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(54) Title: ARYLAMINOMETHYL PROPENYL BENZHYDROXYAMID DERIVATIVES WITH INHIBITORY ACTIVITY AGAINST HISTONE DEACETYLASE AND METHOD FOR THE PREPARATION THEREOF

(57) Abstract: This invention discloses a novel arylaminomethyl propenyl benzhydroxyamide derivative of formula (I) useful for preventing or treating various diseases induced by histone deacetylase, a method for preparing same and a pharmaceutical composition comprising same.



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**ARYLAMINOMETHYL PROPENYL BENZHYDROXYAMIDE
DERIVATIVES WITH INHIBITORY ACTIVITY AGAINST
HISTONE DEACETYLASE AND METHOD FOR THE
PREPARATION THEREOF**

5

FIELD OF THE INVENTION

The present invention relates to a novel arylaminomethyl propenyl benzhydroxyamide derivative, a method for preparing same and a
10 pharmaceutical composition comprising same.

BACKGROUND OF THE INVENTION

Histones associate with DNAs in the nuclei of eukaryotic cells as basic
15 proteins and are subject to reversible acetylation at the amino groups of their lysine residues. The reversible acetylation is involved in the formation of chromatin higher order structures, the cell division cycle and ultimately the gene expression, and can be regulated by the dynamic equilibrium established between the opposing activities of histone acetyl transferases (HATs) and
20 histone deacetylases (HDACs): HATs neutralize the positive charges of the lysine residues (e.g., 4 residues in H4) to an facilitate transcriptional activity and HDACs restore the positive charges by deacetylation to inhibit gene transcription.

HDACs play an important role in cell cancerization or differentiation;
25 their expression is enhanced under conditions such as hypoxia, lowered glucose, and cell cancerization, to inhibit the expression of cell proliferation inhibitors. That is, histone deacetylation by HDAC causes cell proliferation, while hyperacetylation of histone facilitates the inhibition of cell proliferation and cell differentiation. Therefore, when HDACs are inhibited, cell
30 proliferation and angiogenesis can be controlled.

Abnormal histone deacetylation has been reported to cause acute promyelocytic leukemia (APL) (Lin R. J. et. al. *Oncogene* 20: 7204, 2001; Zelent A. et. al. *Oncogene* 20: 7186, 2001). Specifically, the abnormal

regulation of HDAC activity results in oncoprotein's transcriptional suppression and abnormal chromatin structures, which affect normal cells to induce cancer. Accordingly, HDAC has been a target for the study of anticancer drug as well as gene expression inhibitor to develop HDAC inhibitors to be used as anticancer drugs.

Recent studies of an anticancer drug through chromatin remodeling have shown that HDAC inhibitors such as suberoylanilide hydroxamic acid (SAHA) or apicidin inhibit the proliferation of cancer cells and induce cell differentiation (Munster P. N. et al., *Cancer research* 61: 8492, 2001; Han J. W. et. al. *Cancer research* 60: 6068, 2000).

Another HDAC inhibitor reported to be useful for the treatment of large intestine cancer as well as molecular biology test is n-butyrate used at a high concentration in the order of milimolar (mM) to control the function of other enzymes in cells, cytoskeleton, cell membrane, etc. Trichostatin A (TSA) has been reported to inhibit HDAC, which enhances the differentiation and suppresses the proliferation of Friend murine erythroleukemia cells (Yoshida M. et al., *Cancer research* 47: 3688, 1987; Yoshida M. & Beppu T. *Exp Cell Res.* 177: 122, 1988; Yoshida M. et al., *J of Biol. Chem.* 265: 17174, 1990).

Although a variety of HDAC inhibitors have been disclosed, there has been a need for developing more efficient HDAC inhibitors. Accordingly, the present inventors have found that a novel arylaminomethyl propenyl benzhydroxyamide derivative is an efficient inhibitor against cell proliferation which can be advantageously used for treating cancer.

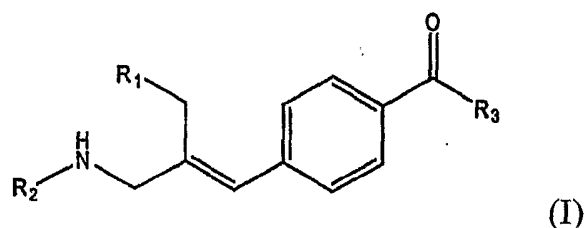
SUMMARY OF THE INVENTION

It is an object of the present invention to provide a novel compound which efficiently inhibits the activity of histone deacetylases, thereby suppressing the proliferation of tumor cells, and a method for preparing same.

It is another object of the present invention to provide a pharmaceutical composition comprising the inventive compound as an active ingredient for preventing or treating cancers or various diseases caused by excessive histone

deacetylase activity.

In accordance with one aspect of the present invention, there is provided an arylaminomethyl propenyl benzhydroxyamide derivative of formula (I) or a pharmaceutically acceptable salt thereof and a method for preparing same:



wherein,

R₁ is hydrogen, aryloxy, arylthio, arylimido, C₁₋₅ alkylimido, arylamido, C₁₋₅ alkylamido or arylsulfonamido, in which the aryl is phenyl, naphthyl or carbazole, each being optionally substituted with one or more substituents selected from the group consisting of hydroxy, C₁₋₅ alkyloxy, C₁₋₅ alkyl, aryl, C₁₋₅ alkylamino, cyano, cyanophenyl, C₁₋₅ alkylthio and nitro;

R₂ is phenyl which is optionally substituted with one or more substituents selected from the group consisting of hydroxy, C₁₋₅ alkyloxy, C₁₋₅ alkyl, C₁₋₅ alkylamino, cyano, cyanophenyl and mercaptoalkyl; or heteroaryl selected from the group consisting of piperazine, triazole, thiazole, benzothiazole, dibenzofurane, pyridine, quinoline and isoquinoline, the heteroaryl being optionally substituted with one or more substituents selected from the group consisting of halogen, C₁₋₅ alkyloxy, amino C₁₋₅ alkyloxy, C₁₋₅ alkyl, amino C₁₋₅ alkyl, C₁₋₅ alkylamino, aryl C₁₋₅ alkylamino and aryloxy C₁₋₅ alkylamino; and

R₃ is hydroxyamino.

In accordance with another aspect of the present invention, there is provided an anti-cancer composition comprising the compound of formula (I) as an active ingredient and a pharmaceutically acceptable carrier.

In accordance with still another aspect of the present invention, there is provided a pharmaceutical composition for preventing or treating a disease caused by excessive histone deacetylase activity, comprising the compound of formula (I) as an active ingredient and a pharmaceutically acceptable carrier.

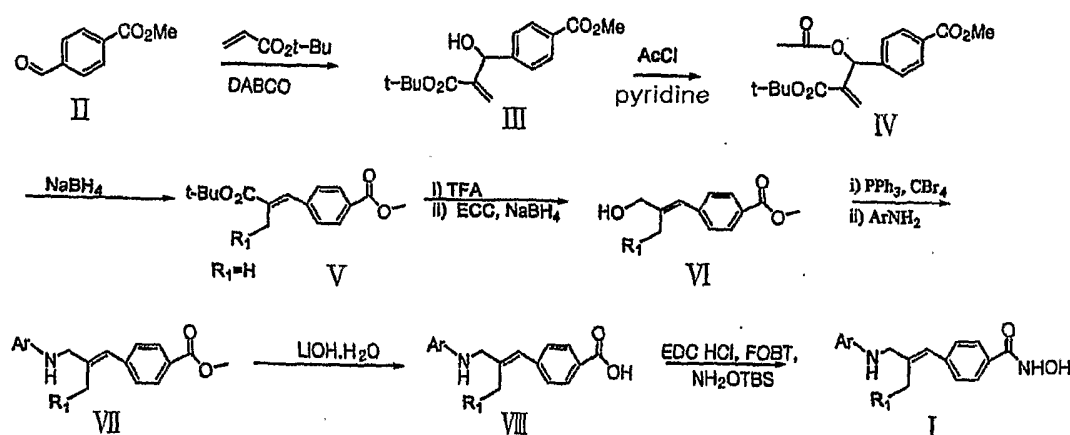
DETAILED DESCRIPTION OF THE INVENTION

The inventive compound of formula (I) may be used in the form of a pharmaceutically acceptable addition salt formed with an acid or base.

Examples of the acid include an inorganic acid such as hydrochloric, hydrobromic, phosphoric and sulfuric acids; and an organic acid such as acetic, trifluoroacetic, citric, formic, maleic, oxalic, succinic, benzoic, tartaric, fumaric, mandelic, ascorbic, malic acid, methanesulfonic and *p*-toluenesulfonic acids. Examples of the base include an inorganic base such as an alkali metal hydroxide (e.g., sodium hydroxide and potassium hydroxide), an alkali metal bicarbonate (e.g., sodium bicarbonate and potassium bicarbonate), an alkali metal carbonate (e.g., sodium carbonate, potassium carbonate and calcium carbonate) and an organic base such as amines.

The inventive compound of formula (I) may be prepared by any one of the synthetic routs shown in Reaction Schemes 1 to 3.

Reaction Scheme 1



Reaction Scheme 1 shows the synthetic procedure for preparing the compound of formula (I) wherein R₁=H, which comprises the steps of:

1) reacting 4-(methoxycarbonyl) benzaldehyde of formula (II) with *tert*-butyl acrylate in the presence of 1,4-diazabicyclo[2.2.2]octane (DABCO)

(i.e., Baylis-Hillman reaction) to obtain methyl 4-(2-*tert*-butoxycarbonyl-1-hydroxyallyl)-benzoate of formula (III);

2) reacting the compound of formula (III) with acetylchloride (AcCl) in the presence of pyridine to obtain the acetoxo compound of formula (IV);

3) treating the compound of formula (IV) with sodium borohydride (NaBH₄) in *tert*-butanol to convert the compound of formula (IV) into methyl 4-(2-*tert*-butoxycarbonyl propenyl)-benzoate of formula (V);

4) hydrolyzing the compound of formula (V) in trifluoroacetic acid (TFA) to form methyl carboxypropenylbenzoate, which is then treated with ethyl chloroformate (ECC) and reduced with sodium borohydride (NaBH₄) to obtain methyl hydroxymethylpropenyl benzoate of formula (VI);

5) reacting the compound of formula (VI) with tetrabromomethane (CBr₄) in the presence of triphenylphosphine (PPh₃) to form methyl bromomethylpropenyl benzoate, which is refluxed together with an arylamine (ArNH₂) to obtain methyl arylaminomethylpropenyl benzoate of formula (VII);

6) hydrolyzing the compound of formula (VII) with an inorganic base to obtain the compound of formula (VIII); and

7) acylating the compound of formula (VIII) with *tert*-butyldimethylsilyloxyamine (NH₂OTBS) in an organic solvent in the presence of N-hydroxy-6-trifluoro benzotriazole (FOBT) and 1-(3-diethylaminopropyl)-3-ethylcarbodiimide hydrochloride (EDC·HCl), and removing the *tert*-butyldimethylsilyl group from the resulting product with a water-soluble inorganic acid to obtain a compound of formula (I).

In step 1) of Reaction Scheme 1, an alkoxycarbonyl hydroxyl allyl compound is obtained by the Baylis-Hillman reaction carried out between an aldehyde and an alkylacrylate in the presence of 1,4-diazabicyclo[2.2.2]octane (DABCO).

The ECC treatment in step 4) is carried out using tetrahydrofuran as a solvent over an ice bath.

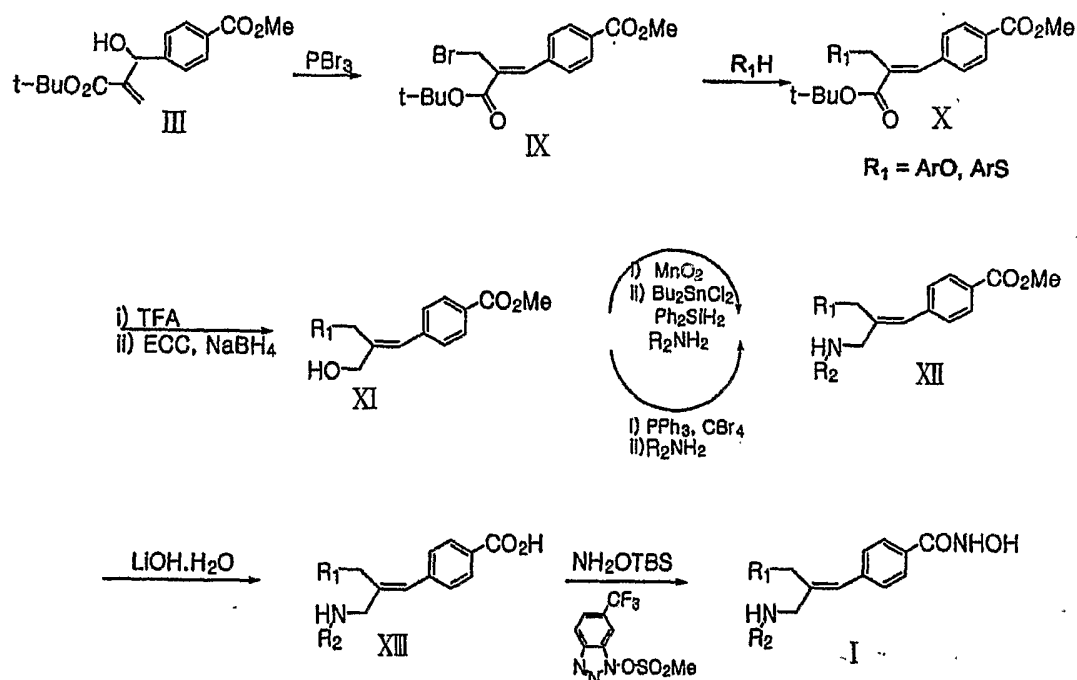
The amine reaction in step 5) is carried out using acetone or acetonitrile as a solvent in the presence of potassium carbonate.

The reaction of step 6) is preferably carried out using an aqueous

solution of an alcohol, preferably methanol, ethanol or isopropanol, or an aqueous tetrahydrofuran as a solvent, and lithium hydroxide ($\text{LiOH}\cdot\text{H}_2\text{O}$) or sodium hydroxide as an inorganic base.

Also, it is preferred that the reaction step 7) is carried out using N,N -dimethylformamide as the solvent together with hydrochloric acid or sulfuric acid as the water-soluble inorganic acid.

Reaction Scheme 2



Reaction Scheme 2 shows the synthetic procedure for preparing the compound of formula (I) wherein $\text{R}_1 = \text{ArO}$ or ArS , which comprises the steps of:

1) reacting methyl 4-(2-*tert*-butoxycarbonyl-1-hydroxyallyl)-benzoate of formula (III) with tribromophosphine (PBr_3) in ethyl ether to obtain methyl 4-(3-bromo-2-*tert*-butoxycarbonyl-propenyl)-benzoate of formula (IX);

2) reacting the compound of formula (IX) with a nucleophilic agent (R_1H) to obtain a methyl 4-(3-substituted-2-*tert*-butoxycarbonyl-propenyl)-benzoate of formula (X);

3) hydrolyzing the compound of formula (X) in trifluoroacetic acid (TFA) to form a methyl carboxypropenylbenzoate, which is then treated with ethyl chloroformate (ECC) and reduced with sodium borohydride (NaBH_4) to obtain a methyl hydroxymethylpropenyl benzoate of formula (XI);

5 4) refluxing the compound of formula (XI) with manganese dioxide (MnO_2) in dichloromethane to form an aldehyde, which is then reacted with arylamine (ArNH_2) or arylalkylamine in the presence of dibutyldichlorotin (Bu_2SnCl_2) and diphenylsilane (Ph_2SiH_2) to obtain a methyl arylaminomethylpropenyl benzoate of formula (XII);

10 5) treating the compound of formula (XII) with an inorganic base to obtain a compound of formula (XIII); and

6) acylating the compound of formula (XIII) with *tert*-butyldimethylsilyloxyamine (NH_2OTBS) and removing the *tert*-butyldimethylsilyl group from the resulting product with a water-soluble
15 inorganic acid to obtain a compound of formula (I).

In Reaction Scheme 2, step 2) is carried out using an arylalcohol or arylthiol as a nucleophilic agent in an organic solvent such as acetone or acetonitrile in the presence of an organic or inorganic base such as triethylamine and potassium carbonate.

20 The ECC treatment in step 3) is carried out using tetrahydrofuran as a solvent over an ice bath.

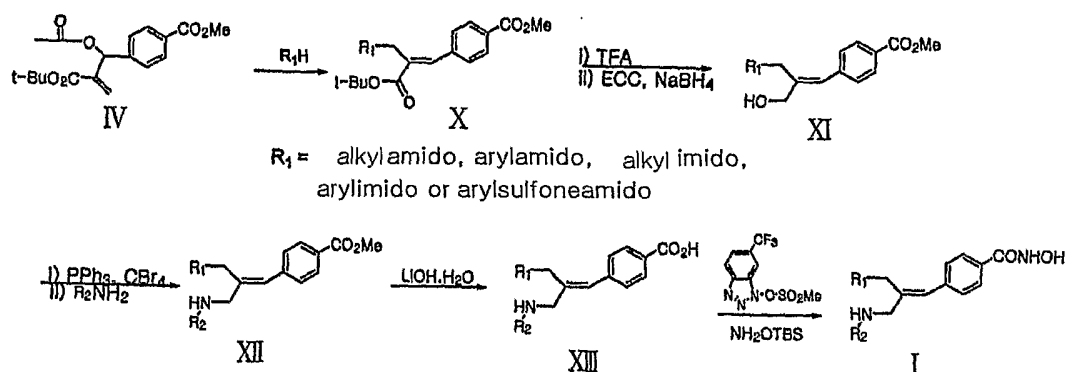
Step 5) of Reaction Scheme 2 is preferably carried out using an aqueous solution of an alcohol, preferably methanol, ethanol or isopropanol, or an aqueous tetrahydrofuran as the solvent, and lithium hydroxide ($\text{LiOH}\cdot\text{H}_2\text{O}$) or sodium hydroxide as the inorganic base.
25

Also, it is preferred that step 6) is carried out using *N,N*-dimethylformamide as the solvent in the presence of *N*-methansulfonyloxy-6-trifluoro benzotriazole, and hydrochloric acid or sulfuric acid as the water-soluble inorganic acid.

