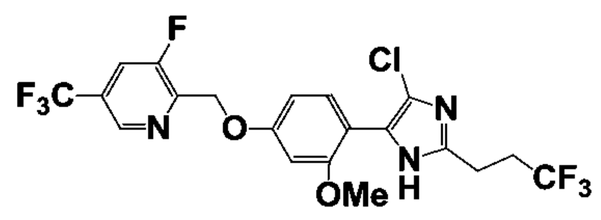
363		115-117	1H-NMR (**DMSO**) δ 1.14 (t, J = 7.6 Hz, 3H), 2.70-2.94 (m, 2H), 5.36 (s, 2H), 6.81-7.12 (m, 2H), 7.17-7.44 (m, 2H), 7.44-7.69 (m, 1H), 8.40 (d, J = 9.3 Hz, 1H), 8.48 (ddd, J = 8.2, 8.2, 1.5 Hz, 1H), 8.79 (d, J = 1.5 Hz, 1H), 8.89 (s, 1H), 12.74 (s, 1H)
364		187-188	1H-NMR (**DMSO**) δ 1.03 (t, J = 7.6 Hz, 3H), 2.55 (q, J = 7.6 Hz, 2H), 5.41 (s, 2H), 6.92-7.18 (m, 2H), 7.15-7.42 (m, 2H), 8.30-8.55 (m, 2H), 8.74 (s, 1H), 8.90 (s, 1H), 13.13 (s, 1H)
365		97-102	1H-NMR (**CDCL3**) δ 1.62-1.95 (m, 6H), 1.98-2.22 (m, 2H), 3.08-3.29 (m, 1H), 3.92 (s, 3H), 5.34 (s, 2H), 6.59-6.75 (m, 2H), 7.16-7.26 (m, 1H), 7.45-7.81 (m, 2H), 8.75 (d, J = 1.6 Hz, 1H)
366		非晶質	1H-NMR (**CDCL3**) δ 1.56-1.93 (m, 6H), 2.00-2.22 (m, 2H), 3.09-3.29 (m, 1H), 3.89 (s, 3H), 5.36 (s, 2H), 6.99 (d, J = 8.7 Hz, 1H), 7.06-7.21 (m, 2H), 7.28 (s, 1H), 7.65 (dd, J = 9.1, 1.7 Hz, 1H), 8.72 (d, J = 1.7 Hz, 1H)
367		139-142	1H-NMR (**CDCL3**) δ 1.64-1.94 (m, 6H), 1.97-2.20 (m, 2H), 3.01-3.22 (m, 1H), 3.90 (s, 3H), 5.35 (s, 2H), 6.62-6.80 (m, 2H), 7.71 (dd, J = 9.0, 1.2 Hz, 1H), 7.95 (d, J = 8.3 Hz, 1H), 8.76 (d, J = 1.2 Hz, 1H), 9.74 (s, 1H)

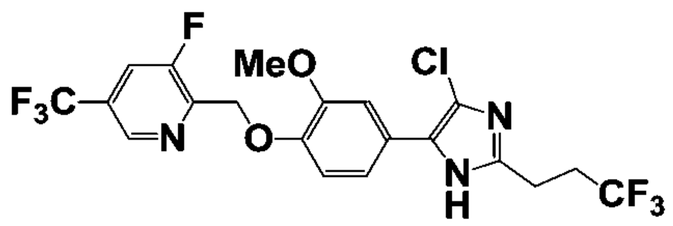
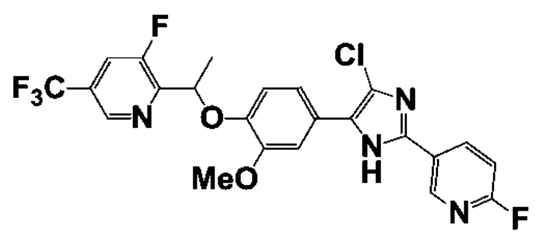
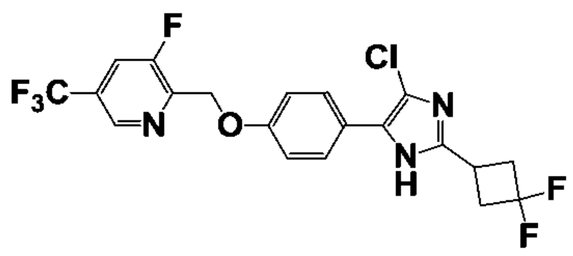
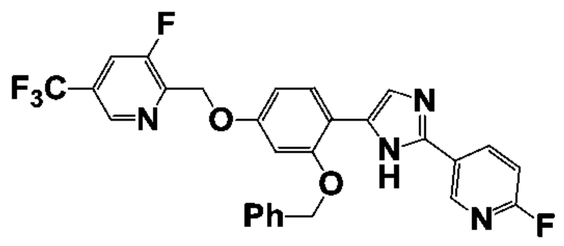
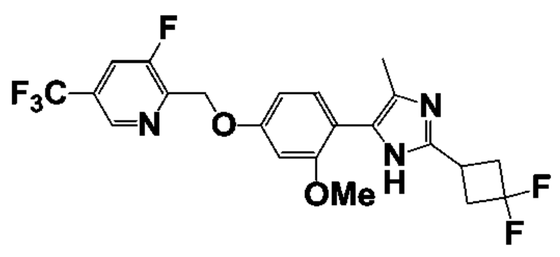
368		158-163	1H-NMR (**CDCL3**) δ 1.64-2.17 (m, 8H), 2.98-3.20 (m, 1H), 3.89 (s, 3H), 5.38 (s, 2H), 6.95-7.15 (m, 2H), 7.18-7.26 (m, 1H), 7.68 (dd, J = 8.8, 1.5 Hz, 1H), 8.73 (d, J = 1.5 Hz, 1H), 9.05 (s, 1H)
369		167-172	1H-NMR (**DMSO**) δ 5.40 (s, 2H), 6.97 (dd, J = 8.8, 2.4 Hz, 1H), 7.05 (dd, J = 12.9, 2.4 Hz, 1H), 7.32 (dd, J = 8.8, 2.9 Hz, 1H), 7.53 (s, 1H), 7.92-8.11 (m, 1H), 8.41 (dd, J = 8.8, 1.6 Hz, 1H), 8.51 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.83 (d, J = 2.4 Hz, 1H), 8.89 (s, 1H), 12.89 (s, 1H)
370		144-146	1H-NMR (**DMSO**) δ 5.46 (s, 2H), 7.05 (dd, J = 8.8, 2.4 Hz, 1H), 7.18 (dd, J = 12.2, 2.4 Hz, 1H), 7.33 (dd, J = 8.5, 2.4 Hz, 1H), 7.53 (dd, J = 8.8, 8.8 Hz, 1H), 8.33-8.54 (m, 2H), 8.77 (d, J = 2.4 Hz, 1H), 8.90 (s, 1H), 13.24 (s, 1H)
371		非晶質	1H-NMR (**CDCL3**) δ 1.84-2.17 (m, 2H), 2.25-2.49 (m, 4H), 3.52-3.73 (m, 1H), 3.92 (s, 3H), 5.33 (s, 2H), 6.57-6.75 (m, 2H), 7.28 (s, 1H), 7.53-7.78 (m, 2H), 8.75 (d, J = 1.6 Hz, 1H)
372		非晶質	1H-NMR (**CDCL3**) δ 1.82-2.17 (m, 2H), 2.24-2.47 (m, 4H), 3.53-3.75 (m, 1H), 3.89 (s, 3H), 5.36 (s, 2H), 6.99 (d, J = 8.8 Hz, 1H), 7.07-7.21 (m, 2H), 7.28 (s, 1H), 7.66 (dd, J = 9.0, 1.7 Hz, 1H), 8.72 (d, J = 1.7 Hz, 1H)