30 In the present invention, a methyl arylaminomethylpropenyl benzoate of formula (XII) may also be obtained by an alternative method, for example, reacting the compound of formula (XI) with tetrabromomethane (CBr_4) in the presence of triphenylphosphine (PPh_3) to form a methyl

bromomethylpropenyl benzoate and refluxing the resulting product together with an arylamine or arylalkylamine using acetone or acetonitrile as a solvent in the presence of potassium carbonate.

5 Reaction Scheme 3



Reaction Scheme 3 shows the synthetic procedure for preparing the compound of formula (I) wherein $R_1 =$ alkylamido, arylamido, alkylimido, arylimido or arylsulfonamido, which comprises the steps of:

1) reacting methyl 4-(1-acetoxy-2-*tert*-butoxycarbonyl-allyl)-benzoate of formula (IV) with a nucleophilic agent (R_1H) to obtain a methyl 4-(3-substituted-2-*tert*-butoxycarbonyl-propenyl)-benzoate of formula (X);

2) hydrolyzing the compound of formula (X) in trifluoroacetic acid (TFA) to form a methyl carboxypropenylbenzoate, which is then treated with ethyl chloroformate (ECC) and reduced with sodium borohydride ($NaBH_4$) to obtain a methyl hydroxymethylpropenyl benzoate of formula (XI);

3) reacting the compound of formula (XI) with tetrabromomethane (CBr_4) in the presence of triphenylphosphine (PPh_3) to form a methyl bromomethylpropenyl benzoate, which is refluxed together with an arylamine or arylalkylamine to obtain a methyl arylaminomethylpropenyl benzoate of formula (XII);

4) treating the compound of formula (XII) with an inorganic base to obtain a compound of formula (XIII); and

5) acylating the compound of formula (XIII) with *tert*-

butyldimethylsilyloxyamine (NH_2OTBS) and removing the *tert*-butyldimethylsilyl group from the resulting product with a water-soluble inorganic acid, to obtain a compound of formula (I).

In Reaction Scheme 3, step 1) is carried out using alkylamide, arylamide, alkylimide, arylimide or arylsulfonamide as the nucleophilic agent in the presence of triethylamine or potassium carbonate as an organic or inorganic base.

The ECC treatment in step 2) is carried out using tetrahydrofuran as the solvent over an ice bath, and the amine reaction in step 3) is carried out using acetone or acetonitrile as the solvent in the presence of potassium carbonate.

Step 4) of Reaction Scheme 3 is carried out using an aqueous solution of an alcohol, preferably methanol, ethanol or isopropanol, or an aqueous tetrahydrofuran as the solvent, and lithium hydroxide or sodium hydroxide as the inorganic base.

Step 5) is carried out using *N,N*-dimethylformamide as a solvent, and hydrochloric acid or sulfuric acid as the water-soluble inorganic acid, in the presence of *N*-methanesulfonyloxy-6-trifluoro benzotriazole.

The inventive arylaminomethyl propenyl benzhydroxyamide derivative of formula (I) efficiently inhibits the activity of histone deacetylase to suppress the differentiation of tumor cells, thereby preventing the cancer-cell proliferation.

Accordingly, the present invention also provides an anti-cancer composition comprising the compound of formula (I) as an active ingredient and a pharmaceutically acceptable carrier.

Further, the present invention provides a pharmaceutical composition for preventing or treating a disease caused by excessive histone deacetylase activity such as osteoporosis and central nervous system disorders (e.g., Alzheimer's disease), comprising the compound of formula (I) as an active ingredient and a pharmaceutically acceptable carrier.

The inventive pharmaceutical composition comprises the compound of formula (I) as an active ingredient in an amount ranging from 0.1 to 75 wt%, preferably 1 to 50 wt%, based on the total weight of the composition.

The pharmaceutical composition may be formulated for oral or parenteral administration. The formulation for oral administration may take various forms such as tablet, pill, powder, sachet, soft and hard capsule, solution, suspension, emulsion, syrup, granule and the like, which may contain conventional additives such as a diluent (e.g., lactose, dextrose, sucrose, mannitol, sorbitol, cellulose and/or glycine), a lubricant (e.g., silica, talc, stearic acid or its zinc, magnesium or calcium salt, and/or polyethylene glycol). A tablet form may also comprise a binder such as magnesium aluminum silicate, starch paste, gelatin, tragacanth, methyl cellulose, sodium carboxymethyl cellulose and/or polyvinylpyrrolidone, and optionally a disintegrant such as starch, agar, alginic acid or its sodium salt, an effervescent mixture, an absorbent, a colorant, a flavor and a sweetener. For parenteral administration, sterile injectable formulations such as isotonic solution and suspension may be preferred.

The composition may be sterilized, additionally include preservatives, stabilizers, wetting agents, emulsifying agents, osmotic pressure-adjusting agents, buffering agents and the like, and may be formulated through a conventional mixing, granulating or coating procedures.

A typical daily dose of the compound of formula (I) ranges from about 2.5 to 100 mg/kg, preferably 5 to 60 mg/kg for mammals including a human subject, and can be orally or parenterally administered in a single dose or in divided doses.

The present invention is further described and illustrated in Examples provided below, which are, however, not intended to limit the scope of the present invention.

EXAMPLE

Preparation Example 1: *tert*-Butyl 3-hydroxy-2-methylene-3-[4-(methoxycarbonyl) phenyl] propanate (III)

4-(Methoxycarbonyl) benzaldehyde (II) (3.3 g, 20 mM), *tert*-butyl acrylate (3.5 ml, 24 mM) and 1,4-diazabicyclo[2,2,2]octane (449 mg, 4 mM) were placed in a sealed vessel and stirred at room temperature for 5 days.

The reaction mixture was extracted with diethyl ether, the extract was successively washed with 2 N hydrochloric acid, water and sodium bicarbonate, dried over anhydrous sodium sulfate and filtered. The filtrate was concentrated under a reduced pressure. The resulting residue was purified by silica gel column chromatography to obtain the title compound as a white solid (4.2 g, 73 %).

^1H NMR (300 MHz, CDCl_3) δ 1.40 (s, 9H), 3.28 (m, 1H), 3.91 (s, 3H), 5.53 (d, 1H, $J=5.2$ Hz), 5.71 (s, 1H), 6.27 (s, 1H), 7.45 (d, 2H, $J=8.0$ Hz), 7.81 (d, 2H, $J=8.0$ Hz)

MS (EI, 70 eV) m/z 292(M^+), 283, 255, 241, 227, 201, 189, 179, 150, 135;
Melting Point: 70 °C

Preparation Example 2: Methyl 4-(1-acetoxy-2-*tert*-butoxycarbonylallyl) benzoate (IV)

tert-Butyl 3-hydroxy-2-methylene-3-[4-(methoxycarbonyl) phenyl] propanate (III) (305 mg, 1.04 mM) and pyridine (0.20 mL, 2.50 mM) were dissolved in anhydrous methylene chloride (3 mL), to which acetylchloride (0.149 mL, 2.08 mM) was slowly added at 0 °C, followed by stirring the mixture at room temperature for 10 minutes. After completing the reaction, the resulting mixture was extracted with diethyl ether, the extract was successively washed with 2 N hydrochloric acid, water and sodium bicarbonate, dried over anhydrous sodium sulfate and filtered. The filtrate was concentrated under a reduced pressure and purified by silica gel column chromatography, to obtain the title compound as a white solid (337 mg, 97%).

^1H NMR (300 MHz, CDCl_3) δ 1.37 (s, 9H), 2.11 (s, 3H), 3.91 (s, 3H), 5.76 (s, 1H), 6.34 (s, 1H), 6.68 (s, 1H), 7.44 (d, 2H, $J=8.4$ Hz), 8.01 (d, 2H, $J=8.0$ Hz)

MS (EI, 70 eV) m/z 334(M^+), 325, 297, 283, 255, 241, 202, 179, 162, 135, 111;

Melting Point: 59 °C

Preparation Example 3: Methyl 4-(2-*tert*-butoxycarbonylpropenyl) benzoate (V)

Methyl 4-(1-acetoxy-2-*t*-butoxycarbonylallyl) benzoate (IV) (350 mg, 1.04 mM) was dissolved in anhydrous *tert*-butanol (10 mL), to which sodium borohydride (78 mg, 2.08 mM) was slowly added, followed by stirring the mixture at room temperature for 3 hours. After completing the reaction, *tert*-butanol was distilled under a reduced pressure and ice water was poured thereinto. The resulting mixture was extracted with diethyl ether and the organic layer was washed with brine. The resulting residue was dried over anhydrous sodium sulfate and filtered. The filtrate was distilled under a reduced pressure, concentrated and purified by silica gel column chromatography to obtain the title compound as a white solid (230 mg, 73%).

¹H NMR (300 MHz, CDCl₃) δ 1.46 (s, 9H), 2.12 (s, 3H), 3.82 (s, 3H), 7.68 (s, 1H), 7.83 (d, 2H, J=8.0 Hz), 7.90 (d, 2H, J=8.0 Hz)

MS (EI, 70 eV) m/z 276(M⁺), 269, 255, 241, 233, 219, 202, 179, 166, 135

Preparation Example 4: Methyl 4-(2-carboxypropenyl) benzoate

Methyl 4-(2-*tert*-butoxycarbonyl-propenyl) benzoate (V) (670 mg, 2.43 mM) was dissolved in methylene chloride (30 mL), to which trifluoroacetic acid (3.0 mL) was added dropwise, followed by stirring the mixture at room temperature for 5 hours. After completing the hydrolysis, the solvent was removed under a reduced pressure to obtain the title compound as a light yellow solid for using quantitatively in the next reaction.

Preparation Example 5: Methyl 4-(3-hydroxy-2-methylpropenyl) benzoate (VI)

Methyl 4-(2-carboxy-propenyl) benzoate (220 mg, 1.00 mM) was dissolved in tetrahydrofuran (10 mL), to which triethylamine (209 μL, 1.05 mM) and ethyl chloroformate (0.124 mL, 1.3 mM) were added at 0°C, followed by stirring for 1 hour. Sodium borohydride (192 mg, 5.00 mM) was added to the reacting solution and distilled water (2 mL) was slowly

added dropwise thereto, followed by stirring the mixture at room temperature for 2.5 hours. The reaction solution was treated with 1 N hydrochloric acid to adjust pH thereof to 2, extracted with ethyl acetate, and the organic layer was washed with saturated sodium bicarbonate. The resulting residue was dried over anhydrous sodium sulfate, filtered and purified by silica gel column chromatography to obtain the title compound as a white solid (89%).

^1H NMR (200 MHz, CDCl_3) δ 1.91 (s, 3H, CH_3), 3.91 (s, 3H, OCH_3), 4.21 (m, 2H, CH_2), 6.51 (m, 1H, CH), 7.33 (d, 2H, $J=8.14$ Hz, ArH), 7.99 (d, 2H, $J=8.45$ Hz, ArH)

MS (EI, 70eV) m/z 206(M^+), 191, 189

Preparation Example 6: Methyl 4-(3-bromo-2-methylpropenyl) benzoate

Methyl 4-(3-hydroxy-2-methylpropenyl) benzoate (VI) (734 mg, 3.56 mM) was dissolved in dichloromethane (25 mL), to which triphenylphosphine (1.4 g, 5.338 mM) was added and the mixture was cooled to 0°C . Then, tetrabromomethane (1.77 mg, 5.338 mM) was added thereto and stirred for 6 hours. The solvent was removed under a reduced pressure and the resulting residue was purified by silica gel column chromatography to obtain the title compound as a white solid (99%).

^1H NMR (200 MHz, CDCl_3) δ 2.03 (s, 3H, CH_3), 3.91 (s, 3H, OCH_3), 4.13 (s, 3H, CH_3), 6.63 (d, 1H, $J=9.4$ Hz, CH), 7.33 (d, 2H, $J=8.1$ Hz, ArH), 8.00 (d, 2H, $J=8.5$ Hz, ArH)

MS (EI 70eV) 269(M^+), 277, 225, 189, 139

Preparation Example 7: Methyl 4-(3-bromo-2-*tert*-butoxycarbonylpropenyl)- benzoate (IX)

tert-Butyl-3-hydroxy-2-methylene-3-(4-methoxycarbonylphenyl)-propanate (III) (994 mg 3.4 mM) was dissolved in ethyl ether (10 mL) and cooled to 0°C , to which tribromophosphine (0.35 mL 3.74 mM) was added dropwise, followed by stirring the mixture at room temperature for 1 hour. After completing the reaction, ice water was poured into the reaction mixture

and the mixture was extracted with ethyl ether. The organic layer was washed with brine, dried over anhydrous magnesium sulfate and filtered. The solvent was removed under a reduced pressure and the resulting residue was purified by silica gel column chromatography to obtain the title compound as a yellow green solid (71 %).

^1H NMR (300 MHz, CDCl_3) δ 1.40 (s, 9H, OCH_3), 3.88 (s, 3H, OCH_3), 3.97 (s, 2H, CH_2), 7.41 (d, 2H $J=8.4$ Hz, ArH), 7.50 (s, 1H), 7.91 (d, 2H, $J=8.4$ Hz, ArH)

MS (EI, 70eV) m/z 355 (M^+), 338, 296, 278, 259, 219, 187, 143, 115

Melting Point: 78 °C

Example 1: 4-[3-(Quinoline-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(quinoline-3-ylamino)-2-methylpropenyl] benzoate

Methyl 4-(3-bromo-2-*tert*-butoxycarbonylpropenyl)-benzoate (IX) (269 mg, 1 mM) and 3-aminoquinoline (173 mg, 1.2 mM) were dissolved in acetone (8 mL), to which potassium carbonate (207 mg, 1.5 mM) was added, followed by refluxing for 5 hours. After completing the reaction, the resulting mixture was cooled to room temperature, filtered and concentrated under a reduced pressure. The resulting residue was purified by silica gel column chromatography to obtain the title compound (36 %).

^1H NMR (300 MHz, CDCl_3) δ 1.99 (s, 3H), 3.91 (s, 3H), 4.05 (d, 2H, $J=5.7$ Hz), 4.36 (t, 1H, $J=5.5$ Hz), 6.61 (s, 1H), 7.06 (d, 1H, $J=2.8$ Hz), 7.31 (d, 2H, $J=8.3$ Hz), 7.42 (m, 2H), 7.61 (m, 1H), 7.93 (m, 1H), 7.96 (d, 2H, $J=9.8$ Hz), 8.51 (d, 1H, $J=2.8$ Hz)

MS (EI, 70eV, m/z) 333 (M^{+1}), 189, 157, 145, 130, 115, 105, 91

Step 2: 4-[3-(Quinoline-3-ylamino)-2-methylpropenyl] benzoic acid

Methyl 4-[3-(quinoline-3-ylamino)-2-methylpropenyl] benzoate (110 mg, 0.331 mM) was dissolved in 30% aqueous ethanol solution (3 mL), to which lithium hydroxide (139 mg, 3.31 mM) was added, followed by stirring

at 50 °C for 3 hours. After completing the reaction, the resulting mixture was cooled and ethanol was removed under a reduced pressure. The resulting residue was diluted with water, acidified (pH=3.5) with 2 N hydrochloric acid and the resulting solid was filtered and dried to obtain the title compound as a white solid (86%).

¹H NMR (300 MHz, DMSO-d₆), δ 1.94 (s, 3H), 3.93 (s, 2H), 6.65 (d, 1H, J=2.1 Hz), 6.79 (t, 1H), 7.08 (s, 1H), 7.39 (m, 4H), 7.66 (d, 1H, J=7.8 Hz), 7.79 (d, 1H, J=8.1 Hz), 7.91 (d, 2H, J=8.1 Hz), 8.57 (d, 1H, J=2.7 Hz), 12.86 (bs, 1H)

MS (EI, 70eV, m/z) 318, 277, 183, 157, 144, 131, 116, 101, 91, 77

Step 3: 4-[3-(Quinoline-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

4-[3-(Quinoline-3-ylamino)-2-methylpropenyl] benzoic acid (73 mg, 0.230 mM) was dissolved in dimethylformamide (2 mL) and triethylamine (96 μL, 0.690 mM) was added thereto. The mixture was cooled to 0 °C and N-hydroxy-6-trifluoro benzotriazole (47 mg, 0.230 mM), 1-(3-diethylaminopropyl)-3-ethylcarbodiimide hydrochloride (67 mg, 0.345 mM) and *tert*-butyldimethylsilyloxyamine (51 mg, 0.345 mM) were added thereto, followed by stirring the mixture at room temperature for 4 hours. After completing the reaction, ice water was added to the resulting mixture, which was extracted with ethyl acetate. The organic layer was washed with saturated sodium bicarbonate and brine, dried over anhydrous magnesium sulfate and concentrated under a reduced pressure. The resulting residue was purified by silica gel column chromatography to obtain the title compound (42%).

¹H NMR (300 MHz, DMSO-d₆), δ 1.93 (s, 3H), 3.91 (s, 2H), 6.57 (s, 1H), 6.74 (t, 1H, J=5.7 Hz), 7.06 (d, 1H, J=2.4 Hz), 7.35 (m, 4H), 7.70 (m, 4H), 8.55 (d, 1H, J=2.7 Hz), 8.98 (s, 1H), 11.16 (s, 1H)

MS (EI, 70eV), m/z 333, 318, 289, 172, 144, 131, 116, 91, 77

Example 2: 4-[3-(3-Benzyloxy-phenylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(3-benzyloxyphenylamino)-2-methylpropenyl] benzoate

5 The procedure of Step 1 of Example 1 was repeated except for using 3-benzyloxyphenylamine as the starting material to obtain the title compound (60%).

¹H NMR (300 MHz, CDCl₃), δ 1.89 (s, 3H), 3.83 (s, 2H), 3.91 (s, 3H), 5.03
10 (s, 2H), 6.28 (m, 2H), 6.37 (m, 1H), 6.55 (s, 1H), 7.08 (m, 1H), 7.39 (m, 7H), 7.98 (d, 2H, J=8.4 Hz)

MS (EI, 70eV), m/z 388(M⁺), 372, 296, 189, 157, 130, 115, 91

Step 2 : 4-[3-(3-Benzyloxy-phenylamino)-2-methylpropenyl] benzoic acid

15 The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(3-benzyloxyphenylamino)-2-methylpropenyl] benzoate to obtain the title compound (92%).

¹H NMR (300 MHz, DMSO-d₆), δ 1.88 (s, 3H), 3.82 (d, 2H, J=5.3 Hz), 5.08
20 (s, 2H), 6.16 (t, 1H, J=5.2 Hz), 6.30 (m, 3H), 6.55 (s, 1H), 7.04 (t, 1H, J=8.1 Hz), 7.29 (d, 2H, J=8.1 Hz), 7.43 (m, 5H), 7.94 (d, 2H, J=8.1 Hz)

MS (EI, 70eV), m/z 374(M⁺), 282, 212, 131, 91, 77, 65

Step 3: 4-[3-(3-Benzyloxy-phenylamino)-2-methylpropenyl]-N-hydroxy benzamide

25 The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(3-benzyloxy-phenylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (12%).

¹H NMR (300 MHz, DMSO-d₆), δ 1.89 (s, 3H), 3.77 (d, 2H, J=5.1 Hz), 5.03
30 (s, 2H), 6.09 (m, 1H), 6.24 (m, 3H), 6.49 (s, 1H), 6.98 (t, 1H, J=7.6 Hz), 7.35 (m, 9H), 7.75 (d, 2H, J=8.2 Hz)

MS (EI, 70eV), m/z 388, 344, 146, 131, 106, 91, 77

Example 3: 4-[3-(3,4-Dihydro-11H-isoquinoline-2-yl)-2-methylpropenyl]-N-hydroxy benzamide

5 **Step 1: Methyl 4-[3-(3,4-dihydro-11H-isoquinoline-2-yl)-2-methylpropenyl] benzoate**

The procedure of Step 1 of Example 1 was repeated except for using 1,2,3,4-tetrahydroisoquinoline as the starting material to obtain the title compound (73%).

10

^1H NMR (300 MHz, CDCl_3), δ 1.98 (s, 3H), 2.75 (t, 2H, $J=5.7$ Hz), 2.92 (t, 2H, $J=5.7$ Hz), 3.21 (s, 2H), 3.64 (s, 2H), 3.92 (s, 3H), 6.54 (s, 1H), 7.03 (m, 1H), 7.12 (m, 3H), 7.37 (d, 2H, $J=8.4$ Hz), 8.01 (d, 2H, $J=8.4$ Hz)
MS (EI, 70eV, m/z) 321, 216, 172, 146, 132, 115, 104, 91, 77

15

Step 2: 4-[3-(3,4-Dihydro-11 H-isoquinoline-2-yl)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(3,4-dihydro-11H-isoquinoline-2-yl)-2-methylpropenyl] benzoate to obtain the title compound (49%).

20

^1H NMR (300 MHz, $\text{DMSO}-d_6$), δ 2.08 (s, 3H), 3.17 (s, 2H), 3.98 (s, 4H), 4.35 (s, 2H), 6.84 (s, 1H), 7.26 (m, 4H), 7.53 (d, 2H, $J=8.4$ Hz), 7.98 (d, 2H, $J=8.1$ Hz), 10.60 (bs, 1H)

25

MS (EI, 70eV, m/z) 308(M^{+1}), 202, 172, 146, 132, 115, 104, 91, 77

Step 3: 4-[3-(3,4-Dihydro-11H-isoquinoline-2-yl)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(3,4-dihydro-11H-isoquinoline-2-yl)-2-methylpropenyl] benzoic acid to obtain the title compound (74%).

30

^1H NMR (300 MHz, $\text{MeOH}-d_4$) δ 1.9 (s, 3H), 2.7-2.8 (q, 2H, $J=12.8, 5.6$ Hz),

2.9-3.0 (t, 2H, J=12.4, 6.0 Hz), 3.2 (s, 2H), 3.65-3.68 (d, 1H, J=8.2 Hz), 6.5 (s, 1H), 7.1-7.2 (m, 4H), 7.28-7.32 (d, 2H, J=8.2 Hz), 8.0-8.1 (dd, 2H, J=6.4, 2.7 Hz)

MS (LC, 70 eV) m/z 324 (M^{+1})

Example 4: 4-[3-(Quinoline-8-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(quinoline-8-ylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 8-aminoquinoline as the starting material to obtain the title compound (62%).

^1H NMR (300 MHz, CDCl_3), δ 1.99 (s, 3H), 3.90 (s, 3H), 4.14 (s, 2H), 6.45 (bs, 1H), 6.71 (d, 1H, J=7.8 Hz), 7.08 (d, 1H, J=8.1 Hz), 7.39 (m, 5H), 7.98 (d, 2H, J=8.1 Hz), 8.07 (d, 1H, J=8.1 Hz), 8.74 (m, 1H)

MS (EI, 70eV), m/z 332, 302, 183, 156, 144, 129, 115, 91, 77

Step 2: 4-[3-(Quinoline-8-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(quinoline-8-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (84%).

^1H NMR (300 MHz, $\text{DMSO}-d_6$), δ 1.93 (s, 3H), 4.08 (d, 2H, J=5.7 Hz), 6.55 (s, 1H), 6.68 (d, 1H, J=7.8 Hz), 7.00 (t, 1H, J=7.8 Hz), 7.08 (d, 1H, J=8.4 Hz), 7.35 (m, 3H), 7.50 (m, 1H), 7.89 (d, 2H, J=8.1Hz), 8.23 (dd, 1H, J=1.2 Hz, 8.1 Hz), 8.77 (dd, 1H, J=1.5 Hz, 4.2 Hz), 12.85 (bs, 1H)

MS (EI, 70eV, m/z) 318, 288, 183, 156, 144, 129, 115, 91, 77

Step 3: 4-[3-(Quinoline-8-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(quinoline-8-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (36%).

MS (EI, 70eV, m/z) 333, 318, 289, 183, 156, 144, 129, 115, 91, 77

Example 5: 4-[3-(4-Phenyloxy-phenylamino)-2-methylpropenyl]-N-hydroxy benzamide

5

Step 1 : Methyl 4-[3-(4-phenyloxy-phenylamino)-2-methylpropenyl] benzoate

10

The procedure of Step 1 of Example 1 was repeated except for using 4-phenyloxyphenylamine as the starting material to obtain the title compound (54%).

¹H NMR (300 MHz, CDCl₃), δ 1.94 (s, 3H), 3.83 (s, 2H), 3.88 (bs, 1H), 3.91 (s, 3H), 6.57 (s, 1H), 6.64 (d, 2H, J=8.7 Hz), 6.92 (m, 5H), 7.26 (d, 2H, J=7.2 Hz), 7.32 (d, 2H, J=8.7 Hz), 7.99 (d, 2H, J=8.1 Hz)

15

MS (EI, 70eV, m/z) 373, 358, 305, 198, 184, 157, 129, 115, 105, 77

Step 2: 4-[3-(4-Phenyloxy-phenylamino)-2-methylpropenyl] benzoic acid

20

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(4-phenyloxy-phenylamino)-2-methylpropenyl] benzoate to obtain the title compound (43%).

25

¹H NMR (300 MHz, DMSO-d₆, δ) 1.90 (s, 3H), 3.77 (s, 2H), 4.11 (s, 1H), 6.36 (s, 1H), 6.65 (d, 1H, J=8.8 Hz), 6.76 (m, 1H), 6.84 (d, 2H, J=8.5 Hz), 6.91 (d, 2H, J=9.0 Hz), 7.01 (m, 1H), 7.29 (t, 2H, J=7.8 Hz), 7.38 (d, 2H, J=8.1 Hz), 7.91 (d, 2H, J=8.0 Hz), 8.05 (d, 1H, J=8.3 Hz)

MS (EI, 70eV, m/z) 360(M⁺), 318, 198, 184, 131, 115, 91, 77

Step 3: 4-[3-(4-Phenyloxy-phenylamino)-2-methylpropenyl]-N-hydroxy benzamide

30

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(4-phenyloxy-phenylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (7%).

¹H NMR (300 MHz, DMSO-d₆, δ) 1.90 (s, 3H), 3.77 (s, 2H), 4.11 (s, 1H), 6.36 (s, 1H), 6.65 (d, 1H, J=8.8 Hz), 6.76 (m, 1H), 6.84 (d, 2H, J=8.5 Hz), 6.91 (d, 2H, J=9.0 Hz), 7.01 (m, 1H), 7.29 (t, 2H, J=7.8 Hz), 7.38 (d, 2H, J=8.1 Hz), 7.91 (d, 2H, J=8.0 Hz), 8.05 (d, 1H, J=8.3 Hz)

Example 6: 4-[3-(4-Dimethylamino-phenylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(4-dimethylamino-phenylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 4-dimethylamino-phenylamine as the starting material to obtain the title compound (30%).

¹H NMR (300 MHz, CDCl₃) δ 1.9 (s, 6H), 2.8 (s, 3H), 3.7 (s, 3H), 3.9 (s, 2H), 6.4 (s, 1H), 6.5-6.7 (m, 4H), 7.2-7.3 (d, 2H, J=8.3 Hz), 7.96-7.99 (d, 2H, J=8.3 Hz)

MS (LC, 70 eV) m/z 326 (M⁺), 325, 324, 323

Step 2: 4-[3-(4-Dimethylamino-phenylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(4-Dimethylamino-phenylamino)-2-methylpropenyl] benzoate to obtain the title compound (66%).

MS (LC, 70 eV) m/z 312 (M⁺), 311, 310, 309

Step 3: 4-[3-(4-Dimethylamino-phenylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(4-dimethylamino-phenylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (82%).

¹H NMR (300 MHz, MeOH-d₄) δ 1.9 (s, 6H), 4.1-4.2 (d, 2H, J=5.2 Hz), 6.3-

6.4 (d, 1H, J=5.4 Hz), 6.5-6.6 (d, 1H, J=8.4 Hz), 6.8-6.9 (m, 4H), 7.3-7.4 (d, 2H, J=8.4 Hz), 7.9-8.0 (dd, 2H, J=10.8, 5.4 Hz)

MS (LC, 70 eV) m/z 327 (M^{+1})

5 **Example 7: 4-[3-(Quinoline-5-ylamino)-2-methylpropenyl]-N-hydroxy benzamide**

Step 1: Methyl 4-[3-(quinoline-5-ylamino)-2-methylpropenyl] benzoate

 The procedure of Step 1 of Example 1 was repeated except for using 5-aminoquinoline as the starting material to obtain the title compound (60%).

10 ^1H NMR (300 MHz, CDCl_3) δ 1.9 (s, 3H), 3.9 (s, 3H), 4.0-4.1 (d, 2H, J=8.2 Hz), 6.4 (s, 1H), 7.2-7.3 (m, 4H), 7.4-7.5 (m, 2H), 7.97-7.99 (d, 2H, J=8.2 Hz), 8.25-8.28 (d, 1H, J=8.4 Hz), 8.85-8.87 (m, 1H)

MS (LC, 70 eV) m/z 334 (M^{+1})

15 **Step 2: 4-[3-(Quinoline-5-ylamino)-2-methylpropenyl] benzoic acid**

 The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(quinoline-5-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (88%).

20 MS (LC, 70 eV) m/z 320 (M^{+1})

Step 3: 4-[3-(Quinoline-5-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

25 The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(quinoline-5-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (81%).

30 ^1H NMR (300 MHz, MeOH-d_4) δ 1.9 (s, 3H), 4.02-4.12 (d, 2H, J=8.4 Hz), 6.4 (s, 1H), 7.25-7.29 (m, 4H), 7.4-7.5 (m, 2H), 7.97-7.99 (d, 2H, J=8.4 Hz), 8.21-8.25 (d, 1H, J=8.4 Hz), 8.84-8.89 (m, 1H)

MS (LC, 70 eV) m/z 335 (M^{+1})

Example 8: 4-[3-(Quinoline-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(quinoline-3-ylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using
5 3-aminoquinoline as the starting material to obtain the title compound (43 %).

¹H NMR (300 MHz, CDCl₃), δ 1.99 (s, 3H), 3.91 (s, 3H), 4.05 (d, 2H, J=5.7 Hz), 4.36 (t, 1H, J=5.5 Hz), 6.61 (s, 1H), 7.06 (d, 1H, J=2.8 Hz), 7.31 (d, 2H, J=8.3 Hz), 7.42 (m, 2H), 7.61 (m, 1H), 7.93 (m, 1H), 7.96(d, 2H, J=9.8 Hz), 8.51(d, 1H, J=2.8 Hz)
10 MS (EI, 70eV, m/z) 333(M⁺), 189, 157, 145, 130, 115, 105, 91

Step 2: 4-[3-(Quinoline-3-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using
15 methyl 4-[3-(quinoline-3-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (86 %).

¹H NMR (300 MHz, DMSO-d₆), δ 1.94 (s, 3H), 3.93 (s, 2H), 6.65 (d, 1H, J=2.1 Hz), 6.79 (t, 1H), 7.08 (s, 1H), 7.39 (m, 4H), 7.66 (d, 1H, J=7.8 Hz), 7.79 (d, 1H, J=8.1 Hz), 7.91 (d, 2H, J=8.1 Hz), 8.57 (d, 1H, J=2.7 Hz), 12.86 (bs, 1H)
20 MS (EI, 70eV, m/z) 318, 277, 183, 157, 144, 131, 116, 101, 91, 77

Step 3: 4-[3-(Quinoline-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(quinoline-3-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (83 %).

¹H NMR (300 MHz, DMSO-d₆), δ 1.93 (s, 3H), 3.91 (s, 2H), 6.57 (s, 1H), 6.74 (t, 1H, J=5.7 Hz), 7.06 (d, 1H, J=2.4 Hz), 7.35 (m, 4H), 7.70 (m, 4H), 8.55 (d, 1H, J=2.7 Hz), 8.98 (s, 1H), 11.16 (s, 1H)
30 MS (EI, 70eV), m/z 333, 318, 289, 172, 144, 131, 116, 91, 77

Example 9: 4-[3-(5-Hydroxy-naphthalene-1-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(5-hydroxy-naphthalene-1-ylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 5-hydroxy-1-naphthaleneamine as the starting material to obtain the title compound (68%).

^1H NMR (300 MHz, CDCl_3) δ 2.0 (s, 3H), 3.9 (s, 3H), 4.02-4.06 (d, 2H, $J=10.6$ Hz), 6.6 (s, 1H), 6.8-6.9 (m, 2H), 7.2-7.4 (m, 5H), 7.86-7.89 (d, 2H, $J=8.4$ Hz), 8.01-8.08 (m, 2H)
MS (LC, 70 eV) m/z 349 (M^{+1})

Step 2: 4-[3-(5-Hydroxy-naphthalene-1-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(5-hydroxy-naphthalene-1-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (83%).

MS (LC, 70 eV) m/z 335 (M^{+1})

Step 3: 4-[3-(5-Hydroxy-naphthalene-1-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(5-hydroxy-naphthalene-1-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (99%).

^1H NMR (300 MHz, MeOH-d_4) δ 2.0 (s, 3H), 4.02-4.04 (d, 2H, $J=8.2$ Hz), 6.5 (s, 1H), 6.8-6.9 (m, 2H), 7.2-7.4 (m, 5H), 7.84-7.88 (d, 2H, $J=8.2$ Hz), 8.03-8.09 (m, 2H)
MS (LC, 70 eV) m/z 350 (M^{+1})

Example 10: 4-[3-(Benzo[1,2,5]thiadiazol-4-ylamino)-2-methylpropenyl]-N-hydroxy benzamide**Step 1: Methyl 4-[3-(benzo[1,2,5]thiadiazol-4-ylamino)-2-methylpropenyl] benzoate**

5 The procedure of Step 1 of Example 1 was repeated except for using benzo[1,2,5]thiadiazol-4-ylamine as the starting material to obtain the title compound (98%).

10 ^1H NMR (300 MHz, CDCl_3) δ 1.9 (s, 3H), 3.8 (s, 3H), 3.9-4.0 (d, 2H, $J=6.3$ Hz), 6.32-6.34 (d, 1H, $J=7.3$ Hz), 6.5 (s, 1H), 7.1-7.2 (m, 4H), 7.90-7.93 (dd, 2H, $J=7.7, 3.0$ Hz)

MS (LC, 70 eV) m/z 341 (M^{+1})

Step 2: 4-[3-(Benzo[1,2,5]thiadiazol-4-ylamino)-2-methylpropenyl] benzoic acid

15 The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(benzo[1,2,5]thiadiazol-4-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (75%).

20 MS (LC, 70 eV) m/z 327 (M^{+1})

Step 3: 4-[3-(Benzo[1,2,5]thiadiazol-4-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

25 The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(benzo[1,2,5]thiadiazol-4-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (84%).

30 ^1H NMR (300 MHz, MeOH-d_4) δ 1.9 (s, 3H), 3.8-4.0 (d, 2H, $J=7.4$ Hz), 6.31-6.32 (d, 1H, $J=7.4$ Hz), 6.5 (s, 1H), 7.2-7.3 (m, 4H), 7.9-8.0 (dd, 2H, $J=7.4, 3.8$ Hz)

MS (LC, 70 eV) m/z 342 (M^{+1})

Example 11: 4-[3-(Anthracene-1-ylamino)-2-methylpropenyl]-N-hydroxy

benzamide**Step 1: Methyl 4-[3-(Anthracene-1-ylamino)-2-methylpropenyl] benzoate**

The procedure of Step 1 of Example 1 was repeated except for using anthracene-1-ylamine as the starting material to obtain the title compound (74%).

¹H NMR (300 MHz, CDCl₃) δ 1.9 (s, 3H), 3.8 (s, 3H), 4.0-4.1 (dd, 2H, J=13.9, 2.7 Hz), 6.5 (s, 1H), 7.1-7.2 (m, 4H), 7.3-7.4 (m, 3H), 7.8-7.9 (m, 5H), 8.24-8.28 (d, 1H, J=12.9 Hz)

MS (LC, 70 eV) m/z 383 (M⁺)

Step 2: 4-[3-(Anthracene-1-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(anthracene-1-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (100%).

MS (LC, 70 eV) m/z 369 (M⁺)

Step 3: 4-[3-(Anthracene-1-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(anthracene-1-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (52%).

¹H NMR (300 MHz, MeOH-d₄) δ 1.9 (s, 3H), 4.0-4.1 (dd, 2H, J=12.9, 2.7 Hz), 6.4 (s, 1H), 7.1-7.3 (m, 4H), 7.3-7.4 (m, 3H), 7.82-7.88 (m, 5H), 8.24-8.28 (d, 1H, J=12.9 Hz)

MS (LC, 70 eV) m/z 384 (M⁺)

Example 12: 4-[3-(4,6-Dihydropyrene-1-ylamino)-2-methylpropenyl]-N-hydroxy benzamide**Step 1: Methyl 4-[3-(4,6-dihydropyrene-1-ylamino)-2-methylpropenyl] benzoate**

The procedure of Step 1 of Example 1 was repeated except for using 4,6-dihydropyrene-1-ylamine as the starting material to obtain the title compound (95%).