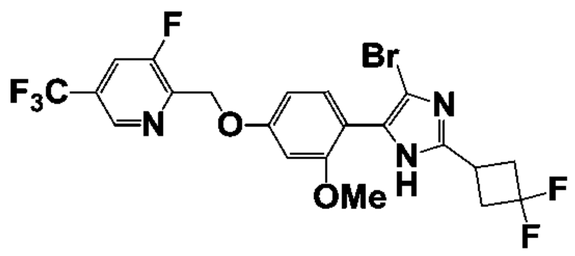
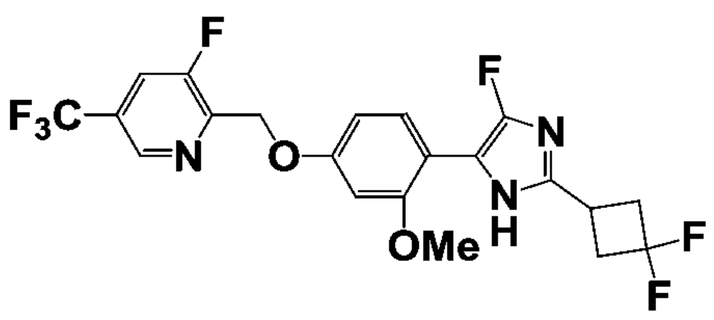
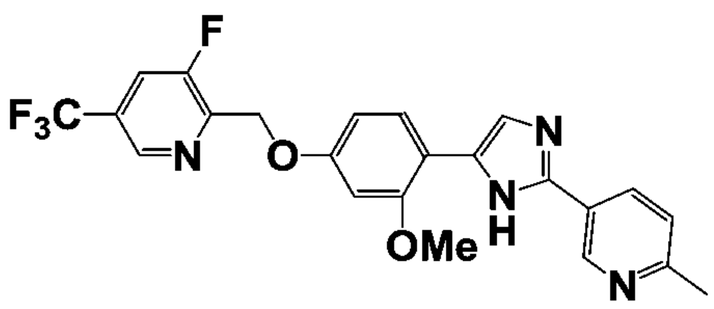
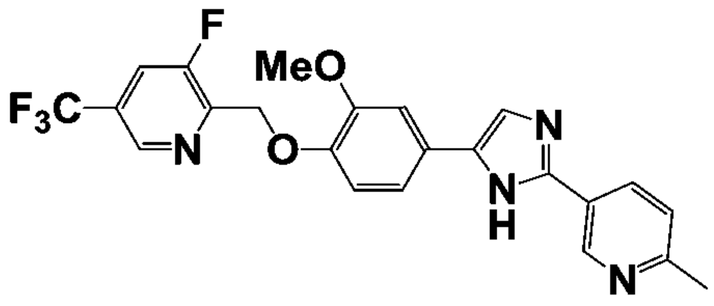
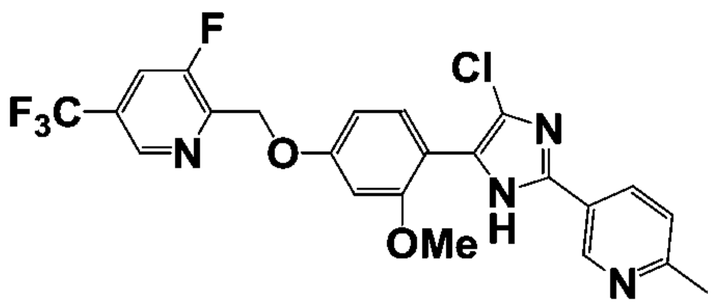
373		155-157	1H-NMR (**CDCL3**) δ 1.85-2.16 (m, 2H), 2.27-2.48 (m, 4H), 3.43-3.65 (m, 1H), 3.90 (s, 3H), 5.35 (s, 2H), 6.62-6.80 (m, 2H), 7.71 (dd, J = 8.8, 1.5 Hz, 1H), 7.95 (d, J = 8.3 Hz, 1H), 8.76 (d, J = 1.5 Hz, 1H), 9.74 (s, 1H)
374		159-162	1H-NMR (**CDCL3**) δ 1.81-2.14 (m, 2H), 2.20-2.48 (m, 4H), 3.41-3.62 (m, 1H), 3.86 (s, 3H), 5.37 (s, 2H), 6.96-7.17 (m, 2H), 7.16-7.25 (m, 1H), 7.68 (dd, J = 9.3, 2.0 Hz, 1H), 8.72 (d, J = 2.0 Hz, 1H), 9.46 (s, 1H)
375		非晶質	1H-NMR (**CDCL3**) δ 0.82-1.08 (m, 4H), 1.89-2.05 (m, 1H), 3.92 (s, 3H), 5.33 (s, 2H), 6.58-6.75 (m, 2H), 7.21 (s, 1H), 7.57-7.68 (m, 1H), 7.70 (dd, J = 9.0, 1.7 Hz, 1H), 8.75 (d, J = 1.7 Hz, 1H)
376		非晶質	1H-NMR (**CDCL3**) δ 0.91-1.05 (m, 4H), 1.87-2.11 (m, 1H), 3.89 (s, 3H), 5.36 (s, 2H), 6.97 (d, J = 8.3 Hz, 1H), 7.07 (s, 1H), 7.13 (dd, J = 8.3, 1.5 Hz, 1H), 7.26-7.31 (m, 1H), 7.66 (dd, J = 9.3, 1.5 Hz, 1H), 8.72 (d, J = 1.5 Hz, 1H)
377		151-154	1H-NMR (**CDCL3**) δ 0.88-1.11 (m, 4H), 1.78-1.98 (m, 1H), 3.91 (s, 3H), 5.35 (s, 2H), 6.62-6.79 (m, 2H), 7.71 (dd, J = 8.8, 1.5 Hz, 1H), 7.93 (d, J = 8.8 Hz, 1H), 8.76 (d, J = 1.5 Hz, 1H), 9.80 (s, 1H)

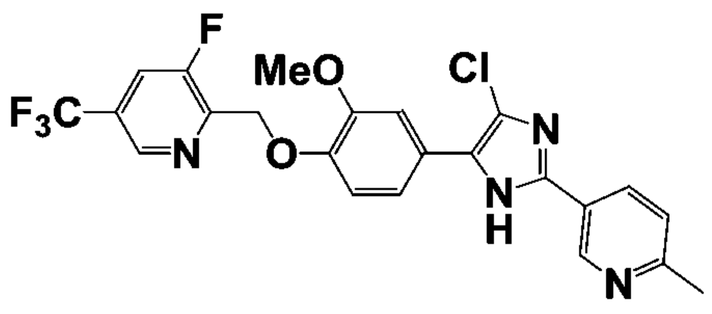
378		161-165 (分解)	1H-NMR (**CDCL3**) δ 0.81-1.11 (m, 4H), 1.79-1.98 (m, 1H), 3.88 (s, 3H), 5.38 (s, 2H), 6.96-7.13 (m, 2H), 7.17-7.26 (m, 1H), 7.68 (dd, J = 9.0, 1.7 Hz, 1H), 8.73 (d, J = 1.7 Hz, 1H)
379		141-144	1H-NMR (**CDCL3**) δ 1.41 (s, 9H), 3.92 (s, 3H), 5.34 (s, 2H), 6.57-6.80 (m, 2H), 7.13-7.25 (m, 1H), 7.54 (s, 1H), 7.71 (d, J = 8.8 Hz, 1H), 8.75 (s, 1H), 9.89 (s, 1H)
380		178-182	1H-NMR (**CDCL3**) δ 1.42 (s, 9H), 3.91 (s, 3H), 5.36 (s, 2H), 6.99 (d, J = 8.3 Hz, 1H), 7.10 (s, 1H), 7.12-7.42 (m, 2H), 7.66 (dd, J = 8.8, 1.6 Hz, 1H), 8.72 (d, J = 1.6 Hz, 1H)
381		84-89	1H-NMR (**CDCL3**) δ 1.37 (d, J = 6.8 Hz, 6H), 3.01-3.21 (m, 1H), 3.92 (s, 3H), 5.33 (s, 2H), 6.56-6.75 (m, 2H), 7.26-7.36 (m, 1H), 7.54-7.78 (m, 2H), 8.75 (d, J = 1.6 Hz, 1H)
382		油狀	1H-NMR (**CDCL3**) δ 1.36 (d, J = 7.3 Hz, 6H), 3.03-3.23 (m, 1H), 3.90 (s, 3H), 5.36 (s, 2H), 6.99 (d, J = 8.3 Hz, 1H), 7.04-7.20 (m, 2H), 7.28 (s, 1H), 7.66 (dd, J = 9.3, 1.5 Hz, 1H), 8.72 (d, J = 1.5 Hz, 1H)
383		170-172	1H-NMR (**CDCL3**) δ 1.39 (s, 9H), 3.90 (s, 3H), 5.35 (s, 2H), 6.63-6.80 (m, 2H), 7.72 (dd, J = 9.3, 2.0 Hz, 1H), 7.97 (d, J = 8.3 Hz, 1H), 8.76 (d, J = 2.0 Hz, 1H), 9.83 (s, 1H)

384		179-184	1H-NMR (**CDCL3**) δ 1.40 (s, 9H), 3.91 (s, 3H), 5.38 (s, 2H), 7.07-7.00 (m, 2H), 7.25 (s, 1H), 7.68 (dd, J = 9.0, 1.7 Hz, 1H), 8.73 (d, J = 1.7 Hz, 1H), 8.82 (s, 1H)
385		131-135	1H-NMR (**CDCL3**) δ 1.36 (d, J = 6.8 Hz, 6H), 2.90-3.16 (m, 1H), 3.90 (s, 3H), 5.35 (s, 2H), 6.63-6.80 (m, 2H), 7.71 (dd, J = 8.8, 1.5 Hz, 1H), 7.96 (d, J = 8.3 Hz, 1H), 8.76 (d, J = 1.5 Hz, 1H), 9.77 (s, 1H)
386		188-191 (分解)	1H-NMR (**CDCL3**) δ 1.36 (d, J = 7.3 Hz, 6H), 2.93-3.13 (m, 1H), 3.90 (s, 3H), 5.39 (s, 2H), 6.95-7.15 (m, 2H), 7.16-7.26 (m, 1H), 7.68 (dd, J = 9.3, 1.5 Hz, 1H), 8.73 (d, J = 1.5 Hz, 1H), 8.96 (s, 1H)
387		191-193	1H-NMR (**DMSO**) δ 3.89 (s, 3H), 5.38 (s, 2H), 6.65-6.83 (m, 2H), 7.57 (s, 1H), 7.75 (d, J = 8.3 Hz, 1H), 7.85-8.15 (m, 1H), 8.26 (dd, J = 8.3, 2.4 Hz, 1H), 8.41 (d, J = 10.2 Hz, 1H), 8.90 (s, 1H), 8.97 (d, J = 2.4 Hz, 1H)
388		222-224	1H-NMR (**CDCL3**) δ 4.00 (s, 3H), 5.19 (s, 2H), 6.54-6.74 (m, 2H), 7.39-7.84 (m, 4H), 7.87-8.33 (m, 2H), 8.71-8.90 (m, 2H), 10.67 (s, 1H)
389		油狀	1H-NMR (**CDCL3**) δ 0.84 (t, J = 7.3 Hz, 3H), 1.28-1.53 (m, 4H), 1.71 (d, J = 5.9 Hz, 3H), 3.06-3.31 (m, 2H), 3.94 (s, 3H), 5.27-5.46 (m, 3H), 6.59-6.79 (m, 2H), 7.06 (dd, J = 8.8, 2.9 Hz, 1H),

			7.61-7.81 (m, 2H), 8.10 (ddd, J = 8.8, 8.8, 2.4 Hz, 1H), 8.16 (d, J = 8.8 Hz, 1H), 8.45 (d, J = 2.4 Hz, 1H), 8.75 (s, 1H)
390		76-91	1H-NMR (**CDCL3**) δ 2.58-2.74 (m, 2H), 2.96-3.07 (m, 2H), 3.93 (s, 3H), 5.34 (s, 2H), 6.60-6.76 (m, 2H), 7.27-7.36 (m, 1H), 7.66 (s, 1H), 7.71 (dd, J = 9.0, 1.7 Hz, 1H), 8.75 (s, 1H)
391		油狀	1H-NMR (**CDCL3**) δ 2.56-2.74 (m, 2H), 2.93-3.05 (m, 2H), 3.91 (s, 3H), 5.36 (s, 2H), 7.00 (d, J = 8.3 Hz, 1H), 7.04-7.19 (m, 2H), 7.28 (s, 1H), 7.66 (dd, J = 9.0, 1.7 Hz, 1H), 8.72 (s, 1H)
392		油狀	1H-NMR (**CDCL3**) δ 1.78 (d, J = 6.8 Hz, 3H), 3.90 (s, 3H), 5.76 (q, J = 6.8 Hz, 1H), 6.84 (d, J = 8.3 Hz, 1H), 7.01 (dd, J = 8.5, 2.7 Hz, 1H), 7.13 (dd, J = 8.3, 1.5 Hz, 1H), 7.30 (s, 1H), 7.33 (d, J = 1.5 Hz, 1H), 7.61 (dd, J = 12.0, 2.7 Hz, 1H), 8.38 (ddd, J = 8.5, 8.5, 2.7 Hz, 1H), 8.64 (d, J = 2.7 Hz, 1H), 8.69 (d, J = 2.7 Hz, 1H)
393		191-196	1H-NMR (**CDCL3**) δ 2.87-3.10 (m, 4H), 3.36-3.53 (m, 1H), 5.33 (s, 2H), 7.03 (dd, J = 6.8, 2.0 Hz, 2H), 7.14 (s, 1H), 7.61 (dd, J = 6.8, 2.0 Hz, 2H), 7.70 (dd, J = 9.0, 1.7 Hz, 1H), 8.74 (d, J = 1.7 Hz, 1H)
394		154-159	1H-NMR (**CDCL3**) δ 2.52-2.76 (m, 2H), 2.88-3.06 (m, 2H), 3.90 (s, 3H), 5.36 (s, 2H), 6.63-6.81 (m, 2H), 7.72 (dd, J

			= 9.0, 1.7 Hz, 1H), 7.96 (d, J = 8.3 Hz, 1H), 8.76 (d, J = 1.7 Hz, 1H), 9.92 (s, 1H)
395		116-119	1H-NMR (**CDCL3**) δ 2.49-2.74 (m, 2H), 2.84-3.04 (m, 2H), 3.87 (s, 3H), 5.38 (s, 2H), 6.99-7.11 (m, 2H), 7.19-7.26 (m, 1H), 7.69 (dd, J = 9.3, 1.5 Hz, 1H), 8.72 (d, J = 1.5 Hz, 1H), 9.54 (s, 1H)
396		113-118	1H-NMR (**CDCL3**) δ 1.76 (d, J = 6.8 Hz, 3H), 3.82 (s, 3H), 5.76 (q, J = 6.8 Hz, 1H), 6.81 (d, J = 8.3 Hz, 1H), 6.96 (dd, J = 8.5, 2.7 Hz, 1H), 7.04 (d, J = 8.3, 1.5 Hz, 1H), 7.15-7.26 (m, 1H), 7.63 (dd, J = 9.3, 1.5 Hz, 1H), 8.32 (ddd, J = 8.5, 8.5, 2.7 Hz, 1H), 8.61 (s, J = 2.7 Hz, 1H), 8.66 (s, J = 1.5 Hz, 1H), 10.43 (s, 1H)
397		162-167	1H-NMR (**CDCL3**) δ 2.83-3.08 (m, 4H), 3.24-3.44 (m, 1H), 5.34 (s, 2H), 7.07 (d, J = 9.4 Hz, 2H), 7.55 (d, J = 8.8 Hz, 2H), 7.71 (dd, J = 8.8, 1.5 Hz, 1H), 8.74 (d, J = 1.5 Hz, 1H), 9.39 (s, 1H)
398		油狀	1H-NMR (**CDCL3**) δ 5.14 (s, 2H), 5.37 (s, 2H), 6.75 (dd, J = 8.8, 2.4 Hz, 1H), 6.78-6.95 (m, 2H), 7.28-7.99 (m, 9H), 8.02-8.20 (m, 1H), 8.76 (s, 1H), 10.60 (s, 1H)
399		172-174	1H-NMR (**CDCL3**) δ 2.37 (s, 3H), 2.83-3.09 (m, 4H), 3.32-3.50 (m, 1H), 3.87 (s, 3H), 5.35 (s, 2H), 6.61-6.78 (m, 2H), 7.35 (d, J = 9.3 Hz, 1H), 7.72 (d, J = 8.8, 1.2 Hz, 1H),