¹H NMR (300 MHz, CDCl₃) δ 1.9 (s, 3H), 3.7 (s, 3H), 3.9-4.0 (dd, 2H, J=12.8, 5.7 Hz), 6.4 (s, 1H), 7.11-7.17 (m, 3H), 7.61-7.63 (d, 1H, J=8.8 Hz), 7.7-7.9 (m, 9H)

MS (LC, 70 eV) m/z 407 (M⁺)

Step 2: 4-[3-(4,6-Dihydropyrene-1-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(4,6-dihydropyrene-1-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (95%).

MS (LC, 70 eV) m/z 393 (M⁺)

Step 3: 4-[3-(4,6-Dihydropyrene-1-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(4,6-dihydropyrene-1-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (99%).

¹H NMR (300 MHz, MeOH-d₄) δ 1.9 (s, 3H), 3.92-3.96 (dd, 2H, J=12.6, 5.7 Hz), 6.4 (s, 1H), 7.14-7.18 (m, 3H), 7.61-7.62 (d, 1H, J=8.4 Hz), 7.8-7.9 (m, 9H)

MS (LC, 70 eV) m/z 408 (M⁺)

Example 13: 4-[3-(4-Methyl-2-2H-chromene-7-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(4-methyl-2-2H-chromene-7-ylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using

4-methyl-2-2H-chromene-7-ylamine as the starting material to obtain the title compound (46%).

¹H NMR (300 MHz, CDCl₃) δ 1.8 (s, 3H), 2.2 (s, 3H), 3.83-3.88 (s, 5H), 5.9 (s, 1H), 7.1-7.2 (t, 3H, J=13.7, 8.2 Hz), 7.2-7.3 (d, 2H, J=8.6 Hz), 7.90-7.92 (d, 2H, J=8.2 Hz)

MS (LC, 70 eV) m/z 364 (M⁺)

Step 2: 4-[3-(4-Methyl-2-2H-chromene-7-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(4-methyl-2-2H-chromene-7-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (91%).

MS (LC, 70 eV) m/z 350 (M⁺)

Step 3: 4-[3-(4-Methyl-2-2H-chromene-7-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(4-methyl-2-2H-chromene-7-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (98%).

¹H NMR (300 MHz, MeOH-d₄) δ 1.8 (s, 3H), 2.2 (s, 3H), 3.88 (s, 2H), 5.9 (s, 1H), 7.14-7.18 (t, 3H, J=12.6, 8.4 Hz), 7.25-7.30 (d, 2H, J=8.4 Hz), 7.91-7.92 (d, 2H, J=8.2 Hz)

MS (LC, 70 eV) m/z 365 (M⁺)

Example 14: 4-[3-(3-Benzyloxypyridine-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(3-benzyloxypyridine-2-ylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 3-benzyloxypyridine-2-ylamine as the starting material to obtain the title

compound (14%).

¹H NMR (300 MHz, CDCl₃) δ 1.8 (s, 3H), 3.8 (s, 3H), 4.1-4.2 (d, 2H, J=5.8 Hz), 5.01 (s, 2H), 6.4 (s, 1H), 6.43-6.47 (q, 1H, J=7.7, 5.2 Hz), 6.85-6.88 (t, 1H, J=7.7, 6.6 Hz), 7.1-7.3 (m, 7H), 7.65-7.67 (dd, 1H, J=5.2, 1.2 Hz), 7.8-7.9 (d, 2H, J=8.3 Hz)

MS (LC, 70 eV) m/z 390 (M⁺)

Step 2: 4-[3-(3-Benzoyloxypyridine-2-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(3-benzoyloxypyridine-2-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (90%).

MS (LC, 70 eV) m/z 376 (M⁺)

Step 3: 4-[3-(3-Benzoyloxypyridine-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(3-benzoyloxypyridine-2-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (48%).

¹H NMR (300 MHz, MeOH-d₄) δ 1.8 (s, 3H), 4.1-4.2 (d, 2H, J=6.2 Hz), 5.0 (s, 2H), 6.4 (s, 1H), 6.45-6.47 (q, 1H, J=7.7, 4.2 Hz), 6.8-6.9 (t, 1H, J=7.7, 5.6 Hz), 7.2-7.3 (m, 7H), 7.6-7.7 (dd, 1H, J=5.6, 2.4 Hz), 7.80-7.85 (d, 2H, J=8.2 Hz)

MS (LC, 70 eV) m/z 391 (M⁺)

Example 15: 4-[3-(9-Ethyl-9H-carbazol-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(9-ethyl-9H-carbazol-2-ylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using

9-ethyl-9H-carbazol-2-ylamine as the starting material to obtain the title compound (69%).

¹H NMR (300 MHz, CDCl₃) δ 1.3-1.4 (m, 3H), 1.96-1.97 (d, 2H, J=4.3 Hz),
2.0 (s, 3H), 3.9 (s, 3H), 4.2-4.3 (q, 2H, J=7.2, 7.2 Hz), 6.5 (s, 1H), 7.2-7.4 (m,
8H), 7.9-8.0 (m, 3H)

MS (LC, 70 eV) m/z 400 (M⁺)

Step 2: 4-[3-(9-Ethyl-9H-carbazol-2-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(9-ethyl-9H-carbazol-2-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (96%).

MS (LC, 70 eV) m/z 386 (M⁺)

Step 3: 4-[3-(9-Ethyl-9H-carbazol-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(9-ethyl-9H-carbazol-2-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (100%).

¹H NMR (300 MHz, MeOH-d₄) δ 1.3-1.4 (m, 3H), 1.92-1.94 (d, 2H, J=5.6 Hz), 1.98 (s, 3H), 4.2-4.3 (q, 2H, J=7.4, 7.4 Hz), 6.4 (s, 1H), 7.3-7.4 (m, 8H),
7.8-7.9 (m, 3H)

MS (LC, 70 eV) m/z 401 (M⁺)

Example 16: 4-[3-(5-Methyl-1H-pyrazol-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(5-methyl-1H-pyrazol-3-ylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 5-methyl-1H-pyrazol-3-ylamine as the starting material to obtain the title

compound (29%).

^1H NMR (300 MHz, CDCl_3) δ 1.4 (s, 3H), 1.9 (s, 3H), 3.8 (s, 3H), 3.9 (s, 2H), 5.3 (s, 1H), 6.3 (s, 1H), 7.1-7.2 (m, 2H), 7.8-7.9 (d, 2H, $J=8.2$ Hz)

5 MS (LC, 70 eV) m/z 287 (M^{+1})

Step 2: 4-[3-(5-Methyl-1H-pyrazol-3-ylamino)-2-methylpropenyl] benzoic acid

10 The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(5-methyl-1H-pyrazol-3-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (92%).

MS (LC, 70 eV) m/z 273 (M^{+1})

15 **Step 3: 4-[3-(5-Methyl-1H-pyrazol-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide**

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(5-methyl-1H-pyrazol-3-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (91%).

20

^1H NMR (300 MHz, $\text{MeOH}-d_4$) δ 1.4 (s, 3H), 1.9 (s, 3H), 3.8 (s, 3H), 5.32 (s, 1H), 6.3 (s, 1H), 7.1-7.2 (m, 2H), 7.85-7.88 (d, 2H, $J=8.4$ Hz)

MS (LC, 70 eV) m/z 288 (M^{+1})

25 **Example 17: 4-[3-(5-Methylsulphenyl-1H-[1,2,4]triazol-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide**

Step 1: Methyl 4-[3-(5-methylsulphenyl-1H-[1,2,4]triazol-3-ylamino)-2-methylpropenyl] benzoate

30 The procedure of Step 1 of Example 1 was repeated except for using 5-methylsulphenyl-1H-[1,2,4]triazol-3-ylamine as the starting material to obtain the title compound (43%).

^1H NMR (300 MHz, CDCl_3) δ 1.1 (s, 3H), 1.9 (s, 3H), 3.8 (s, 3H), 4.1 (s,

2H), 6.5 (s, 1H), 7.23-7.26 (d, 2H, J=8.4 Hz), 7.92-7.94 (d, 2H, J=8.1 Hz)
MS (LC, 70 eV) m/z 320 (M^{+1})

Step 2: 4-[3-(5-Methylsulphenyl-1H-[1,2,4]triazol-3-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(5-methylsulphenyl-1H-[1,2,4]triazol-3-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (41 %).

MS (LC, 70 eV) m/z 306 (M^{+1})

Step 3: 4-[3-(5-Methylsulphenyl-1H-[1,2,4]triazol-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(5-methylsulphenyl-1H-[1,2,4]triazol-3-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (41 %).

^1H NMR (300 MHz, MeOH- d_4) δ 1.3 (s, 3H), 1.9 (s, 3H), 4.0 (s, 2H), 6.5 (s, 1H), 7.24-7.26 (d, 2H, J=8.4 Hz), 7.90-7.92 (d, 2H, J=8.4 Hz)

MS (LC, 70 eV) m/z 321 (M^{+1})

Example 18: 4-[3-(3-Methoxy phenylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(3-methoxy phenylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 3-methoxy phenylamine as the starting material to obtain the title compound (60 %).

^1H NMR (300 MHz, CDCl_3) δ 1.9 (s, 3H), 3.7 (s, 3H), 3.80 (s, 2H), 3.88 (s, 3H), 6.2 (s, 1H), 6.21-6.29 (m, 2H), 6.5 (s, 1H), 7.04-7.09 (t, 1H, J=16.0, 8.0 Hz), 7.26-7.29 (d, 2H, J=8.2 Hz), 7.95-7.98 (d, 2H, J=8.2 Hz)

MS (LC, 70 eV) m/z 313 (M^{+1})

Step 2: 4-[3-(3-Methoxy phenylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(3-methoxy phenylamino)-2-methylpropenyl] benzoate to obtain the title compound (94%).

MS (LC, 70 eV) m/z 299 (M^{+1})

Step 3: 4-[3-(3-Methoxy phenylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(3-methoxy phenylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (96%).

^1H NMR (300 MHz, MeOH-d_4) δ 1.9 (s, 3H), 3.7 (s, 3H), 3.80 (s, 2H), 6.2 (s, 1H), 6.25-6.30 (m, 2H), 6.5 (s, 1H), 7.02-7.06 (t, 1H, $J=16.0, 8.2$ Hz), 7.26-7.28 (d, 2H, $J=8.2$ Hz), 7.94-7.96 (d, 2H, $J=8.2$ Hz)

MS (LC, 70 eV) m/z 314 (M^{+1})

Example 19: 4-[3-(Naphthalene-1-ylamino)-2-methylpropenyl]-N-hydroxy benzamide**Step 1: Methyl 4-[3-(naphthalene-1-ylamino)-2-methylpropenyl] benzoate**

The procedure of Step 1 of Example 1 was repeated except for using 1-naphthaleneylamine as the starting material to obtain the title compound (63%).

^1H NMR (300 MHz, CDCl_3) δ 1.9 (s, 3H), 3.8 (s, 3H), 3.96-3.98 (d, 2H, $J=4.4$ Hz), 6.5 (s, 1H), 6.60-6.62 (d, 1H, $J=7.2$ Hz), 7.1-7.2 (m, 4H), 7.3-7.4 (q, 2H, $J=6.3, 3.2$ Hz), 7.71-7.73 (d, 1H, $J=6.1$ Hz), 7.8-7.9 (dd, 3H, $J=6.6, 1.5$ Hz)

MS (LC, 70 eV) m/z 333 (M^{+1})

Step 2: 4-[3-(Naphthalene-1-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(naphthalene-1-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (100%).

MS (LC, 70 eV) m/z 319 (M^{+1})

Step 3: 4-[3-(Naphthalene-1-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(naphthalene-1-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (78%).

^1H NMR (300 MHz, MeOH-d_4) δ 1.9 (s, 3H), 3.9-4.0 (d, 2H, $J=5.4$ Hz), 6.5 (s, 1H), 6.60-6.62 (d, 1H, $J=6.6$ Hz), 7.1-7.2 (m, 4H), 7.3-7.4 (q, 2H, $J=6.6$, 3.3 Hz), 7.72-7.74 (d, 1H, $J=6.4$ Hz), 7.80-7.84 (dd, 3H, $J=6.6$, 3.5 Hz)

MS (LC, 70 eV) m/z 334 (M^{+1})

Example 20: 4-[3-(Naphthalene-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide**Step 1: Methyl 4-[3-(naphthalene-2-ylamino)-2-methylpropenyl] benzoate**

The procedure of Step 1 of Example 1 was repeated except for using 2-naphthaleneylamine as the starting material to obtain the title compound (73%).

^1H NMR (300 MHz, CDCl_3) δ 2.0 (s, 3H), 3.9 (s, 3H), 4.0 (s, 2H), 6.5 (s, 1H), 6.6 (s, 1H), 6.94-6.98 (dd, 1H, $J=8.7$, 2.3 Hz), 7.2-7.4 (m, 4H), 7.6-7.7 (q, 4H, $J=18.2$, 3.2 Hz), 8.00-8.03 (d, 2H, $J=8.3$ Hz)

MS (LC, 70 eV) m/z 333 (M^{+1})

Step 2: 4-[3-(Naphthalene-2-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using

methyl 4-[3-(naphthalene-2-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (100%).

MS (LC, 70 eV) m/z 319 (M^{+1})

Step 3: 4-[3-(Naphthalene-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(naphthalene-2-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (97%).

^1H NMR (300 MHz, MeOH-d_4) δ 2.0 (s, 3H), 4.0 (s, 2H), 6.4 (s, 1H), 6.6 (s, 1H), 6.9-7.0 (dd, 1H, $J=8.6, 3.4$ Hz), 7.2-7.3 (m, 4H), 7.65-7.69 (q, 4H, $J=12.6, 6.2$ Hz), 7.8-8.0 (d, 2H, $J=8.4$ Hz)

MS (LC, 70 eV) m/z 334 (M^{+1})

Example 21: 4-[3-(Biphenyl-4-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(biphenyl-4-ylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 4-biphenylamine as the starting material to obtain the title compound (83%).

^1H NMR (300 MHz, CDCl_3) δ 1.9 (s, 3H), 3.8 (s, 3H), 4.02-4.04 (d, 2H, $J=7.2$ Hz), 6.4 (s, 1H), 6.61-6.67 (t, 2H, $J=17.4, 8.6$ Hz), 7.15-7.17 (d, 2H, $J=4.8$ Hz), 7.2-7.4 (m, 7H), 7.8-7.9 (d, 1H, $J=6.3$ Hz)

MS (LC, 70 eV) m/z 359 (M^{+1})

Step 2: 4-[3-(Biphenyl-4-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(biphenyl-4-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (97%).

MS (LC, 70 eV) m/z 345 (M^{+1})

Step 3: 4-[3-(Biphenyl-4-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using
5 4-[3-(biphenyl-4-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (96%).

¹H NMR (300 MHz, MeOH-d₄) δ 1.9 (s, 3H), 4.02-4.04 (d, 2H, J=7.2 Hz),
6.4 (s, 1H), 6.62-6.66 (t, 2H, J=16.2, 8.0 Hz), 7.18-7.22 (d, 2H, J=6.2 Hz),
10 7.3-7.5 (m, 7H), 7.7-7.8 (d, 1H, J=6.4 Hz)

MS (LC, 70 eV) m/z 360 (M⁺)

Example 22: 4-[3-(6-Nitro-benzothiazol-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

15 **Step 1: Methyl 4-[3-(6-nitro-benzothiazol-2-ylamino)-2-methylpropenyl] benzoate**

The procedure of Step 1 of Example 1 was repeated except for using
6-nitro-benzothiazole-2-ylamine as the starting material to obtain the title
compound (97%).

20 ¹H NMR (300 MHz, CDCl₃) δ 1.9 (s, 3H), 3.9 (s, 3H), 4.5-4.6 (d, 2H, J=10.9 Hz), 6.3 (s, 1H), 7.2-7.3 (dd, 2H, J=10.8, 2.4 Hz), 7.9-8.0 (dd, 1H, J=8.3, 2.1 Hz)

MS (LC, 70 eV) m/z 385 (M⁺)

25 **Step 2: 4-[3-(6-Nitro-benzothiazol-2-ylamino)-2-methylpropenyl] benzoic acid**

The procedure of Step 2 of Example 1 was repeated except for using
methyl 4-[3-(6-nitro-benzothiadiazol-2-ylamino)-2-methylpropenyl] benzoate
30 to obtain the title compound (89%).

MS (LC, 70 eV) m/z 371 (M⁺)

Step 3: 4-[3-(6-Nitro-benzothiazol-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(6-nitro-benzothiazol-2-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (91 %).

^1H NMR (300 MHz, MeOH-d_4) δ 1.9 (s, 3H), 4.52-4.56 (d, 2H, $J=10.6$ Hz), 6.3 (s, 1H), 7.22-7.28 (dd, 2H, $J=8.4, 2.4$ Hz), 7.95-7.98 (dd, 1H, $J=8.3, 2.4$ Hz)

MS (LC, 70 eV) m/z 386 (M^{+1})

Example 23: 4-[3-(6-Methoxy-benzothiazol-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(6-methoxy-benzothiazol-2-ylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 6-methoxy-benzothiazol-2-ylamine as the starting material to obtain the title compound (35 %).

^1H NMR (200 MHz, CDCl_3), σ 1.94 (s, 3H, CH_3), 3.82 (s, 3H, OCH_3), 3.91 (s, 3H, OCH_3), 4.10 (s, 2H, CH_2), 6.57 (s, 1H, CH), 6.89 (m, 1H, ArH), 7.13 (m, 1H, ArH), 7.33 (m, 2H, ArH), 7.69 (m, 1H, ArH), 7.99 (d, 2H $J=8.5$ Hz, ArH)

MS (LC, 70 eV) m/z 370 (M^{+1})

Step 2: 4-[3-(6-Methoxy-benzothiazol-2-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(6-methoxy-benzothiazol-2-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (71 %).