			8.76 (d, J = 1.2 Hz, 1H), 9.51 (s, 1H)
400		192-195	1H-NMR (**CDCL3**) δ 2.87-3.08 (m, 4H), 3.32-3.49 (m, 1H), 3.89 (s, 3H), 5.36 (s, 2H), 6.63-6.80 (m, 2H), 7.72 (dd, J = 8.8, 1.5 Hz, 1H), 7.98 (d, J = 8.8 Hz, 1H), 8.76 (d, J = 1.5 Hz, 1H), 9.92 (s, 1H)
401			1H-NMR (**CDCL3**) δ 2.83-3.08 (m, 4H), 3.22-3.44 (m, 1H), 3.94 (s, 3H), 5.34 (s, 2H), 6.63-6.76 (m, 2H), 7.67 (d, J = 8.8 Hz, 1H), 7.71 (dd, J = 9.0, 1.7 Hz, 1H), 8.75 (d, J = 1.7 Hz, 1H), 9.89 (s, 1H)
402			1H-NMR (**CDCL3**) δ 2.60 (s, 3H), 3.97 (s, 3H), 5.36 (s, 2H), 6.63-6.82 (m, 2H), 7.24 (d, J = 8.8 Hz, 1H), 7.37-7.68 (m, 2H), 7.71 (d, J = 8.8 Hz, 1H), 8.11 (d, J = 7.3, 2.0 Hz, 1H), 8.76 (s, 1H), 8.92 (d, J = 2.0 Hz, 1H), 10.54 (s, 1H)
403			1H-NMR (**CDCL3**) δ 2.55 (s, 3H), 3.87 (s, 3H), 5.36 (s, 2H), 7.01 (d, J = 8.3 Hz, 1H), 7.15-7.28 (m, 3H), 7.32 (s, 1H), 7.66 (dd, J = 9.0, 1.7 Hz, 1H), 8.17 (dd, J = 8.0, 2.2 Hz, 1H), 8.71 (s, 1H), 8.94 (d, J = 2.2 Hz, 1H)
404			1H-NMR (**CDCL3**) δ 2.60 (s, 3H), 3.95 (s, 3H), 5.37 (s, 2H), 6.67-6.83 (m, 2H), 7.24 (d, J = 8.3 Hz, 1H), 7.73 (d, J = 8.8 Hz, 1H), 8.05 (d, J = 8.3 Hz, 1H), 8.08 (dd, J = 8.0, 2.2 Hz,

			1H), 8.76 (s, 1H), 8.88 (d, J = 2.2 Hz, 1H), 10.51 (s, 1H)
405			1H-NMR (**DMSO**) δ 2.51 (s, 3H), 3.83 (s, 3H), 5.36 (s, 2H), 7.21 (d, J = 8.3 Hz, 1H), 7.32 (dd, J = 8.3, 1.5 Hz, 1H), 7.35-7.46 (m, 2H), 8.19 (dd, J = 8.0, 2.4 Hz, 1H), 8.41 (d, J = 8.8 Hz, 1H), 8.89 (s, 1H), 9.03 (d, J = 2.4 Hz, 1H), 12.89 (s, 1H)

【0146】[實施例406]

5-[[3-氟-5-(三氟甲基)吡啶-2-基]甲氧基]-2-[2-(6-氟吡啶-3-基)-1H-咪唑-5-基]酚之製造

將實施例398之化合物2-[(3-(苄氧基)-4-(2-(6-氟吡啶-3-基)-1H-咪唑-5-基)苯氧基)甲基]-3-氟-5-(三氟甲基)吡啶150mg(0.28mmol)溶解於5ml之乙醇，添加15mg之10%鈀碳並以氫置換後，於室溫下攪拌一晚。以矽藻土過濾鈀碳，減壓餾除濾液。將所得結晶以異丙醇洗淨再於60℃下真空乾燥1小時，製得90mg之目的物(產率72%)。

【0147】[實施例407~408]

與實施例406同樣地製出具有下述表5所示結構及熔點之實施例407~408之化合物。另，實施例407~408之前驅物，即，經苄氧基取代之化合物可與前述實施例1~405中任一者同樣地合成出。

【0148】[實施例409]

2-(6-氟吡啶-3-基)-5-[2-甲氧基-4-((6-三氟甲基)吡啶-3-

基)甲氧基)苯基]-1H-咪唑-4-甲腈之製造

將實施例224之化合物5-[(4-(4-溴-2-(6-氟吡啶-3-基)-1H-咪唑-5-基)-3-甲氧基苯氧基)甲基]-2-(三氟甲基)吡啶540mg(1.0 mmol)與150mg(1.3 mmol)之氰化鋅加入11ml之N-甲基吡咯啶酮，再以氬置換之。於該溶液中加入180mg(0.16 mmol)肆(三苯基膦)鈀，於130℃下攪拌11小時。將反應液加入200 ml之水，過濾析出之固體後，以二氧化矽凝膠管柱純化(展開溶劑：氯仿/甲醇)。使整合目的物之餾份所得粗結晶從甲醇再結晶。過濾結晶並於40℃下真空乾燥，獲得140mg之目的物(產率30%)。

【0149】[實施例410]

與實施例409同樣地製出具有下述表5所示結構及熔點之實施例410之化合物。

【0150】[實施例411]

3-氟-2-[4-(2-(6-氟吡啶-3-基)-4-(三氟甲基)-1H-咪唑-5-基)-3-甲氧基苯氧基)甲基]-5-(三氟甲基)吡啶之製造

將實施例139之化合物3-氟-2-[4-(2-(6-氟吡啶-3-基)-1H-咪唑-5-基)-3-甲氧基苯氧基)甲基]-5-(三氟甲基)吡啶300mg(0.65 mmol)、357mg(1.1mmol)之三氟甲基化試劑S-(三氟甲基)二苯并噻鎓四氟硼酸酯)及0.20ml(1.3 mmol)之二氮雜環十一烯加入5ml之DMF中，以氮置換後，於室溫下攪拌3小時。減壓餾除DMF後，以二氧化矽凝膠管柱純化(展開溶劑：己烷/乙酸乙酯)。整合目的物之餾份，減壓餾除溶劑後以己烷洗淨結晶。於65℃下真空乾

燥1小時，獲得240mg之目的物(產率70%)。

【0151】[實施例412]

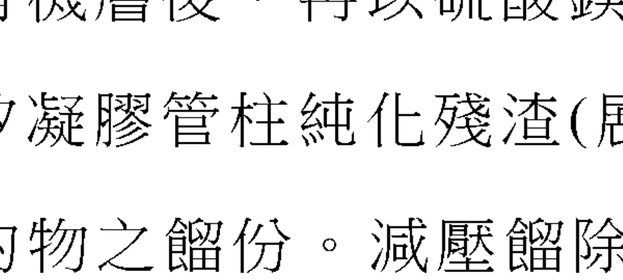
與實施例411同樣地製出具有下述表5所示結構及熔點之實施例412之化合物。

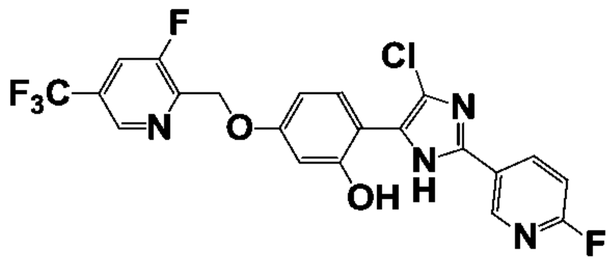
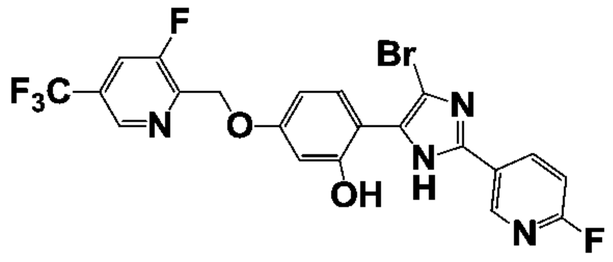
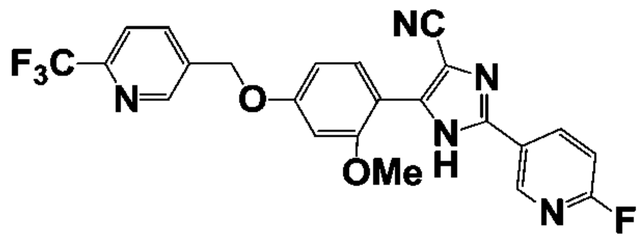
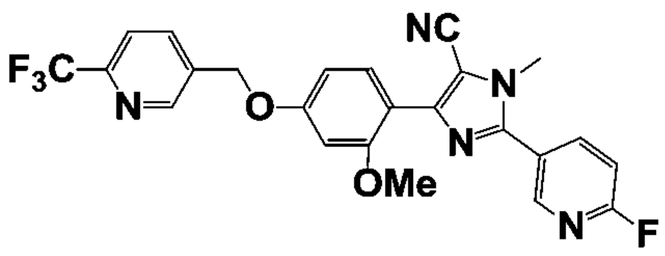
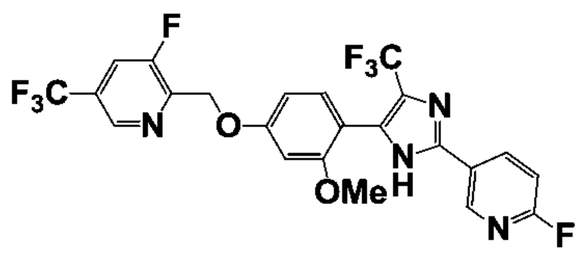
【0152】[實施例413]

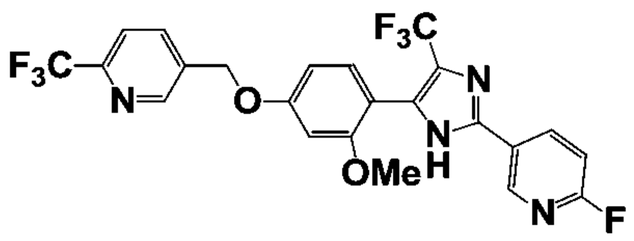
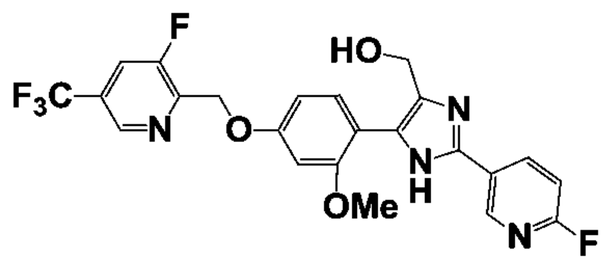
[5-(4-((3-氟-5-(三氟甲基)吡啶-2-基)甲氧基)-2-甲氧基苯基)-2-(6-(氟吡啶-3-基)-1H-咪唑-4-基]甲醇之製造

將實施例139之化合物3-氟-2-[4-(2-(6-氟吡啶-3-基)-1H-咪唑-5-基)-3-甲氧基苯氧基)甲基]-5-(三氟甲基)吡啶220mg(0.48 mmol)溶解於2ml之THF與2ml之甲醇中。於該溶液中加入1.1ml(1.4mmol)之3.8%甲醛水溶液與0.18ml(0.71mmol)之4N氫氧化鈉溶液，於65℃下攪拌一晚。以70ml之乙酸乙酯/己烷(＝2/1)抽提，以水、鹽水洗淨有機層後，再以硫酸鎂乾燥。減壓餾除溶劑後，以二氧化矽凝膠管柱純化殘渣(展開溶劑：己烷/乙酸乙酯)，整合目的物之餾份。減壓餾除溶劑而獲得65mg之目的物(產率27%)。

【0153】[表5]

實施例No.	結構	熔點(°C)	1H-NMR(δ:ppm)
406		202-207	1H-NMR (**DMSO**) δ 5.32 (s, 2H), 6.44-6.72 (m, 2H), 7.36 (dd, J = 8.5, 1.5 Hz, 1H), 7.56-7.74 (m, 1H), 7.80 (s, 1H), 8.40 (d, J = 9.8 Hz, 1H), 8.45-8.62 (m, 1H), 8.81 (d, J = 1.0 Hz, 1H), 8.89 (d, J = 1.5 Hz, 1H), 11.78 (s, 1H), 13.21 (s, 1H)

407		229-233 (分解)	1H-NMR (**DMSO**) δ 5.34 (s, 2H), 6.53-6.72 (m, 2H), 7.20-7.39 (m, 2H), 8.24-8.54 (m, 2H), 8.76 (d, J = 2.3 Hz, 1H), 8.89 (s, 1H), 10.05 (s, 1H)
408		202-204	1H-NMR (**DMSO**) δ 5.35 (s, 2H), 6.51-6.71 (m, 2H), 7.17-7.41 (m, 2H), 8.31-8.54 (m, 2H), 8.76 (d, J = 1.7 Hz, 1H), 8.90 (s, 1H), 10.04 (s, 1H), 12.96 (s, 1H)
409		212-219	1H-NMR (**DMSO**) δ 3.88 (s, 3H), 5.42 (s, 2H), 6.86 (dd, J = 8.4, 1.6 Hz, 1H), 6.93 (d, J = 1.6 Hz, 1H), 7.38 (dd, J = 8.8, 2.0 Hz, 1H), 7.54 (d, J = 8.4 Hz, 1H), 7.99 (d, J = 8.4 Hz, 1H), 8.22 (d, J = 8.4 Hz, 1H), 8.52-8.56 (m, 1H), 8.85 (s, 1H), 8.92 (s, 1H), 13.42 (s, 1H)
410		165-167	1H-NMR (**DMSO**) δ 3.84 (s, 3H), 3.89 (s, 3H), 5.38 (s, 2H), 6.78 (dd, J = 8.6, 2.4 Hz, 1H), 6.86 (d, J = 2.4 Hz, 1H), 7.42 (dd, J = 8.6, 2.6 Hz, 1H), 7.74 (d, J = 8.8 Hz, 1H), 7.98 (d, J = 8.6 Hz, 1H), 8.21 (dd, J = 8.8, 1.6 Hz, 1H), 8.38-8.43 (m, 1H), 8.67 (d, J = 2.4 Hz, 1H), 8.91 (s, J = 1.6 Hz, 1H)
411		181-182	1H-NMR (**CDCL3**) δ 3.86 (s, 3H), 5.35 (s, 2H), 6.61-6.78 (m, 2H), 7.04 (dd, J = 9.1, 2.7 Hz, 1H), 7.35-7.51 (m, 1H), 7.73 (dd, J = 8.8, 1.5 Hz, 1H), 8.37 (ddd, J = 9.1, 6.7, 2.9 Hz, 1H), 8.59 (d, J = 2.9 Hz, 1H), 8.75 (s, 1H), 10.27 (s, 1H)

412		222-224	1H-NMR (**DMSO**) δ 3.77 (s, 3H), 5.38 (s, 2H), 6.76 (dd, J = 8.5, 2.4 Hz, 1H), 6.85 (d, J = 2.4 Hz, 1H), 7.23-7.40 (m, 2H), 7.97 (d, J = 8.5 Hz, 1H), 8.20 (dd, J = 8.3, 1.5 Hz, 1H), 8.49 (ddd, J = 8.3, 8.3, 2.4 Hz, 1H), 8.80 (d, J = 2.4 Hz, 1H), 8.89 (d, J = 1.5 Hz, 1H)
413		油狀	1H-NMR (**CDCL3**) δ 3.65-3.84 (m, 6H), 5.15 (s, 2H), 6.41-6.66 (m, 3H), 7.38-7.78 (m, 2H), 7.91 (dd, J = 8.8, 2.0 Hz, 1H), 8.40 (d, J = 2.0 Hz, 1H), 8.57 (s, 1H)

【0154】[製劑例1]

錠劑之調製

有效成分使用實施例227之化合物，依下列處方調製出每1錠含有300mg該化合物之錠劑(10000錠)。

實施例227之化合物	3000g
乳糖(日本藥典標準品)	335g
玉米澱粉(日本藥典標準品)	165g
羧甲基纖維素鈣(日本藥典標準品)	125g
甲基纖維素(日本藥典標準品)	60g
硬脂酸鎂(日本藥典標準品)	15g

依照上述處方，將實施例227之化合物、乳糖、玉米澱粉及羧甲基纖維素鈣充分混合，並使用甲基纖維素水溶液使混合物顆粒化，以24網目之篩過篩後，將其與硬脂酸酸鎂混合並壓製成錠劑，而獲得目的之錠劑。

【0155】[製劑例2]

膠囊劑之調製

有效成分使用實施例255之化合物，依照下述處方調製出每1顆膠囊含有該化合物200mg之硬質明膠膠囊劑(10000顆膠囊)。

實施例255之化合物	2000g
結晶纖維素(日本藥典標準品)	300g
玉米澱粉(日本藥典標準品)	170g
滑石(日本藥典標準品)	20g
硬脂酸鎂(日本藥典標準品)	10g