^1H NMR (200 MHz, CDCl_3), σ 1.95 (s, 3H, CH_3), 3.81 (s, 3H, OCH_3), 4.10 (s, 2H, CH_2), 6.57 (s, 1H, CH), 6.91 (m, 1H, ArH), 7.15 (m, 1H, ArH), 7.33

(m, 2H, ArH), 7.69 (m, 1H, ArH), 8.02 (d, 2H J=8.5 Hz, ArH)

MS (LC, 70 eV) m/z 356 (M^{+1})

Step 3: 4-[3-(6-Methoxy-benzothiazol-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(6-methoxy-benzothiadiazol-2-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (87%).

^1H NMR (200 MHz, CDCl_3), σ 1.97 (s, 3H, CH_3), 3.79 (s, 3H, OCH_3), 4.11 (s, 2H, CH_2), 6.54 (s, 1H, CH), 6.91 (m, 1H, ArH), 7.15 (m, 1H, ArH), 7.31 (m, 2H, ArH), 7.72 (m, 1H, ArH), 8.04 (d, 2H J=8.5 Hz, ArH)

MS (LC, 70 eV) m/z 371 (M^{+1})

Example 24: 4-[3-(2-Methoxy-dibenzofuran-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(2-methoxy-dibenzofuran-3-ylamino)-2-methylpropenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 2-methoxy-dibenzofuran-3-ylamine as the starting material to obtain the title compound (91%).

^1H NMR (300 MHz, CDCl_3) δ 1.9 (s, 3H), 3.8 (s, 3H), 3.9 (s, 3H), 4.1-4.2 (d, 2H, J=4.7 Hz), 6.4 (s, 1H), 7.1-7.2 (m, 5H), 7.35-7.38 (m, 2H), 7.9-8.0 (m, 2H)

MS (LC, 70 eV) m/z 403 (M^{+1})

Step 2: 4-[3-(2-Methoxy-dibenzofuran-3-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(2-methoxy-dibenzofuran-3-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (99%).

MS (LC, 70 eV) m/z 389 (M^{+1})

Step 3: 4-[3-(2-Methoxy-dibenzofuran-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

5 The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(2-methoxy-dibenzofuran-3-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (98%).

10 ^1H NMR (300 MHz, MeOH- d_4) δ 1.9 (s, 3H), 3.8 (s, 3H), 4.12-4.16 (d, 2H, J=4.8 Hz), 6.4 (s, 1H), 7.1-7.2 (m, 5H), 7.3-7.4 (m, 2H), 7.8-7.9 (m, 2H)

MS (LC, 70 eV) m/z 404 (M^{+1})

Example 25: 4-[3-(6-Methoxypyridine-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

15 **Step 1: Methyl 4-[3-(6-methoxypyridine-3-ylamino)-2-methylpropenyl] benzoate**

 The procedure of Step 1 of Example 1 was repeated except for using 6-methoxypyridine-3-ylamine as the starting material to obtain the title compound (285 mg, 91%).

20

^1H NMR (200 MHz, acetone- d_6) δ 1.94 (s, 2H, CH_2), 2.91 (s, 3H, CH_3), 3.75 (s, 3H, OCH_3), 3.86 (s, 3H, OCH_3), 5.21 (brs, 1H, NH), 6.57 (d, J=9.0 Hz, 1H, ArH), 6.62 (s, 1H, CH), 7.13 (dd, J=9.0, 3.0 Hz, 1H, ArH), 7.39 (d, J=8.2 Hz, 2H, ArH), 7.59 (d, J=3.0 Hz, 1H, ArH), 7.96 (d, J=8.6 Hz, 2H, ArH)

25

Step 2: 4-[3-(6-Methoxypyridine-3-ylamino)-2-methylpropenyl] benzoic acid

 The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(6-methoxypyridine-3-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (90%).

30

Step 3: 4-[3-(6-Methoxypyridine-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(6-methoxypyridine-3-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound.

5 ¹H NMR (300 MHz, acetone-d₆) δ 1.94 (s, 2H, CH₂), 2.91 (s, 3H, CH₃), 3.86 (s, 3H, OCH₃), 5.21 (brs, 1H, NH), 6.57 (d, J=9.0 Hz, 1H, ArH), 6.65 (s, 1H, CH), 7.13 (dd, J=9.0, 3.0 Hz, 1H, ArH), 7.39 (d, J=8.1 Hz, 2H, ArH), 7.59 (d, J=3.0 Hz, 1H, ArH), 7.96 (d, J=8.6 Hz, 2H, ArH)

10 **Example 26: 4-[3-(2-Chloropyridine-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide**

Step 1: Methyl 4-[3-(2-chloropyridine-3-ylamino)-2-methylpropenyl] benzoate

15 The procedure of Step 1 of Example 1 was repeated except for using 2-chloropyridine-3-ylamine as the starting material to obtain the title compound (25%).

¹H NMR (200 MHz, CDCl₃) δ 1.94 (s, 3H, CH₃), 3.91 (s, 3H, OCH₃), 3.95 (s, 2H, CH₂), 4.79 (brs, 1H, NH), 6.52 (s, 1H, CH), 6.90 (d, J=8.0 Hz, 1H, ArH),
20 7.07 (m, 1H, ArH), 7.30 (d, J=8.8 Hz, 2H, ArH), 7.74 (d, J=4.8 Hz, 1H, ArH), 8.01 (d, J=8.8 Hz, 2H, ArH)

MS (EI, 70 eV) m/z 316 (M⁺), 189, 157, 145, 129, 115, 105, 91, 77, 59, 43

25 **Step 2: 4-[3-(2-Chloropyridine-3-ylamino)-2-methylpropenyl] benzoic acid**

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(2-chloropyridine-3-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (100%).

30 **Step 3: 4-[3-(2-Chloropyridine-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide**

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(2-chloropyridine-3-ylamino)-2-methylpropenyl] benzoic acid to obtain

the title compound.

¹H NMR (200 MHz, CDCl₃) δ 1.94 (s, 3H, CH₃), 3.95 (s, 2H, CH₂), 6.52 (s, 1H, CH), 6.90 (d, J=8.0 Hz, 1H, ArH), 7.07 (m, 1H, ArH), 7.30 (d, J=8.8 Hz, 2H, ArH), 7.74 (d, J=4.8 Hz, 1H, ArH), 8.01 (d, J=8.8 Hz, 2H, ArH), 9.48 (brs, 1H), 10.02 (brs, 1H)

Example 27: 4-[3-(6-Morpholine-4-ylmethylquinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(6-morpholine-4-ylmethylquinoline-3-ylamino)-2-methyl-propenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 6-morpholine-4-ylmethylquinoline-3-ylamine as the starting material to obtain the title compound (38%).

¹H NMR (200 MHz, CDCl₃) δ 8.46 (d, J=2.8 Hz, 1H), 7.98 (d, J=8.0 Hz, 2H), 7.88 (d, J=8.6 Hz, 1H), 7.51 (s, 1H), 7.41 (d, J=8.6 Hz, 1H), 7.30 (d, J=8.6 Hz, 2H), 7.01 (d, J=2.4 Hz, 1H), 6.59 (s, 1H), 4.47 (brs, 1H), 3.94 (d, J=4.4 Hz, 2H), 3.89 (s, 3H), 3.71 (t, J=4.8 Hz, 4H), 3.60 (s, 2H), 2.48 (t, J=4.8 Hz, 4H), 1.97 (s, 3H)

Step 2: 4-[3-(6-Morpholine-4-ylmethylquinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(6-morpholine-4-ylmethylquinoline-3-ylamino)-2-methyl-propenyl] benzoate to obtain the title compound (92%).

¹H NMR (200 MHz, CDCl₃) δ 8.47 (s, 1H), 7.92 (d, J=8.0 Hz, 2H), 7.79 (d, J=8.6 Hz, 1H), 7.65 (s, 1H), 7.42 (d, J=8.6 Hz, 1H), 7.29 (d, J=7.6 Hz, 2H), 7.13 (s, 1H), 6.61 (s, 1H), 3.95 (s, 2H), 3.82 (s, 2H), 3.72 (t, J=4.4 Hz, 4H), 2.68 (t, J=4.4 Hz, 4H), 1.94 (s, 3H)

Step 3: 4-[3-(6-Morpholine-4-ylmethylquinoline-3-ylamino)-2-methyl-

propenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(6-morpholine-4-ylmethylquinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid to obtain the title compound (35%).

¹H NMR (200 MHz, DMSO-d₆) δ 11.19 (s, 1H), 10.33 (brs, 1H), 8.98 (s, 1H), 8.50 (d, J=2.4 Hz, 1H), 7.70 (d, J=8.2 Hz, 1H), 7.53 (s, 1H), 7.30 (d, J=8.2 Hz, 2H), 7.01 (d, J=2.4 Hz, 1H), 6.78 (s, 1H), 6.55 (s, 1H), 4.58 (s, 2H), 3.88 (s, 2H), 3.58 (t, J=4.4 Hz, 4H), 2.48 (t, J=3.6 Hz, 4H), 1.91 (s, 3H)

Example 28: 4-[3-(4'-Cyanobiphenyl-4-ylamino)-2-methylpropenyl]-N-hydroxy benzamide**Step 1: Methyl 4-[3-(4'-cyanobiphenyl-4-ylamino)-2-methylpropenyl] benzoate**

The procedure of Step 1 of Example 1 was repeated except for using 4'-cyanobiphenyl-4-ylamine as the starting material to obtain the title compound (70%).

¹H NMR (200 MHz, acetone-d₆) δ 2.92 (s, 3H, CH₃), 3.87 (s, 3H, OCH₃), 3.97 (d, J=6.4 Hz, 2H, CH₂), 5.85 (brs, 1H, NH), 6.82 (s, J=9.0 Hz, 2H, ArH), 7.35 (s, 1H, ArH), 7.31 (m, 2H, ArH), 7.55 (d, J=9.0 Hz, 2H, ArH), 7.70 (m, 4H, ArH), 7.96 (d, J=8.2 Hz, 2H, ArH)

MS (EI, 70 eV) m/z 382 (M⁺), 91, 69, 59, 43

Step 2: 4-[3-(4'-Cyanobiphenyl-4-ylamino)-2-methylpropenyl] benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(4'-cyanobiphenyl-4-ylamino)-2-methylpropenyl] benzoate to obtain the title compound (87%).

Step 3: 4-[3-(4'-Cyanobiphenyl-4-ylamino)-2-methylpropenyl]-N-hydroxy benzamide

The procedure of Step 3 of Example 1 was repeated except for using

4-[3-(4'-cyanobiphenyl-4-ylamino)-2-methylpropenyl] benzoic acid to obtain the title compound (15 mg).

¹H NMR (200 MHz, acetone-d₆) δ 2.90 (s, 3H, CH₃), 3.97 (d, J=6.4 Hz, 2H, CH₂), 6.82 (d, J=9.0 Hz, 2H, ArH), 7.35 (s, 1H, ArH), 7.31 (m, 2H, ArH), 7.55 (d, J=9.0 Hz, 2H, ArH), 7.70 (m, 4H, ArH), 7.96 (d, J=8.2 Hz, 2H, ArH)

Example 29: 4-[3-(4-Pyridine-2-ylpiperazine-1-yl)-2-methyl-propenyl]-N-hydroxy-benzimide

Step 1: Methyl 4-[3-(4-pyridine-2-ylpiperazine-1-yl)-2-methyl-propenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 4-pyridine-2-ylpiperazine as the starting material to obtain the title compound (92%).

¹H NMR (200 MHz, CDCl₃), σ 2.18 (m, 2H, CH₂), 2.20 (s, 3H, CH₃), 2.59 (m, 2H, CH₂), 3.94 (s, 3H, OCH₃), 6.54 (m, 3H, ArH), 7.37 (d, 2H J=8.0 Hz, ArH), 8.04 (d, 2H J=8.0 Hz, ArH), 8.33 (m, 2H, ArH)

Step 2: 4-[2-Methyl-3-(4-pyridine-2-ylpiperazine-1-yl)-propenyl]-benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[2-methyl-3-(4-pyridine-2-ylpiperazine-1-yl)-propenyl] benzoate to obtain the title compound (75%).

¹H NMR (200 MHz, CDCl₃), σ 2.17 (m, 2H, CH₂), 2.24 (s, 3H, CH₃), 2.61 (m, 2H, CH₂), 6.66 (m, 3H, ArH), 7.34 (d, 2H J=8.0 Hz, ArH), 8.02 (d, 2H J=8.0 Hz, ArH), 8.31 (m, 2H, ArH)

Step 3: 4-[2-Methyl-3-(4-pyridine-2-ylpiperazine-1-yl)-propenyl]-N-hydroxy-benzimide

The procedure of Step 3 of Example 1 was repeated except for using 4-[2-methyl-3-(4-pyridine-2-ylpiperazine-1-yl)-propenyl]-benzoic acid to

obtain the title compound (25%).

¹H NMR (200 MHz, CDCl₃), σ 2.18 (m, 2H, CH₂), 2.22 (s, 3H, CH₃), 2.63 (m, 2H, CH₂), 6.59 (m, 3H, ArH), 7.34 (d, 2H J=8.0 Hz, ArH), 8.01 (d, 2H J=8.0 Hz, ArH), 8.32 (m, 2H, ArH)

Example 30: 4-[2-Methyl-3-(4-phenyl-piperazine-1-yl)-propenyl]-N-hydroxy-benzimide

Step 1: Methyl 4-[2-methyl-3-(4-pyridine-2-ylpiperazine-1-yl)-propenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 4-pyridine-2-ylpiperazine as the starting material to obtain the title compound (62%).

¹H NMR (200 MHz, CDCl₃), σ 1.97 (s, 3H, CH₃), 2.63 (m, 2H, CH₂), 3.11 (s, 2H, CH₂), 3.25 (m, 2H, CH₂), 3.94 (s, 3H, OCH₃), 6.53 (s, 1H, CH), 6.91 (m, 3H, ArH), 7.24-7.39 (m, 5H, ArH), 8.02 (d, 2H J=8.5 Hz, ArH)

Step 2: 4-[2-Methyl-3-(4-pyridine-2-ylpiperazine-1-yl)-propenyl]-benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[2-methyl-3-(4-pyridine-2-ylpiperazine-1-yl)-propenyl] benzoate to obtain the title compound (95%).

¹H NMR (200 MHz, CDCl₃), σ 1.99 (s, 3H, CH₃), 2.64 (m, 2H, CH₂), 3.12 (s, 2H, CH₂), 3.24 (m, 2H, CH₂), 6.54 (s, 1H, CH), 6.93 (m, 3H, ArH), 7.24-7.39 (m, 5H, ArH), 8.01 (d, 2H J=8.5 Hz, ArH)

Step 3: 4-[2-Methyl-3-(4-pyridine-2-ylpiperazine-1-yl)-propenyl]-N-hydroxy-benzimide

The procedure of Step 3 of Example 1 was repeated except for using 4-[2-methyl-3-(4-pyridine-2-ylpiperazine-1-yl)-propenyl]-benzoic acid to obtain the title compound (25%).

5 ¹H NMR (200 MHz, CDCl₃), σ 1.99 (s, 3H, CH₃), 2.67 (m, 2H, CH₂), 3.12 (s, 2H, CH₂), 3.21 (m, 2H, CH₂), 6.53 (s, 1H, CH), 6.93 (m, 3H, ArH), 7.31 (m, 5H, ArH), 8.04 (d, 2H J=8.5 Hz, ArH)

10 **Example 31: 4-[3-(Benzyl-methylamino)-2-methyl-propenyl]-N-hydroxy-benzamide**

Step 1: Methyl 4-[3-(benzyl-methyl-amino)-2-methyl-propenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using benzyl-methyl-amine as the starting material to obtain the title compound (80%).

15 ¹H NMR (200 MHz, CDCl₃), σ 1.99 (s, 3H, CH₃), 2.25 (s, 3H, CH₃), 3.10 (s, 2H, CH₂), 3.58 (s, 2H, CH₂), 3.94 (s, 3H, OCH₃), 6.54 (s, 1H, CH), 7.38 (m, 7H, ArH), 8.01 (d, 2H J=8.0 Hz, ArH)

20 **Step 2: 4-[3-(Benzyl-methyl-amino)-2-methyl-propenyl]-benzoic acid**

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(benzyl-methyl-amino)-2-methyl-propenyl] benzoate to obtain the title compound (48%).

25 ¹H NMR (200 MHz, CDCl₃), σ 1.97 (s, 3H, CH₃), 2.23 (s, 3H, CH₃), 3.11 (s, 2H, CH₂), 3.59 (s, 2H, CH₂), 6.54 (s, 1H, CH), 7.41 (m, 7H, ArH), 8.03 (d, 2H J=8.0 Hz, ArH)

30 **Step 3: 4-[3-(Benzyl-methylamino)-2-methyl-propenyl]-N-hydroxy-benzamide**

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(benzyl-methyl-amino)-2-methyl-propenyl]-benzoic acid to obtain the

title compound (33 %).

¹H NMR (200 MHz, CDCl₃), σ 1.99 (s, 3H, CH₃), 2.21 (s, 3H, CH₃), 3.11 (s, 2H, CH₂), 3.57 (s, 2H, CH₂), 6.55 (s, 1H, CH), 7.41 (m, 7H, ArH), 8.01 (d, 2H J=8.0Hz, ArH)

Example 32: 4-[3-(2-Phenoxy-ethylamino)-2-methyl-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[3-(2-phenoxy-ethylamino)-2-methyl-propenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using 2-phenoxy-ethylamine as the starting material to obtain the title compound (42 %).

¹H NMR (200 MHz, CDCl₃), σ 2.05 (s, 3H, CH₃), 3.15 (m, 2H, CH₂), 3.46 (s, 2H, CH₂), 3.94 (s, 3H, OCH₃), 4.20 (m, 2H, CH₂), 6.64 (s, 1H, CH), 6.84 (m 1H, ArH), 6.91 (m, 2H, ArH), 7.32 (m, 4H, ArH), 8.03 (m, 2H, ArH)

Step 2: 4-[3-(2-Phenoxy-ethylamino)-2-methyl-propenyl]-benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[2-methyl-3-(2-phenoxy-ethylamino)-propenyl] benzoate to obtain the title compound (97 %).

¹H NMR (200 MHz, CDCl₃), σ 2.03 (s, 3H, CH₃), 3.17 (m, 2H, CH₂), 3.46 (s, 2H, CH₂), 4.21 (m, 2H, CH₂), 6.64 (s, 1H, CH), 6.84 (m 1H, ArH), 6.94 (m, 2H, ArH), 7.32 (m, 4H, ArH), 8.03 (m, 2H, ArH)

Step 3: 4-[3-(2-Phenoxy-ethylamino)-2-methyl-propenyl]-N-hydroxy-benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[2-methyl-3-(2-phenoxy-ethylamino)-propenyl]-benzoic acid to obtain the title compound (23 %).

¹H NMR (200 MHz, CDCl₃), σ 2.03 (s, 3H, CH₃), 3.17 (m, 2H, CH₂), 3.46 (s, 2H, CH₂), 4.21 (m, 2H, CH₂), 6.64 (s, 1H, CH), 6.84 (m 1H, ArH), 6.92 (m, 2H, ArH), 7.31 (m, 4H, ArH), 8.02 (m, 2H, ArH)

5 **Example 33: 4-[3-(8-Bromoquinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy-benzamide**

Step 1: Methyl 4-[3-(8-bromoquinoline-3-ylamino)-2-methyl-propenyl] benzoate

10 The procedure of Step 1 of Example 1 was repeated except for using 8-bromoquinoline-3-ylamine as the starting material to obtain the title compound (53%).

15 ¹H NMR (300 MHz, CDCl₃) δ 1.89 (s, 3H), 3.82 (s, 3H), 3.87 (s, 2H), 6.50 (s, 1H), 6.96-6.97 (d, 1H, J=7.2 Hz), 7.1-7.2 (m, 4H), 7.47-7.49 (d, 1H, J=8.0 Hz), 7.63-7.65 (d, 1H, J=8.2 Hz), 7.88-7.91 (d, 2H, J=8.2 Hz), 7.95-7.98 (d, 1H, J=8.0 Hz), 8.59-8.60 (d, 1H, J=7.8 Hz)

MS (EI, 70 eV) m/z 411 (M⁺), 395, 379, 235, 222, 189, 157, 130, 115, 105, 91, 59

20 **Step 2: 4-[3-(8-Bromoquinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid**

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(8-bromoquinoline-3-ylamino)-2-methyl-propenyl] benzoate to obtain the title compound (90%).

25

MS (EI, 70 eV) m/z 396 (M⁻¹), 222, 149, 131, 115, 91, 66, 58

Step 3: 4-[3-(8-Bromoquinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy-benzamide

30

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(8-bromoquinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid to obtain the title compound (89%).

¹H NMR (300 MHz, acetone-d₆) δ 1.87 (s, 3H), 3.84 (s, 2H), 6.50 (s, 1H), 6.94-6.96 (d, 1H, J=7.2 Hz), 7.1-7.3 (m, 4H), 7.48-7.50 (d, 1H, J=7.6 Hz), 7.61-7.63 (d, 1H, J=8.4 Hz), 7.88-7.90 (d, 2H, J=8.4 Hz), 7.92-7.94 (d, 1H, J=8.2 Hz), 8.58-8.60 (d, 1H, J=8.4 Hz)

5 MS (LC, 70 eV) m/z 413 (M⁺)

Example 34: 4-[3-(6-Methoxyquinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[3-(6-methoxyquinoline-3-ylamino)-2-methyl-propenyl] benzoate

10

The procedure of Step 1 of Example 1 was repeated except for using 6-methoxyquinoline-3-ylamine as the starting material to obtain the title compound.

15

¹H NMR (300 MHz, CDCl₃) δ 1.89 (s, 3H), 3.56 (s, 3H), 3.82 (s, 3H), 3.87 (s, 2H), 6.50 (s, 1H), 6.97 (d, 1H, J=7.2 Hz), 7.12 (m, 4H), 7.49 (d, 1H, J=8.0 Hz), 7.65 (d, 1H, J=8.2 Hz), 7.89 (d, 2H, J=8.2 Hz), 7.98 (d, 1H, J=8.0 Hz), 8.59 (d, 1H, J=7.8 Hz)

20

Step 2: 4-[3-(6-Methoxyquinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(6-methoxyquinoline-3-ylamino)-2-methyl-propenyl] benzoate to obtain the title compound (99%).

25

MS (EI, 70 eV) m/z 348 (M⁺), 333, 307, 201, 174, 146, 131, 115, 91

Step 3: 4-[3-(6-Methoxyquinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy-benzamide

30

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(6-methoxyquinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid to obtain the title compound (75%).

¹H NMR (300 MHz, acetone-d₆) δ 1.88 (s, 3H), 3.83 (s, 3H), 3.91 (s, 2H), 6.54 (s, 1H), 6.83-6.84 (d, 1H, J=7.4 Hz), 7.02-7.06 (dd, 2H, J=7.4 Hz), 7.19-7.32 (m, 3H), 7.92-8.00 (dd, 3H, J=7.6 Hz), 8.63-8.64 (d, 1H, J=7.6 Hz)
MS (LC, 70 eV) m/z 364 (M⁺)

5

Example 35: 4-[3-(6-Hydroxy-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[3-(6-hydroxy-quinoline-3-ylamino)-2-methyl-propenyl] benzoate

10 The procedure of Step 1 of Example 1 was repeated except for using 6-hydroxy-quinoline-3-ylamine as the starting material to obtain the title compound (68%).

15 ¹H NMR (200 MHz, CDCl₃), σ 1.84 (s, 3H, CH₃), 3.78 (s, 2H, CH₂), 3.91 (s, 3H, OCH₃), 6.46 (s, 1H, CH), 6.78 (s, 2H, ArH), 6.86 (m, 2H, ArH), 7.18 (d, 2H J=8.0Hz, ArH), 7.58 (d 1H J=9.3Hz, ArH), 7.84 (d, 2H J=8.0Hz, ArH), 8.08 (m, 1H, ArH)

20 **Step 2: 4-[3-(6-Hydroxy-quinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid**

 The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(6-hydroxy-quinoline-3-ylamino)-2-methyl-propenyl] benzoate to obtain the title compound (58%).

25 ¹H NMR (200 MHz, CDCl₃), σ 2.45 (s, 3H, CH₃), 4.54 (s, 2H, CH₂), 7.14 (s, 1H, CH), 7.68 (m, 2H, ArH), 7.86 (d, 2H J=8.1Hz, ArH), 8.17 (m, 1H, ArH), 8.39 (d, 2H J=8.5Hz, ArH), 9.10 (m, 1H, ArH)

30 **Step 3: 4-[3-(6-Hydroxy-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy-benzamide**

 The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(6-hydroxy-quinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid to obtain the title compound (34%).

¹H NMR (200 MHz, CDCl₃), σ 2.47 (s, 3H, CH₃), 4.78 (s, 2H, CH₂), 7.02 (s, 1H, CH), 7.78 (m, 2H, ArH), 7.84 (d, 2H J=8.1Hz, ArH), 8.25 (m, 1H, ArH), 8.34 (d, 2H J=8.5Hz, ArH), 8.79 (m, 1H, ArH)

Example 36: 4-[3-(Propyl-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[3-(propyl-quinoline-3-ylamino)-2-methyl-propenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using propyl-quinoline-3-ylamine as the starting material to obtain the title compound (19%).

¹H NMR (200 MHz, CDCl₃), σ 1.01 (t, J=7.4 Hz, 3H, CH₃), 1.76 (q, 2H, J=7.4 Hz, CH₂), 1.92 (s, 3H, CH₃), 3.47 (t, J=7.4 Hz, 3H, NCH₂), 3.93 (s, 3H, OCH₃), 4.09 (s, 2H, NCH₂), 6.39 (s, 1H, ArCH), 7.11 (d, 1H, J=2.8 Hz, ArH), 7.39 (m, 4H, ArH), 7.61 (t, 1H, J=9.8 Hz, ArH), 7.90 (s, 1H, ArH), 7.94 (d, 2H, J=8.0 Hz, ArH), 8.63 (d, 1H J=3.2 Hz, ArH)

Step 2: 4-[3-(Propyl-quinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[2-methyl-3-(propyl-quinoline-3-ylamino)-propenyl] benzoate to obtain the title compound (50%).

Step 3: 4-[3-(Propyl-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy-benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[2-methyl-3-(propyl-quinoline-3-ylamino)-propenyl]-benzoic acid to obtain the title compound (19%).

MS (LC, 70 eV) m/z 375 (M⁺)

Example 37: 4-{3-[(2-Hydroxy-ethyl)-quinoline-3-ylamino]-2-methyl-propenyl}-N-hydroxy-benzamide

Step 1: Methyl 4-(3-{[2-(*tert*-butyl-dimethyl-silanyloxy)-ethyl]-quinoline-3-ylamino}-2-methyl-propenyl) benzoate

5 The procedure of Step 1 of Example 1 was repeated except for using [2-(*tert*-butyl-dimethyl-silanyloxy)-ethyl]-quinoline-3-ylamine as the starting material to obtain the title compound (51 %).

¹H NMR (200 MHz, CDCl₃), σ 0.10 (s, 6H, SiCH₃), 0.88 (s, 9H, CH₃X₃),
10 1.84 (s, 3H, CH₃), 3.70 (t, 2H, J=5.8 Hz, CH₂), 3.79 (s, 3H, OCH₃), 3.92 (t, 2H, J=5.8 Hz, CH₂), 4.18 (s, 1H, CH₂), 6.36 (s, 1H, CH), 7.22 (m, 2H, ArH), 7.40 (m, 3H, ArH), 7.60 (m, 1H, ArH), 7.91 (s, 1H, ArH), 7.94 (d, 2H, J=8.2 Hz, ArH), 8.66 (d, 1H, J=2.8 Hz, ArH)

Step 2: 4-(3-{[2-(*tert*-Butyl-dimethyl-silanyloxy)-ethyl]-quinoline-3-ylamino}-2-methyl-propenyl)-benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-(3-{[2-(*tert*-butyl-dimethyl-silanyloxy)-ethyl]-quinoline-3-ylamino}-2-methyl-propenyl) benzoate to obtain the title compound (69 %).

Step 3: 4-{3-[(2-Hydroxy-ethyl)-quinoline-3-ylamino]-2-methyl-propenyl}-N-hydroxy-benzamide

20 The procedure of Step 3 of Example 1 was repeated except for using 4-(3-{[2-(*tert*-butyl-dimethyl-silanyloxy)-ethyl]-quinoline-3-ylamino}-2-methyl-propenyl)-benzoic acid to obtain the title compound (20 %).

MS (LC, 70 eV) m/z 377 (M⁺)

Example 38: 4-[3-(Formyl-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[3-(formyl-quinoline-3-ylamino)-2-methyl-propenyl] benzoate

The procedure of Step 1 of Example 1 was repeated except for using

formyl-quinoline-3-ylamine as the starting material to obtain the title compound (96 %).

¹H NMR (200 MHz, CDCl₃), σ 1.90 (s, 3H, CH₃), 3.89 (s, 3H, OCH₃), 4.67 (s, 2H, CH₂), 6.42 (s, 1H, CH), 7.20 (d, J=8.0 Hz, 2H, ArH), 7.72 (m, 4H, ArH), 7.94 (d, J=8.0 Hz, 2H, ArH), 8.12 (d, J=8.6 Hz, 1H, ArH), 8.70 (s, 1H, CHO), 8.88 (d, 1H J=2.8 Hz, ArH)

Step 2: 4-[3-(Formyl-quinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(formyl-quinoline-3-ylamino)-2-methyl-propenyl] benzoate to obtain the title compound (85 %).

Step 3: 4-[3-(Formyl-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy-benzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(formyl-quinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid to obtain the title compound (73 %).

¹H NMR (200 MHz, CDCl₃), σ 1.90 (s, 3H, CH₃), 4.65 (s, 2H, CH₂), 6.42 (s, 1H, CH), 7.20 (d, J=8.0 Hz, 2H, ArH), 7.77 (m, 4H, ArH), 7.94 (d, J=8.0 Hz, 2H, ArH), 8.10 (d, J=8.6 Hz, 1H, ArH), 8.70 (s, 1H, CHO), 8.88 (d, 1H J=2.8 Hz, ArH), 10.42 (brs, 1H)

Example 39: 4-[2-(Quinoline-3-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(naphthalene-1-yloxy)-propenyl] benzoate

Methyl 4-(3-Bromo-2-*t*-butoxycarbonylpropenyl) benzoate (9) (355 mg 1.00 mM) obtained in Preparation Example 7 was dissolved in acetone (5 ml), to which potassium carbonate (207 mg 1.50 mM) and 1-naphthalenol (144 mg 1.00 mM) were added, followed by refluxing for 3 hours. After

completing the reaction, the mixture was cooled to room temperature, filtered to remove solvent. The resulting residue was purified by silica gel column chromatography to obtain the title compound as a white solid (438 mg, 99%).

5

¹H NMR (200 MHz, CDCl₃) δ 1.49 (s, 9H, CH₃), 3.89 (s, 3H, OCH₃), 4.96 (s, 2H, CH₂), 6.84 (d, 1H J=7.33 Hz, ArH), 7.53 (m, 5H, ArH), 7.89 (m, 1H, ArH), 8.01 (m, 3H, ArH), 8.24 (m, 3H, ArH)

10 **Step 2: Methyl 4-[2-carboxy-3-(naphthalene-1-yloxy)-propenyl] benzoate**

Methyl 4-[2-*tert*-butoxycarbonyl-3-(naphthalene-1-yloxy)-propenyl] benzoate (372 mg 0.89 mM) was dissolved in dichloromethane (12 mL), to which trifluoroacetic acid (0.90 mL 1.00 mM) was slowly added dropwise, followed by reacting at room temperature for 6 hours. After completing the reaction, the solvent was removed under a reduced pressure at room temperature. The residue was diluted dichloromethane and concentrated again under a reduced pressure to remove residual trifluoroacetic acid to obtain the title compound as a brown solid (315 mg, 98%).

20 **Step 3: Methyl 4-[2-hydroxymethyl-3-(naphthalene-1-yloxy)-propenyl] benzoate**

Methyl 4-[2-carboxy-3-(naphthalene-1-yloxy)-propenyl] benzoate (2 g, 5.52 mM) was dissolved in tetrahydrofuran (30 mL), to which triethylamine (1.15 mL, 8.27 mM) and ethyl chloroformate (0.792 mL, 8.279 mM) were added dropwise at 0 °C, followed by stirring for 1 hour. Sodium borohydride (1.462 mg, 38.64 mM) was added to the reaction solution, distilled water (10 mL) was slowly added thereto, followed by stirring at temperature for 2.5 hours. The reaction solution was treated with 1 N hydrochloric acid to adjust pH thereof to 2 and extracted with ethyl acetate. The resulting organic layer was washed saturated sodium bicarbonate and brine, dried over magnesium sulfate and filtered. The residue was purified by silica gel column chromatography to obtain the title compound as a white solid (1.58 mg, 82%).

30

¹H NMR (200 MHz, CDCl₃) δ 3.89 (s, 3H, OCH₃), 4.55 (s, 2H, CH₂), 4.88 (s, 2H, CH₂), 6.71 (d, 1H J=7.5 Hz, ArH), 6.96 (s, 1H, CH), 7.28-7.54 (m, 6H, ArH), 7.83 (m, 1H, ArH), 8.03 (d, 2H J=8.1 Hz, ArH), 8.30 (m, 1H, ArH)

5

Step 4A: Methyl 4-[2-hydroxymethyl-3-(naphthalene-1-yloxy)-propenyl] benzoate

Methyl 4-[2-hydroxymethyl-3-(naphthalene-1-yloxy)-propenyl] benzoate (1.2 g, 3.44 mM) was dissolved in dichloromethane (11 mL) and manganese dioxide (4.5 g, 51.67 mM) was added thereto, followed by refluxing for 3 hours. The mixture was filtered and the solvent was removed under a reduced pressure. The resulting residue was purified by silica gel column chromatography to obtain the title compound as a white solid (526 mg, 44%).

15

¹H NMR (200 MHz, CDCl₃) δ 3.90 (s, 3H, OCH₃), 5.04 (s, 2H, CH₂), 6.91 (d, 1H J=7.5 Hz, ArH), 7.28 (m, 4H, ArH), 7.72 (m, 4H, ArH), 8.04 (d, 2H J=8.1 Hz, ArH), 8.15 (s, 1H, CH), 9.78 (s, 1H, COH)
MS (EI, 70eV) m/z 346 (M⁺), 203, 159, 144, 131, 115, 91, 77, 59, 40

20

Step 4B: Methyl 4-[2-bromomethyl-3-(naphthalene-1-yloxy)-propenyl] benzoate

Methyl 4-[2-bromomethyl-3-(naphthalene-1-yloxy)-propenyl] benzoate (1.57 g, 4.52 mM) was dissolved in dichloromethane (15 mL), and triphenylphosphine (1.78 g, 6.79 mM) was added thereto. The mixture was cooled to 0°C to which tetrabromomethane (2.25 g, 6.79 mM) was added, followed by stirring for 6 hours. The solvent was removed under a reduced pressure and the resulting residue was purified by silica gel column chromatography to obtain the title compound as a white solid (1.36 g, 73%).

30

¹H NMR (200 MHz, CDCl₃) δ 3.91 (s, 3H, OCH₃), 4.42 (s, 2H, CH₂), 4.98 (s, 2H, CH₂), 6.71 (d, 1H J=7.5 Hz, ArH), 7.05 (s, 1H, CH), 7.27-7.56 (m, 6H, ArH), 7.83 (m, 1H, ArH), 8.03 (d, 2H J=8.1 Hz, ArH), 8.30 (m, 1H, ArH)

Step 5A: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl] benzoate

5 Methyl 4-[2-bromomethyl-3-(naphthalene-1-yloxy)-propenyl] benzoate (200 mg 0.58 mM) and 3-aminoquinoline (92 mg 0.64 mM) were dissolved in tetrahydrofuran (2 mL), to which dibutyldichlorotin (3.5 mg 0.01 mM) and diphenylsilane (128 mg, 0.70 mM) were added, followed by stirring for 18 hours. After completing the reaction, the resulting mixture was extracted with ethyl acetate. The organic layer was washed with brine, dried
10 over anhydrous magnesium sulfate, filtered and concentrated under a reduced pressure. The resulting residue was purified by silica gel column chromatography to obtain the title compound as a white solid (150 mg, 55%).