依照上述處方，將各成分細研為粉末，混合成均勻之混合物後，充填到具有所需尺寸之經口投藥用明膠膠囊而獲得目的之膠囊劑。

【0156】[試驗例1]LPL mRNA之上昇作用

使用DMEM培養基(Gibco公司)[含2mM之L-麩醯胺酸及10%牛胎兒血清]，將源自小鼠橫紋肌之細胞株C2C12細胞播種到96孔微盤，使細胞生育後去除培養基。接著，對相同培養基添加各種化合物之二甲亞碸(DMSO)溶液至成為10μM，將如此所得培養基加至細胞，靜置24小時。去除含化合物之培養基，以磷酸緩衝生理食鹽水洗淨微盤後，使殘留的細胞溶解，供予逆轉錄聚合酶連鎖反應(RT-PCR反應)而獲得cDNA。對所得cDNA添加對脂蛋白脂酶(LPL)基因具專一性之引子及必要的酵素等，安裝到Applied Biosystem公司製之7500 Fast Real Time PCR System實施PCR反應(20循環)，定量出已擴增之LPL mRNA量。令靜置在僅添加DMSO之培養基之細胞的LPL

mRNA量為1，以比率來表示各化合物於受測細胞中之LPL mRNA上昇作用。

另，作為比較例1，使用WO2010/090200號公報中載為實施例57之化合物同樣地進行試驗。茲將結果示於下述表6。

【0157】[表6]

實施例	LPL mRNA 上昇率	實施例	LPL mRNA 上昇率	實施例	LPL mRNA 上昇率	實施例	LPL mRNA 上昇率	實施例	LPL mRNA 上昇率
1	2.97	133	2.43	230	1.58	323	1.72	386	2.77
3	2.48	134	2.85	233	3.87	324	1.95	387	2.41
6	4.44	135	3.14	234	3.06	325	2.44	388	2.13
12	2.23	136	2.71	235	2.78	326	2.63	389	1.63
13	2.31	138	2.97	237	2.82	327	3.06	390	2.09
14	5.42	141	2.33	238	2.42	328	2.41	391	1.58
15	4.27	142	2.27	239	2.39	329	2.96	392	1.73
16	3.14	152	3.3	241	2.45	330	1.88	393	1.26
17	3.2	153	4.61	242	2.38	331	2.17	394	2.39
18	1.05	154	5.78	247	2.25	332	1.91	395	2.61
19	1.7	155	3.06	248	2.36	333	1.22	396	2.93
20	2.78	156	3.27	249	2.5	334	1.78	397	4.58
21	1.99	157	4.05	252	2.58	335	2.37	398	2.22
22	2.22	158	2.77	253	2.62	336	3.23	399	4.68
23	2.94	161	3.06	254	2.71	337	3.07	400	4.49
24	2.94	165	3.34	255	3.14	338	1.32	401	2.9
25	2.68	167	2.23	256	3.12	339	1.32	402	2.37
27	2.45	169	3.12	258	2.91	340	2.26	403	2.09
32	2.58	170	3.36	259	2.93	341	1.75	404	3.26
33	2.92	171	2.89	260	2.95	342	2.44	405	2.78
34	2.22	172	3.12	261	4.08	343	1.42	406	2.62
36	2.4	175	3.94	262	3.61	344	1.83	407	1.68
38	2.25	176	2.83	263	3.18	345	2.39	408	1.24
39	2.7	178	3.58	264	2.99	346	3.18	409	1.34
40	0.93	179	2.66	265	3.36	347	3.28	410	0.42
42	2.27	181	4.53	266	2.38	348	1.76	411	1.62
43	3.48	182	3.41	267	2.66	349	2.20	412	1.41
44	1.14	183	4.26	268	2.53	350	1.38	413	2.06
45	1.09	185	2.41	270	3.81	351	4.12		
46	2.49	188	2.95	271	3.39	352	5.48		
47	3.26	189	3.51	273	2.5	353	4.08		
48	3.02	190	3.58	274	3.41	354	4.44		
49	3.46	191	4.06	276	2.36	355	3.59		
55	4.24	193	4.32	277	2.66	356	2.06		
56	2.57	194	3.92	278	2.95	357	3.59		
57	3.72	195	3.34	279	3.63	358	4.18		
65	2.89	198	6.36	280	2.91	359	1.75		
68	2.45	199	5.05	281	3.36	360	3.93		
71	2.37	200	4.73	285	3.01	361	5.51		
72	2.75	201	2.45	287	3.53	362	2.89		
73	4.07	202	3.15	290	2.64	363	2.78		
77	3.11	203	5.47	292	2.81	364	2.65		
79	1.42	204	5.07	293	5.05	365	3.02		
80	2.01	205	5.41	294	2.42	366	1.95		
89	1.69	206	2.75	295	4.06	367	2.54		
100	3.05	207	2.5	296	3.48	368	2.62		
103	2.36	208	4.72	297	2.76	369	1.26		
104	2.27	209	5.34	299	2.97	370	3.31		
106	2.66	210	5.69	300	2.84	371	3.57		
107	2.68	211	2.55	301	2.99	372	1.95		
108	3.03	212	2.22	302	2.44	373	3.03		
109	1.76	213	2.04	303	3.29	374	2.60		
111	2.46	214	3.66	308	4.07	375	1.83		
112	2.39	216	2.62	309	2.37	376	1.18		
117	3.38	218	1.21	313	1.33	377	1.88		
118	2.91	219	2.42	314	1.66	378	1.24		
121	3.38	220	2.69	315	2.70	379	2.87		
122	1.7	221	3.47	316	2.53	380	1.18		
123	3.22	222	2.89	317	2.90	381	2.19		
124	2.28	224	2.29	318	3.15	382	1.41		
128	2.28	225	2.8	319	3.74	383	2.16		
131	3.66	227	5.08	321	1.82	384	1.84		
132	2.77	229	2.62	322	1.55	385	3.18		

比較例	LPL mRNA 上昇率
1	1.32

【0158】[試驗例2]對胃液或腸液模式液之溶解度

進行利用DMSO析出法之測定。即，於日本藥典崩解試驗第1液(pH1.2)或日本藥典崩解試驗第2液(pH6.8)中添加各種化合物之二甲亞碸(DMSO)溶液，室溫下振盪攪拌24小時。接著，過濾並去除混合液中之不溶物後，測定濾液之UV吸收，並將所得數值套用已預先準備之各化合物之檢量線，算出溶解之化合物濃度(μg/mL)。茲將結果示於下述表7。

【0159】[表7]

實施例	溶解度(μg／mL)	
	第1液	第2液
1	20.7	1.7
2	＞ 88	25.1
3	87.5	1
4	86.6	0.9
5	90.1	1.1
6	91.5	47
7	84	40.2
8	83.6	＜ 0.3
9	87.7	1.8
10	89.5	17.3
11	80.1	5.4
12	15.6	＜ 1.7
13	＞ 81	74
14	＞ 99	＜ 0.4
15	7.8	＜ 8.1
16	90.8	13.4
17	＞ 93	3
18	43.5	3.7
19	76.7	2.2
21	3	＜ 1.8
22	7.5	1.6
23	13.1	＜ 1.6
24	53.6	1.8
25	83.1	1
26	8.7	1.3
27	5.9	0.5
29	3	0.6
30	24	0.6
31	7.7	1.6
34	17	＜ 0.3
37	5.6	0.6
38	60.5	0.9
39	＞ 99	5.2
40	6.9	2.8
41	23.3	1.3
42	8.6	2.3
43	16.2	3.4
44	11.9	0.7
45	27.8	＜ 0.3
46	22.9	＜ 9.1
47	5.1	0.3
48	＞ 89	80.8
49	8.7	0.9
51	90.2	9
53	＞ 86	4.6
55	＞ 78	2.3
56	4.8	0.8
57	＞ 99	0.8
58	94.4	16.5
60	8.8	1.1