15 ¹H NMR (200 MHz, CDCl₃) δ 3.90 (s, 3H, OCH₃), 4.19 (d 2H J=1.0 Hz, CH₂), 4.85 (s, 2H, CH₂), 6.95 (s, 1H, CH), 7.16 (m, 1H, ArH), 7.20 (m, 1H, ArH), 7.21-7.60 (m, 10H, ArH), 7.75-7.95 (m, 5H, ArH), 8.27 (m, 1H, ArH)

Step 5B: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl] benzoate

20 Methyl 4-[2-bromomethyl-3-(naphthalene-1-yloxy)-propenyl] benzoate (300 mg 0.72 mM) was dissolved in acetone (8 mL), to which potassium carbonate (150 mg 1.08 mM) and 3-aminoquinoline (57 mg 0.61 mM) were added thereto, followed by allowing the mixture to reflux for 3 hours. After completing the reaction, the resulting mixture was cooled to
25 room temperature, filtered and concentrated under a reduced pressure. The resulting residue was purified by silica gel column chromatography to obtain the title compound as a white solid (158 mg, 32%).

30 ¹H NMR (200 MHz, CDCl₃) δ 3.90 (s, 3H, OCH₃), 4.19 (d 2H J=1.0 Hz, CH₂), 4.85 (s, 2H, CH₂), 6.95 (s, 1H, CH), 7.16 (m, 1H, ArH), 7.20 (m, 1H, ArH), 7.21-7.60 (m, 10H, ArH), 7.75-7.95 (m, 5H, ArH), 8.27 (m, 1H, ArH)

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(naphthalene-1-yloxy)-

propenyl]benzoic acid

Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl] benzoate (156 mg, 0.316 mM) was dissolved in tetrahydrofuran (3 mL), and lithium hydroxide (133 mg, 3.16 mM) was added thereto. After adding distilled water (3 mL) thereto, the mixture was stirred at room temperature for 10 minutes and stirred at 50°C for 3 hours. After completing the reaction, the resulting mixture was cooled to room temperature and ice water was added thereto. The solvent was removed under a reduced pressure, and the resulting residue was cooled to 5°C and acidified (pH 2) with 2 N HCl, followed by filtering and drying in the oven to obtain the title compound as a yellow solid (146 mg, 99%).

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl]-N-hydroxy-benzamide

4-[2-(Quinoline-3-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl]benzoic acid (140 mg, 0.30 mM) was dissolved in dimethylformimide (3 mL), cooled to 0°C and triethylamine (64 µL, 0.456 mM) and N-methansulfonyloxy-6-trifluoro benzotriazole (103 mg, 0.365 mM) were added thereto, followed by stirring for 30 minutes. *tert*-Butyldimethylsilyloxyamine (67 mg, 0.45 mM) was added to the reaction solution and stirred at room temperature for 3 hours. After completing the reaction, the resulting mixture was cooled and concentrated under a reduced pressure. The resulting residue was purified by silica gel column chromatography to obtain the title compound (54 mg, 31%).

¹H NMR (200 MHz, CDCl₃) δ 4.38 (d 2H J=4.8Hz, CH₂), 5.00 (s, 2H, CH₂), 6.25 (m, 1H, NH), 6.87 (d, 1H J=7.4Hz, ArH), 7.10 (s, 1H, CH), 7.16 (m, 1H, ArH), 7.20 (m, 1H, ArH), 7.21-7.60 (m, 10H, ArH), 7.75-7.95 (m, 5H, ArH), 8.27 (m, 1H, NH), 8.60 (m, 1H, OH)

Example 40: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-cyano-phenoxy)-propenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(4-cyano-phenoxy)-propenyl]

benzoate

The procedure of Step 1 of Example 39 was repeated except for using 4-cyano-phenol as the starting material to obtain the title compound.

5 ¹H NMR (200 MHz, CDCl₃), σ 1.54 (s, 9H, 3CH₃), 3.92 (s, 3H, OCH₃), 4.83 (s, 2H, CH₂), 7.00 (d, 2H J=8.9Hz, ArH), 7.49 (d, 2H J=8.7Hz, ArH), 7.61 (d, 2H J=8.9Hz, ArH), 8.05 (d, 2H J=8.7Hz, ArH)

Step 2: Methyl 4-[2-carboxy-3-(4-cyano-phenoxy)-propenyl] benzoate

10 The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(4-cyano-phenoxy)-propenyl] benzoate to obtain the title compound.

Step 3: Methyl 4-[2-hydromethyl-3-(4-cyano-phenoxy)-propenyl] benzoate

15 The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(4-cyano-phenoxy)-propenyl] benzoate to obtain the title compound.

20 ¹H NMR (200 MHz, CDCl₃), σ 3.89 (s, 3H, OCH₃), 4.40 (s, 2H, CH₂), 4.72 (s, 2H, CH₂), 6.89 (s, 1H, CH), 6.91 (d, 2H J=9.0 Hz, ArH), 7.28 (d, 2H J=8.1 Hz, ArH), 7.53 (d, 2H J=9.0Hz, ArH), 7.98 (d, 2H J=8.1 Hz, ArH)

Step 4: Methyl 4-[2-bromo-3-(4-cyano-phenoxy)-propenyl] benzoate

25 The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydromethyl-3-(4-cyano-phenoxy)-propenyl] benzoate to obtain the title compound.

30 ¹H NMR (200 MHz, CDCl₃), σ 3.91 (s, 3H, OCH₃), 4.29 (s, 2H, CH₂), 4.81 (s, 2H, CH₂), 6.89 (d, 2H J=9.0 Hz, ArH), 7.02 (s, 1H, CH), 7.29 (d, 2H J=8.1 Hz, ArH), 7.56(d, 2H J=9.0 Hz, ArH), 8.00 (d, 2H J=8.1 Hz, ArH)

Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-cyano-phenoxy)-

propenyl] benzoate

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromo-3-(4-cyano-phenoxy)-propenyl] benzoate to obtain the title compound (34%).

¹H NMR (300 MHz, CDCl₃) δ 3.91 (s, 3H, OCH₃), 4.20 (d, J=5.0 Hz, 2H, NCH₂), 4.48 (t, J=5.7 Hz, 1H, NH), 4.76 (s, 2H, OCH₂), 6.90 (d, J=7.2 Hz, 2H, ArH), 7.00 (s, 1H, CH), 7.06 (d, J=2.7 Hz, 1H, ArH), 7.26 (m, 3H, ArH), 7.43 (m, 2H, ArH), 7.56 (m, 3H, ArH), 7.97 (m, 1H, ArH), 8.00 (d, J=7.2 Hz, 2H, ArH), 8.50 (d, J=2.7 Hz, 1H, ArH)

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-cyano-phenoxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-cyano-phenoxy)-propenyl] benzoate to obtain the title compound (88%).

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-cyano-phenoxy)-propenyl]-N-hydroxy benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(4-cyano-phenoxy)-propenyl]-benzoic acid to obtain the title compound (70%).

Example 41: 4-[2-(Quinoline-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-N-hydroxybenzamide**Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(3,5-dimethoxy-phenoxy)-propenyl] benzoate**

The procedure of Step 1 of Example 39 was repeated except for using 3,5-dimethoxy-phenol) as the starting material to obtain the title compound.

¹H NMR (200 MHz, CDCl₃) δ 1.55 (s, 9H, 3CH₃), 3.77 (s, 6H, 2OCH₃), 3.92 (s, 3H, OCH₃), 4.74 (s, 2H, CH₂), 6.14 (s, 3H, CH), 7.53 (d, 2H J=8.1Hz, ArH), 7.93 (s, 1H, CH), 8.04 (d, 2H J=8.1Hz, ArH)

Step 2: Methyl 4-[2-carboxy-3-(3,5-dimethoxy-phenoxy)-propenyl] benzoate

5 The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(3,5-dimethoxy-phenoxy)-propenyl] benzoate to obtain the title compound.

Step 3: Methyl 4-[2-hydroxymethyl-3-(3,5-dimethoxy-phenoxy)-propenyl] benzoate

10 The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(3,5-dimethoxy-phenoxy)-propenyl] benzoate to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 3.73 (s, 6H, 2OCH₃), 3.91 (s, 3H, OCH₃), 4.41 (s, 2H, CH₂), 4.67 (s, 2H, CH₂), 6.06 (m, 3H, CH), 6.88 (s, 1H, CH),
15 7.32 (d, 2H J=8.1Hz, ArH), 8.00 (d, 2H J=8.1Hz, ArH)

Step 4: Methyl 4-[2-bromomethyl-3-(3,5-dimethoxy-phenoxy)-propenyl] benzoate

20 The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(3,5-dimethoxy-phenoxy)-propenyl] benzoate to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 3.73 (s, 6H, 2OCH₃), 3.91 (s, 3H, OCH₃), 4.30 (s, 2H, CH₂), 4.74 (s, 2H, CH₂), 6.06 (m, 3H, CH), 6.97 (s, 1H, CH),
25 7.32 (d, 2H J=8.1Hz, ArH), 8.01 (d, 2H J=8.1Hz, ArH)

Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl] benzoate

30 The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(3,5-dimethoxy-phenoxy)-propenyl] benzoate to obtain the title compound (34%).

¹H NMR (300 MHz, CDCl₃) δ 3.66 (s, 6H, OCH₃), 3.83 (s, 3H, OCH₃), 4.13

(s, 2H, OCH₂), 4.38 (s, 1H, NH), 4.63 (s, 2H, NCH₂), 5.98 (s, 2H, ArH), 6.05 (s, 1H, ArH), 6.86 (s, 1H, CH), 7.00 (s, 1H, ArH), 7.21 (m, 2H, ArH), 7.35 (m, 2H, ArH), 7.50 (m, 1H, ArH), 7.88 (m, 1H, ArH), 7.97 (d, J=16.2 Hz, 2H, ArH), 8.43 (d, J=2.7 Hz, 1H, ArH)

5

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl] benzoate to obtain the title compound (91 %).

10

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-benzoic acid to obtain the title compound (39 %).

15

Example 42: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-benzyloxy-phenoxy)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(4-benzyloxy-phenoxy)-propenyl] benzoate

20

The procedure of Step 1 of Example 39 was repeated except for using 4-benzyloxy-phenol as the starting material to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 1.54 (s, 9H, 3CH₃), 3.93 (s, 3H, OCH₃), 4.74 (s, 2H, CH₂), 5.04 (s, 2H, CH₂), 6.91 (m, 5H, ArH), 7.36 (m, 4H, ArH), 7.56 (d, 2H J=8.5Hz, ArH), 8.02 (s, 1H, CH), 8.04 (d, 2H J=8.5Hz, ArH)

25

Step 2: Methyl 4-[2-carboxy-3-(4-benzyloxy-phenoxy)-propenyl] benzoate

30

The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(4-benzyloxy-phenoxy)-propenyl] benzoate to obtain the title compound.

Step 3: Methyl 4-[2-hydroxymethyl-3-(4-benzyloxy-phenoxy)-propenyl] benzoate

5 The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(4-benzyloxy-phenoxy)-propenyl] benzoate to obtain the title compound.

10 ¹H NMR (200 MHz, CDCl₃), σ 3.91 (s, 3H, OCH₃), 4.43 (s, 2H, CH₂), 4.65 (s, 2H, CH₂), 5.00 (s, 2H, CH₂), 6.84 (m, 5H, ArH), 7.37 (m, 7H, ArH), 8.00 (d, 2H J=8.5Hz, ArH)

Step 4: Methyl 4-[2-bromomethyl-3-(4-benzyloxy-phenoxy)-propenyl] benzoate

15 The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(4-benzyloxy-phenoxy)-propenyl]-benzoate to obtain the title compound.

20 ¹H NMR (200 MHz, CDCl₃), σ 3.92 (s, 3H, OCH₃), 4.43 (s, 2H, CH₂), 4.73 (s, 2H, CH₂), 5.01 (s, 2H, CH₂), 6.85 (m, 5H, ArH), 6.96 (s, 1H, CH), 7.36 (m, 7H, ArH), 8.02 (d, 2H J=8.5Hz, ArH)

Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-benzyloxy-phenoxy)-propenyl] benzoate

25 The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(4-benzyloxy-phenoxy)-propenyl] benzoate to obtain the title compound (40%).

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-benzyloxy-phenoxy)-propenyl]-benzoic acid

30 The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-benzyloxy-phenoxy)-propenyl] benzoate to obtain the title compound (85%).

Step7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-benzyloxy-phenoxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(4-benzyloxy-phenoxy)-propenyl]-benzoic acid to obtain the title compound (39%).

Example 43: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-fluoro-phenoxy)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(4-fluoro-phenoxy)-propenyl] benzoate

The procedure of Step 1 of Example 39 was repeated except for using 4-fluoro-phenol as the starting material to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 1.53 (s, 9H, 3CH₃), 3.92 (s, 3H, OCH₃), 4.72 (s, 2H, CH₂), 6.91 (m, 5H, ArH), 7.53 (d, 2H J=8.5Hz, ArH), 7.92 (s, 1H, CH), 8.03 (d, 2H J=8.5Hz, ArH)

Step 2: Methyl 4-[2-carboxy-3-(4-fluoro-phenoxy)-propenyl] benzoate

The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(4-fluoro-phenoxy)-propenyl] benzoate to obtain the title compound.

Step 3: Methyl 4-[2-hydroxymethyl-3-(4-fluoro-phenoxy)-propenyl] benzoate

The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(4-fluoro-phenoxy)-propenyl] benzoate to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 3.91 (s, 3H, OCH₃), 4.23 (s, 2H, CH₂), 4.66 (s, 2H, CH₂), 6.93 (m, 4H, ArH), 7.31 (d, 2H J=8.5Hz, ArH), 7.94 (s, 1H, CH), 8.01 (d, 2H J=8.5Hz, ArH)

Step 4: Methyl 4-[2-bromomethyl-3-(4-fluoro-phenoxy)-propenyl]

benzoate

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(4-fluoro-phenoxy)-propenyl] benzoate to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 3.91 (s, 3H, OCH₃), 4.31 (s, 2H, CH₂), 4.73 (s, 2H, CH₂), 6.79 (m, 2H, ArH), 6.95 (s, 1H, CH), 6.97 (m, 2H, ArH), 7.32 (d, 2H J=8.5Hz, ArH), 8.02 (d, 2H J=8.5Hz, ArH)

Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-fluoro-phenoxy)-propenyl] benzoate

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(4-fluoro-phenoxy)-propenyl] benzoate to obtain the title compound (42 %).

¹H NMR (300 MHz, CDCl₃) δ 3.90 (s, 3H, OCH₃), 4.13 (s, 2H, OCH₂), 4.47 (s, 1H, NH), 4.68 (s, 2H, NCH₂), 6.81 (m, 2H, ArH), 6.97 (m, 3H, ArH), 7.06 (d, J=2.7 Hz, 1H, ArH), 7.29 (d, J=8.4 Hz, 2H, ArH), 7.43 (m, 2H, ArH), 7.54 (m, 1H, ArH), 7.95 (m, 1H, ArH), 8.00 (d, J=8.4 Hz, 2H, ArH), 8.50 (d, J=3.0 Hz, 1H, ArH)

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-fluoro-phenoxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-fluoro-phenoxy)-propenyl] benzoate to obtain the title compound (92 %).

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-fluoro-phenoxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(4-fluoro-phenoxy)-propenyl]-benzoic acid to obtain the title compound (39 %).

Example 44: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-acetylamino-phenoxy)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(4-acetylamino-phenoxy)-propenyl] benzoate

5 The procedure of Step 1 of Example 39 was repeated except for using 4-acetylamino-phenol as the starting material to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 1.53 (S, 9H, 3CH₃), 2.30 (S, 3H, CH₃), 3.83 (S, 3H, OCH₃), 4.56 (S, 2H, CH₂), 6.72 (m, 2H, ArH), 6.81 (S, 1H, CH), 7.27 (m, 4H, ArH), 7.91 (d, 2H J=8.5Hz, ArH)

10

Step 2: Methyl 4-[2-carboxy-3-(4-acetylamino-phenoxy)-propenyl] benzoate

15 The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(4-acetylamino-phenoxy)-propenyl] benzoate to obtain the title compound.

Step 3: Methyl 4-[2-hydroxymethyl-3-(4-acetylamino-phenoxy)-propenyl] benzoate

20 The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(4-acetylamino-phenoxy)-propenyl] benzoate to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 2.30 (S, 3H, CH₃), 3.83 (S, 3H, OCH₃), 4.29 (S, 2H, CH₂), 4.56 (S, 2H, CH₂), 6.72 (m, 2H, ArH), 6.81 (S, 1H, CH), 7.27 (m, 4H, ArH), 7.91 (d, 2H J=8.1Hz, ArH)

25

Step 4: Methyl 4-[2-bromomethyl-3-(4-acetylamino-phenoxy)-propenyl] Methyl

30 The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(4-acetylamino-phenoxy)-propenyl] benzoate to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 2.30 (s, 3H, CH₃), 3.83 (s, 3H, OCH₃), 4.56 (s, 2H, CH₂), 6.72 (m, 2H, ArH), 6.81 (s, 1H, CH), 7.27 (m, 4H, ArH), 7.91 (d, 2H J=8.1Hz, ArH), 9.73 (s, 1H, CH)

5 **Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-acetylamino-phenoxy)-propenyl] benzoate**

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(4-acetylamino-phenoxy)-propenyl] benzoate to obtain the title compound (10%).

10

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-acetylamino-phenoxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-acetylamino-phenoxy)-propenyl] benzoate to obtain the title compound (36%).

15

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-acetylamino-phenoxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(4-acetylamino-phenoxy)-propenyl]-benzoic acid to obtain the title compound (38%).

20

Example 45: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-methylsulfenyl-phenoxy)-propenyl]-N-hydroxybenzamide

25 **Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(4-methylsulfenyl-phenyloxy)-propenyl] benzoate**

The procedure of Step 1 of Example 39 was repeated except for using 4-methylsulfenyl-phenol as the starting material to obtain the title compound.

30

¹H NMR (200 MHz, CDCl₃), σ 1.54 (s, 9H, 3CH₃), 2.43 (s, 3H, CH₃), 3.90 (s, 3H, OCH₃), 4.68 (s, 2H, CH₂), 6.82 (d, 2H J=8.9Hz, ArH), 7.23 (d, 2H J=9.0Hz, ArH), 7.32 (d, 2H J=8.14Hz, ArH), 7.89 (s, 1H, CH), 8.01 (d, 2H J=7.7Hz, ArH)

Step 2: Methyl 4-[2-carboxy-3-(4-methylsulfenyl-phenyloxy)-propenyl] benzoate

The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(4-methylsulfenyl-phenyloxy)-propenyl] benzoate to obtain the title compound.