實施例	溶解度(μg／mL)	
	第1液	第2液
61	＞ 101	1.6
62	＞ 101	1.3
63	82.2	12.5
64	56.2	2.6
65	77.3	1.3
66	56.9	0.9
67	93.5	0.4
68	104.1	2.3
69	5.3	1.3
72	＞ 116	1.8
73	＞ 108	5.3
74	53.6	1.8
75	83.1	1
76	＜ 8.5	1
77	8.7	1.3
78	＞ 83	20.6
79	10.6	1.2
80	84.9	0.4
81	78.7	5.8
82	＞ 78	41.1
83	27.8	2.9
85	85.4	1
86	73.5	＜ 0.3
87	39.4	0.7
88	54.1	0.5
89	85.4	1.8
91	42.8	0.6
93	10	0.9
94	8.7	0.9
97	15.2	2.2
98	37.1	1.3
100	15	＜ 0.3
102	92.5	8.9
103	36	＜ 0.3
104	20.6	0.7
105	27.6	＜ 0.3
106	31.2	6.3
107	11.2	9.6
108	4.1	＜ 0.3
109	＞ 57	40
110	＞ 57	＞ 57
111	9.4	1.2
112	12	2.1
113	21.1	0.5
114	11.3	2.7
115	15.5	2
116	24.1	＜ 1.6
117	80.2	2.6
118	80.2	2.1
119	44.7	5.2

實施例	溶解度(μg／mL)	
	第1液	第2液
120	＞ 73	4
121	＞ 89	1.8
122	71.8	2.9
124	18.7	＜ 1.6
125	23.1	0.5
126	7.1	5.6
127	17.1	＜ 0.3
128	94.9	4
129	13.6	＜ 0.3
131	87.4	＜ 0.3
132	5.9	＜ 0.3
133	29.3	2
135	6.8	2.2
136	＞ 89	2.2
137	39.9	36.1
139	5	＜ 0.3
140	7.8	4.8
141	10.1	＜ 0.3
145	＜ 0.3	4
146	9.9	1.2
147	12.4	3.6
148	＜ 0.3	5.3
149	19.6	3.9
150	2.4	0.3
151	＞ 92	0.9
152	＞ 98	＜ 0.3
153	＞ 98	1.7
154	103.5	2
155	＞ 106	3
156	104.1	3.6
157	105.5	1.9
158	93.2	15.9
159	＞ 94	4
160	＞ 94	＜ 0.3
161	＞ 94	3.9
162	94.3	0.7
163	＞ 92	1.4
164	＞ 98	1.2
165	96	2.1
166	＞ 98	0.6
167	100.3	0.4
168	＞ 95	＜ 0.3
169	96.3	＜ 0.4
170	104.6	1.3
171	＞ 109	＜ 1.9
175	10	2.5
178	98.5	1.7
179	25.8	2.3
180	89.1	0.4
181	93.4	＜ 0.3

實施例	溶解度(μg／mL)	
	第1液	第2液
182	95.5	1.9
183	99	1.1
184	96.3	5.8
185	87.4	23.1
186	23.2	< 0.3
187	75.6	< 0.4
188	86.4	1.9
189	89	11.6
190	92.5	2
191	25.9	1.7
192	22.6	0.6
193	86.4	0.8
194	> 90	0.5
195	> 100	0.6
196	> 85	< 7.5
197	> 88	25.7
198	> 109	17.4
199	> 115	< 10.2
200	98.4	2.4
201	90	2.6
202	8.8	< 1.8
203	63.8	< 1.8
204	> 100	< 8.9
205	> 106	< 9.5
206	> 88	7
207	83.4	0.4
208	24.9	< 0.4
209	99.4	< 0.4
210	95.6	1.5
211	84.7	2.2
212	76.9	0.5
213	79.7	2.1
214	> 96	7.1
216	84.3	1.8
218	0.4	< 9.6
219	7.5	< 1.6
220	< 0.3	< 7.9
221	66.5	< 8.8
223	> 105	< 0.4
225	5.5	0.9
226	< 8.5	3.4
228	9.7	2.6
230	7.2	< 0.3
233	9.9	1.1
234	92.8	< 0.3
236	< 0.3	29.9
237	7.1	< 1.8
238	7.5	5.6
239	8.8	15.6
240	12	< 0.4

實施例	溶解度(μg／mL)	
	第1液	第2液
245	90.2	11.7
246	15.6	5
247	8.4	5.3
253	5.9	1
255	17.5	< 0.4
256	11.4	< 0.4
265	2.2	5.8
266	64.3	4.6
267	17.7	0.4
268	13.8	6.6
270	9.1	< 0.4
274	6.7	0.4
275	96	4.2
276	66.5	6.7
279	4.1	0.5
281	9.7	9.3
288	< 0.3	23.4
289	10.8	2.2
290	< 0.3	27.6
291	9.9	3.5
292	> 111	< 9.9
293	91.5	0.4
294	103.8	2.4
295	18.3	1.1
296	73	2.3
297	89.8	7
298	108.5	1.6
300	> 111	< 0.4
301	15.1	< 0.4
302	> 107	< 0.4
303	84.3	< 0.4
304	> 48	0.5
305	24.7	0.4
306	> 102	< 0.4
308	101.2	0.4
309	14.8	< 0.4
310	> 99	< 1.8
311	5.6	< 0.4
312	23.6	< 0.4
313	62.3	5.0
314	50.2	0.9
315	1.8	2.7
316	94.4	4.9
317	69.1	9.3
318	100.4	8.7
319	4.7	0.5
321	69.4	1.9
322	72.0	1.3
323	78.3	17.0
324	20.2	0.8

實施例	溶解度(μg／mL)	
	第1液	第2液
325	4.7	1.3
326	63.7	0.7
327	109.6	0.7
328	44.2	0.4
329	5.8	13.6
330	6.5	0.9
331	94.6	8.0
332	77.7	3.3
333	59.0	5.2
334	76.6	7.8
335	93.4	6.6
336	89.3	0.4
337	110.3	0.5
338	>62	59.7
339	>62	58.9
340	93.8	8.1
341	91.7	15.8
342	32.7	1.4
343	50.0	39.2
344	85.9	4.6
345	<0.4	<0.4
346	99.1	<0.4
347	83.2	<0.4
348	89.6	22.4
349	83.6	10.8
350	53.3	51.0
351	85.9	7.0
352	9.8	6.0
353	85.4	0.5
354	38.8	1.1
355	<0.3	<0.3
357	7.8	<0.3
358	1.6	<0.4
359	57.3	52.8
360	90.7	0.6
361	3.4	<0.4
362	95.5	5.0
363	103.6	6.9
364	<0.4	<0.4
365	77.9	31.2
366	79.2	24.7
367	82.1	<0.3
368	82.9	0.5
369	35.9	<0.3
370	1.6	1.8
371	84.0	42.9
372	80.4	33.5
373	88.3	<0.3
374	88.3	1.2
375	73.9	72.5

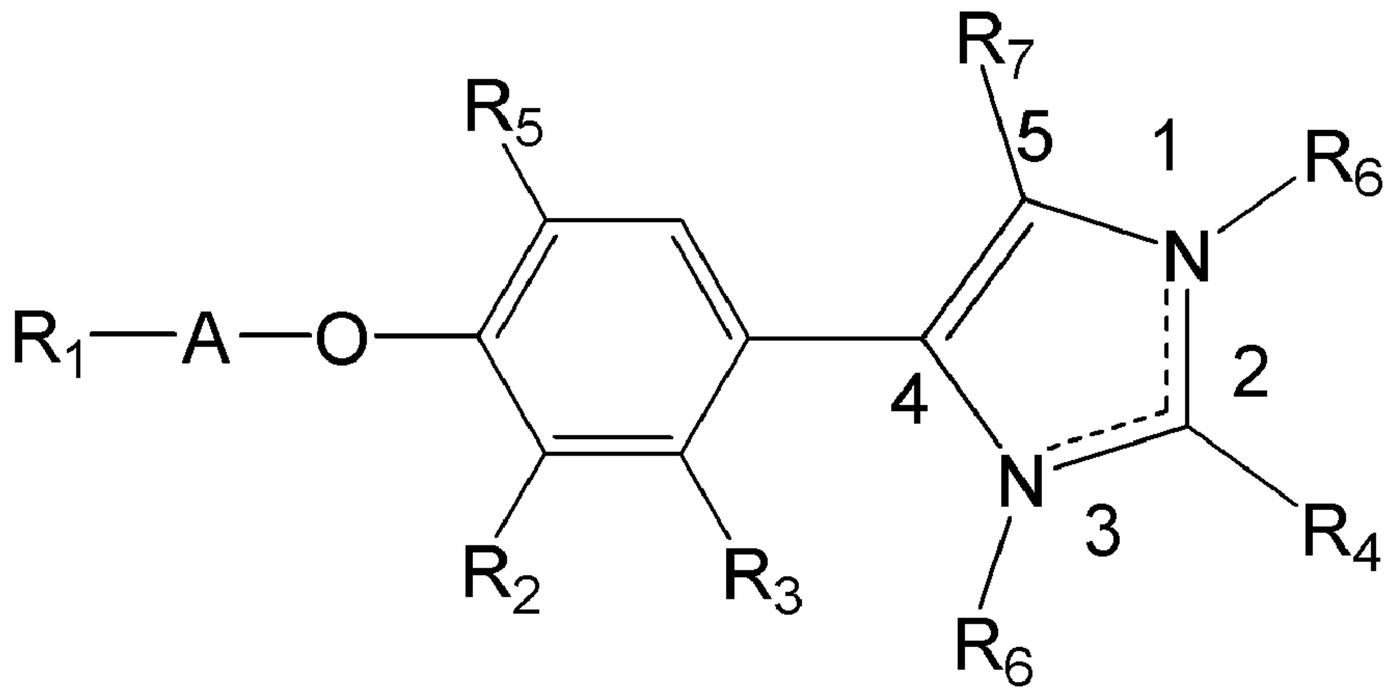
實施例	溶解度（μg／mL）	
	第1液	第2液
376	75.2	79.4
377	84.6	0.7
378	81.6	7.5
379	79.9	72.9
380	81.2	63.7
381	78.2	66.9
382	74.8	62.1
383	85.1	<0.3
384	86.4	1.2
385	84.7	2.1
386	82.7	0.9
387	4.8	0.8
388	0.8	<0.4
389	96.0	1.8
390	49.5	21.6
391	1.1	7.1
392	60.8	<0.3
393	>85	1.9
394	96.3	<0.4
395	3.8	<0.4
396	28.0	<0.4
397	15.9	<0.3
398	79.2	39.7
399	54.1	3.4
400	97.1	0.6
406	>90	12.4
407	2.7	<0.3
408	1.9	<0.4
409	1.3	1.9
410	1.1	<0.3
411	3.1	3.0
412	0.6	1.5
413	37.0	2.9

比較例	溶解度（μg／mL）	
	第1液	第2液
1	< 0.3	< 0.3

【0160】由以上結果可明顯確認，本發明化合物具有優異之LPL活性，且於胃液或腸液模式液中具有優異溶解度。因此，本發明之化合物在高血脂症、動脈硬化或肥胖之預防或治療上甚有用。

公告本 【發明申請專利範圍】

【第1項】 一種下述通式(1)所示苯基咪唑化合物或其藥學上可接受之鹽：



(1)

[式中，R^1為

(1-1)氫原子；

(1-2)吡唑基；

(1-3)嘧啶基；

(1-4)吡啶基，其具有1或2個選自於由鹵素原子、氰基、C1~C6烷基、C1~C6烷基磺醯基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基；

(1-5)具有C1~C6烷基之噁唑基；

(1-6)吡咔基，其可經選自於由鹵素原子及C1~C6烷基所構成群組中之至少一種基取代；

(1-7)苯基，其具有1或2個選自於由鹵素原子及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基；

(1-8)(1-氧吡啶)基，其具有1或2個選自於由鹵素原子及經鹵素取代之C1~C6烷基所構成群組中之至少一種

基作為取代基；

(1-9)經鹵素原子取代之噻唑基；

(1-10)經C1~C6烷基取代之異噁唑基；

(1-11)經C3~C8環烷基取代之1,2,4-噁二唑基；或

(1-12)苯基；

R^2表示氫原子或C1~C6烷氧基；

R^3為

(3-1)氫原子、

(3-2)C1~C6烷氧基、

(3-3)C1~C6烷氧基C1~C6烷氧基、

(3-4)C1~C6烷基、

(3-5)鹵素原子、

(3-6)苄氧基、或

(3-7)羥基；

R^4為

(4-1)吡啶基，其可具有選自於由鹵素原子、氰基、羥基、吡咯啶基、C1~C6烷基、C1~C6烷硫基、C1~C6烷基磺醯基、C1~C6烷氧基及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基；

R^5為

(5-1)氫原子、

(5-2)C1~C6烷基、或

(5-3)C1~C6烷氧基；

R^6為

(6-1)氫原子、

(6-2)C1~C6烷氧基C1~C6烷基、或

(6-3)可經C3~C10環烷基取代之C1~C6烷基，

R^6僅取代在咪唑骨架1位之N及3位之N中之任一者上，且咪唑骨架3位之N與2位之C的鍵結為雙鍵時，R^6取代在1位之N上，3位之N與2位之C的鍵結為單鍵時，R^6則取代在3位之N上；

R^7為

(7-1)氫原子、

(7-2)鹵素原子、

(7-3)C1~C6烷基、

(7-4)羥甲基、

(7-5)經鹵素取代之C1~C6烷基、或

(7-6)氰基；

A在上述R^1為氫原子時為單鍵，R^1為氫原子以外之基時則為C1~C6伸烷基；

咪唑骨架3位之N與2位之C的鍵結為雙鍵時，2位之C與1位之N的鍵結為單鍵，3位之N與2位之C的鍵結為單鍵時，2位之C與1位之N的鍵結為雙鍵；

但，排除R^1~R^3與R^5~R^7全部為氫之化合物]。

【第2項】　如請求項1之苯基咪唑化合物或其藥學上可接受之鹽，其中R^4為吡啶基，該吡啶基可具有選自於由鹵素原子、氰基、羥基、吡咯啶基、C1~C6烷基、C1~C6烷氧基及經鹵素取代之C1~C6烷基所構成群組中

之至少一種基作為取代基。

【第3項】 如請求項1或2之苯基咪唑化合物或其藥學上可接受之鹽，其中R^1為(1-4)之基。

【第4項】 如請求項1或2之苯基咪唑化合物或其藥學上可接受之鹽，其中R^3為氫原子或C1~C6烷氧基，R^5為氫原子或C1~C6烷氧基。

【第5項】 如請求項1或2之苯基咪唑化合物或其藥學上可接受之鹽，其中R^4為具有鹵素原子作為取代基之吡啶基。

【第6項】 如請求項1或2之苯基咪唑化合物或其藥學上可接受之鹽，其中R^1為吡啶基，其具有1或2個選自於由鹵素原子及經鹵素取代之C1~C6烷基所構成群組中之至少一種基作為取代基。

【第7項】 如請求項1或2之苯基咪唑化合物或其藥學上可接受之鹽，其中R^2及R^5均為氫原子，R^3為C1~C6烷氧基。

【第8項】 如請求項1或2之苯基咪唑化合物或其藥學上可接受之鹽，其中R^6為氫原子，R^7為鹵素原子。

【第9項】 如請求項7之苯基咪唑化合物或其藥學上可接受之鹽，其中該苯基咪唑化合物係選自下列化合物：

・5-[[4-(5-氯-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-2-(三氟甲基)吡啶；

・2-[[4-(5-氯-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-3-氟-5-(三氟甲基)吡啶；

・2-[[4-(5-溴-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-3-氟-5-(三氟甲基)吡啶；

・3-氯-2-[[4-(5-氯-2-(6-氟吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-5-(三氟甲基)吡啶；

・2-[[4-(5-溴-2-(6-氯吡啶-3-基)-1H-咪唑-4-基)-3-甲氧基苯氧基]甲基]-5-(三氟甲基)吡啶；

・5-溴-2-[[4-(4-氯-2-(6-氟吡啶-3-基)-1H-咪唑-5-基)-3-甲氧基苯氧基]甲基]-3-氟吡啶；及

・5-[4-氯-5-[2-甲氧基-4-((6-三氟甲基)吡啶-2-基)甲氧基)苯基]-1H-咪唑-2-基)]-2-氟吡啶。

【第10項】一種醫藥組成物，含有如請求項1至9中任一項之化合物或其藥學上可接受之鹽。

【第11項】一種LPL活性化劑，含有如請求項1至9中任一項之化合物或其藥學上可接受之鹽。

【第12項】如請求項10之醫藥組成物，其係用以治療高血脂症、動脈硬化或肥胖。