Step 3: Methyl 4-[2-hydroxymethyl-3-(4-methylsulfenyl-phenyloxy)-propenyl] benzoate

The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(4-methylsulfenyl-phenyloxy)-propenyl] benzoate to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 2.43 (s, 3H, CH₃), 3.90 (s, 3H, OCH₃), 4.68 (s, 2H, CH₂), 6.82 (d, 2H J=8.9Hz, ArH), 6.89 (s, 1H, CH), 7.23 (d, 2H J=9.0Hz, ArH), 7.32 (d, 2H J=8.14Hz, ArH), 8.01 (d, 2H J=7.7Hz, ArH)

Step 4: Methyl 4-[2-bromomethyl-3-(4-methylsulfenyl-phenyloxy)-propenyl] benzoate

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(4-methylsulfenyl-phenyloxy)-propenyl] benzoate to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 2.45 (s, 3H, CH₃), 3.92 (s, 3H, OCH₃), 4.31 (s, 2H, CH₂), 4.75 (s, 2H, CH₂), 4.79 (m, 2H, ArH), 6.98 (s, 1H, CH), 7.28 (m, 2H, ArH), 8.03 (dd, 2H J=8.3, 1.5Hz, ArH)

Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-methylsulfenyl-phenyloxy)-propenyl] benzoate

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(4-methylsulfenyl-phenyloxy)-propenyl] benzoate to obtain the title compound (47%).

¹H NMR (300 MHz, CDCl₃) δ 3.90 (s, 3H, OCH₃), 4.19 (d, J=5.7 Hz, 2H, NCH₂), 4.52 (t, J=6.0 Hz, 1H, NH), 4.70 (s, 2H, OCH₂), 6.81 (d, J=8.7 Hz, 2H, ArH), 6.93 (s, 1H, CH), 7.04 (d, J=2.4 Hz, 1H, ArH), 7.26 (m, 5H, ArH), 7.41 (m, 2H, ArH), 7.54 (m, 1H, ArH), 7.94 (m, 1H, ArH), 7.99 (d, J=8.7 Hz, 2H, ArH), 8.49 (d, J=2.7 Hz, 1H, ArH)

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-methylsulfenyl-phenoxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-methylsulfenyl-phenoxy)-propenyl] benzoate to obtain the title compound (73%).

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-methylsulfenyl-phenoxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(4-methylsulfenyl-phenoxy)-propenyl]-benzoic acid to obtain the title compound (39%).

Example 46: 4-[2-(Quinoline-3-ylaminomethyl)-3-phenoxy-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-(2-*tert*-butoxycarbonyl-3-phenoxy propenyl) benzoate

The procedure of Step 1 of Example 39 was repeated except for using (phenol) as the starting material to obtain the title compound.

¹H NMR (200 MHz, CDCl₃) δ 1.55 (s, 9H, 3CH₃), 3.92 (s, 3H, OCH₃), 4.79 (s, 2H, CH₂), 6.99 (m, 3H, ArH), 7.32 (m, 3H, ArH), 7.56 (d, 2H J=8.1Hz, ArH), 7.95 (s, 1H, CH), 8.04 (d, 2H J=7.7Hz, ArH)

Step 2: Methyl 4-(2-carboxy-3-phenoxy propenyl) benzoate

The procedure of Step 2 of Example 39 was repeated except for using methyl 4-(2-*tert*-butoxycarbonyl-3-phenoxy propenyl) benzoate to obtain the title compound.

Step 3: Methyl 4-(2-hydroxymethyl-3-phenoxy propenyl) benzoate

The procedure of Step 3 of Example 39 was repeated except for using methyl 4-(2-carboxy-3-phenoxy propenyl) benzoate to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 3.90 (s, 3H, OCH₃), 4.40 (s, 2H, CH₂), 4.69 (s, 2H, CH₂), 6.88 (m, 3H, ArH), 7.30 (m, 5H, ArH), 8.00 (d, 2H J=8.3Hz, ArH)

Step 4: Methyl 4-(2-bromomethyl-3-phenoxy propenyl) benzoate

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-(2-hydroxymethyl-3-phenoxy propenyl) benzoate to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 3.91 (s, 3H, OCH₃), 4.32 (s, 2H, CH₂), 4.78 (s, 2H, CH₂), 6.89 (m, 4H, ArH), 7.32 (m, 4H, ArH), 8.02 (d, 2H J=8.3Hz, ArH)

Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-phenoxy-propenyl] benzoate

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-(2-bromomethyl-3-phenoxy propenyl) benzoate to obtain the title compound (46%).

¹H NMR (300 MHz, CDCl₃) δ 3.40 (s, 3H, OCH₃), 4.21 (d, J=3.6 Hz, 2H, NCH₂), 4.52 (brs, 1H, NH), 4.73 (s, 2H, OCH₂), 6.88 (d, J=7.8 Hz, 2H, ArH), 6.90 (s, 1H, CH), 6.97 (t, J=13.2Hz, 1H, ArH), 7.06 (d, J=2.7 Hz, 1H, ArH), 7.29 (m, 4H, ArH), 7.41 (m, 2H, ArH), 7.55 (m, 1H, ArH), 7.94 (m, 1H, ArH), 7.99 (d, J=8.1 Hz, 2H, ArH), 8.50 (d, J=2.7 Hz, 1H, ArH)

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-phenoxy-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using

methyl 4-[2-(quinoline-3-ylaminomethyl)-3-phenoxy-propenyl] benzoate to obtain the title compound (90 %).

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-phenoxy-propenyl]-N-hydroxy benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-phenoxy-propenyl]-benzoic acid to obtain the title compound (71 %).

Example 47: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(4-chloro-naphthalene-1-yloxy)-propenyl]benzoate

The procedure of Step 1 of Example 39 was repeated except for using (4-chloro-1-naphthalenol) as the starting material to obtain the title compound (2.545 g, 93 %).

¹H NMR (200 MHz, CDCl₃), σ 1.49 (s, 9H, 3CH₃), 3.89 (s, 3H, OCH₃), 4.95 (s, 2H, CH₂), 6.74 (m, 1H, CH), 7.39-7.66 (m, 5H, ArH), 7.98 (m, 5H, ArH), 8.23 (m, 5H, ArH)

Step 2: Methyl 4-[2-carboxy-3-(4-chloro-naphthalene-1-yloxy)-propenyl] benzoate

The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(4-chloro-naphthalene-1-yloxy)-propenyl] benzoate to obtain the title compound (1.9 g, 99 %).

Step 3: Methyl 4-[2-hydroxymethyl-3-(4-chloro-naphthalene-1-yloxy)-propenyl] benzoate

The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(4-chloro-naphthalene-1-yloxy)-propenyl] benzoate to obtain the title compound (886 mg, 48 %).

¹H NMR (200 MHz, CDCl₃), σ 3.89 (s, 3H, OCH₃), 4.52 (s, 2H, CH₂), 4.84 (s, 2H, CH₂), 6.74 (m, 1H, CH), 7.39-7.66 (m, 5H, ArH), 7.98 (m, 5H, ArH), 8.23 (m, 5H, ArH)

5 **Step 4: Methyl 4-[2-bromomethyl-3-(4-chloro-naphthalene-1-yloxy)-propenyl] benzoate**

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(4-chloro-naphthalene-1-yloxy)-propenyl] benzoate to obtain the title compound.

10

¹H NMR (200 MHz, CDCl₃), σ 3.90 (s, 3H, OCH₃), 4.38 (s, 2H, CH₂), 4.95 (s, 2H, CH₂), 6.74 (m, 1H, CH), 7.39-7.66 (m, 5H, ArH), 7.98 (m, 5H, ArH), 8.23 (m, 5H, ArH)

15 **Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl] benzoate**

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(4-chloro-naphthalene-1-yloxy)-propenyl] benzoate to obtain the title compound (13%).

20

¹H NMR (200 MHz, CDCl₃), σ 3.89 (s, 3H, OCH₃), 4.30 (d, 2H J=4.68Hz, CH₂), 4.89 (s, 2H, CH₂), 6.58 (d, 1H J=8.4Hz, ArH), 7.04 (d, 1H J=8.2Hz, ArH), 7.30-7.66 (m, 8H, ArH), 7.95 (m, 3H, ArH), 8.28 (dd, 2H J=16.7 7.3Hz, ArH), 8.49 (m, 1H J=8.1Hz, ArH)

25

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl] benzoate to obtain the title compound (50%).

30

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl]-benzoic acid to obtain the title compound (16%).

5 ¹H NMR (200 MHz, CDCl₃), σ 4.35 (s, 2H, CH₂), 5.00 (s, 2H, CH₂), 6.85 (d, 1H J=8.5Hz, ArH), 7.10 (s, 1H, CH), 7.20 (m, 1H, ArH), 7.33-7.83 (m, 11H, ArH), 8.16 (d, 1H J=8.5Hz, ArH), 8.29 (m, 1H J=8.2Hz, ArH), 8.54 (m, 1H, ArH)

10 **Example 48: 4-[2-(3,4-Dimethoxyphenylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl]-N-hydroxybenzamide**

Step 1: Methyl 4-[2-(3,4-dimethoxyphenylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl] benzoate

15 The procedure of Step 5 of Example 39 was repeated except for using (4-chloro-1-naphthalenol) as the starting material to obtain the title compound (36%).

¹H NMR (200 MHz, CDCl₃), σ 3.75 (s, 3H, OCH₃), 3.80 (s, 3H, OCH₃), 3.89 (s, 3H, OCH₃), 4.14 (d, 2H J=1.2Hz, CH₂), 4.84 (s, 2H, CH₂), 6.24 (m, 3H, ArH), 6.58 (d, 1H J=8.1Hz, ArH), 6.74 (d, 1H J=8.5Hz, ArH), 6.98 (s, 1H, CH), 7.37 (m, 1H, ArH), 7.54-7.64 (m, 3H, ArH), 7.98 (d, 2H J=8.3Hz, ArH), 8.20-8.32 (m, 2H, ArH)

25 **Step 2: 4-[2-(3,4-Dimethoxyphenylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl]benzoic acid**

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(3,4-dimethoxyphenylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl] benzoate to obtain the title compound (94%).

30 **Step 3: 4-[2-(3,4-Dimethoxyphenylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl]-N-hydroxybenzamide**

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(3,4-dimethoxyphenylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-

propenyl]benzoic acid to obtain the title compound (74%).

¹H NMR (200 MHz, CDCl₃), σ 3.66 (s, 3H, OCH₃), 3.67 (s, 3H, OCH₃), 4.17 (s, 2H, CH₂), 4.94 (s, 2H, CH₂), 6.24 (m, 3H, ArH), 6.58 (d, 1H J=8.1Hz, ArH), 6.74 (d, 1H J=8.5Hz, ArH), 6.98 (s, 1H, CH), 7.37 (m, 1H, ArH), 7.54-7.64 (m, 3H, ArH), 7.98 (d, 2H J=8.3Hz, ArH), 8.20-8.32 (m, 2H, ArH)

Example 49: 4-[2-(Quinoline-3-ylaminomethyl)-3-(3-methoxy-phenylsulfenyl)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(3-methoxy-phenylsulfenyl)-propenyl] benzoate

The procedure of Step 1 of Example 39 was repeated except for using 3-methoxy-phenylsulfenyl as the starting material to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 1.54 (s, 9H, 3CH₃), 2.43 (s, 3H, CH₃), 3.90 (s, 3H, OCH₃), 4.68 (s, 2H, CH₂), 6.82 (d, 2H J=8.9Hz, ArH), 7.23 (d, 2H J=9.0Hz, ArH), 7.32 (d, 2H J=8.14Hz, ArH), 7.89 (s, 1H, CH), 8.01 (d, 2H J=7.7Hz, ArH)

Step 2: Methyl 4-[2-carboxy-3-(3-methoxy-phenylsulfenyl)-propenyl] benzoate

The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(3-methoxy-phenylsulfenyl)-propenyl] benzoate to obtain the title compound.

Step 3: Methyl 4-[2-hydroxymethyl-3-(3-methoxy-phenylsulfenyl)-propenyl] benzoate

The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(3-methoxy-phenylsulfenyl)-propenyl] benzoate to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 3.71 (s, 3H, CH₃), 3.80 (s, 2H, CH₂), 3.90 (s,

3H, OCH₃), 4.38 (s, 2H, CH₂), 6.82 (d, 2H J=8.9Hz, ArH), 6.89 (s, 1H, CH), 7.23 (d, 2H J=9.0Hz, ArH), 7.32 (d, 2H J=8.14Hz, ArH), 8.01 (d, 2H J=7.7Hz, ArH)

Step 4: Methyl 4-[2-bromomethyl-3-(3-methoxy-phenylsulfenyl)-propenyl] benzoate

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(3-methoxy-phenylsulfenyl)-propenyl] benzoate to obtain the title compound (890 mg, 74 %).

¹H NMR (200 MHz, CDCl₃), σ 3.71 (s, 3H, CH₃), 3.80 (s, 2H, CH₂), 3.90 (s, 3H, OCH₃), 4.38 (s, 2H, CH₂), 6.82 (d, 2H J=8.9Hz, ArH), 6.89 (s, 1H, CH), 7.23 (d, 2H J=9.0Hz, ArH), 7.32 (d, 2H J=8.14Hz, ArH), 8.01 (d, 2H J=7.7Hz, ArH)

Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(3-methoxy-phenylsulfenyl)-propenyl] benzoate

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(3-methoxy-phenylsulfenyl)-propenyl] benzoate to obtain the title compound (24 %).

¹H NMR (200 MHz, CDCl₃), σ 3.70 (s, 3H, CH₃), 3.83 (s, 2H, CH₂), 3.91 (s, 3H, OCH₃), 4.18 (d, 2H J=5.1Hz, CH₂), 4.37 (m, 1H, NH), 6.71-6.89 (m, 4H, CH, ArH), 7.07-7.39 (m, 4H, ArH), 7.44 (m, 2H, ArH), 7.60 (m, 1H, ArH), 7.95 (m, 3H, ArH), 8.49 (m, 1H, ArH)

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(3-methoxy-phenylsulfenyl)-propenyl]benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(3-methoxy-phenylsulfenyl)-propenyl] benzoate to obtain the title compound (94 %).

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(3-methoxy-phenylsulfenyl)-

propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(3-methoxy-phenylsulfenyl)-propenyl]benzoic acid to obtain the title compound (10%).

¹H NMR (200 MHz, CDCl₃), σ 3.70 (s, 3H, CH₃), 3.83 (s, 2H, CH₂), 4.18 (d, 2H J=5.1Hz, CH₂), 4.37 (m, 1H, NH), 6.71-6.89 (m, 4H, CH, ArH), 7.07-7.39 (m, 4H, ArH), 7.44 (m, 2H, ArH), 7.60 (m, 1H, ArH), 7.95 (m, 3H, ArH), 8.49 (m, 1H, ArH)

Example 50: 4-[2-(Quinoline-3-ylaminomethyl)-3-(3-methoxy-phenylsulfenyl)-propenyl]-N-hydroxybenzamide**Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoate**

The procedure of Step 1 of Example 39 was repeated except for using 3-methoxy-2-phenylsulfenol as the starting material to obtain the title compound (2.55 g, 97%).

¹H NMR (200 MHz, CDCl₃), σ 1.53 (s, 9H, 3CH₃), 3.91 (s, 3H, OCH₃), 4.05 (s, 2H, CH₂), 7.30-7.48 (m, 5H, ArH), 7.62-7.76 (m, 5H, ArH), 8.89 (d, 2H J=8.1Hz, ArH)

Step 2: Methyl 4-[2-carboxy-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoate

The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoate to obtain the title compound (2.573 g, 99%).

Step 3: Methyl 4-[2-hydroxymethyl-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoate

The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoate to obtain the title compound (1.896 mg, 76 %).

¹H NMR (200 MHz, CDCl₃), σ 3.91 (s, 3H, OCH₃), 3.93 (s, 2H, CH₂), 4.43 (s, 2H, CH₂), 6.71 (s, 1H, CH), 7.14-7.60 (m, 7H, ArH), 7.65-7.96 (m, 5H, ArH)

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Step 4: Methyl 4-[2-bromomethyl-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoate

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoate to obtain the title compound (76%).

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¹H NMR (200 MHz, CDCl₃), σ 3.91 (s, 3H, OCH₃), 3.93 (s, 2H, CH₂), 4.43 (s, 2H, CH₂), 6.71 (s, 1H, CH), 7.14-7.60 (m, 7H, ArH), 7.65-7.96 (m, 5H, ArH)

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Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoate

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoate to obtain the title compound (28%).

20

¹H NMR (200 MHz, CDCl₃), σ 3.91 (s, 3H, OCH₃), 3.94 (s, 2H, CH₂), 4.21 (d, 2H J=6.5Hz, CH₂), 4.37 (m, 1H, NH), 6.76 (s, 1H, CH), 7.03 (m, 1H, ArH), 7.22-7.49 (m, 8H, ArH), 7.58-7.80 (m, 5H, ArH), 7.93 (d, 2H J=8.6Hz, ArH), 8.47 (d, 1H J=2.9Hz, ArH)

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Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoate to obtain the title compound (80%).

30

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(3-methoxy-phenylsulfenyl)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(3-methoxy-2-phenylsulfenyl)-propenyl] benzoic acid to obtain the title compound (48%).

¹H NMR (200 MHz, CDCl₃), σ 3.94 (s, 2H, CH₂), 4.21 (d, 2H J=6.5Hz, CH₂), 4.37 (m, 1H, NH), 6.76 (s, 1H, CH), 7.03 (m, 1H, ArH), 7.22-7.49 (m, 8H, ArH), 7.58-7.80 (m, 5H, ArH), 7.93 (d, 2H J=8.6Hz, ArH), 8.47 (d, 1H J=2.9Hz, ArH)

Example 51: 4-[2-(Quinoline-3-ylaminomethyl)-3-(2-nitro-naphthalene-1-yloxy)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(2-nitro-naphthalene-1-yloxy)-propenyl] benzoate

The procedure of Step 1 of Example 39 was repeated except for using 2-nitro-1-naphthalenol as the starting material to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 1.13 (s, 9H, 3CH₃), 3.95 (s, 3H, OCH₃), 5.07 (s, 2H, CH₂), 7.51-7.71 (m, 5H, ArH), 7.89 (t, 3H J=9.2Hz, ArH), 8.00 (s, 1H, CH), 8.12 (d, 2H J=8.1Hz, ArH), 8.31 (d, 2H J=8.4Hz, ArH)

Step 2: Methyl 4-[2-carboxy-3-(2-nitro-naphthalene-1-yloxy)-propenyl] benzoate

The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(2-nitro-naphthalene-1-yloxy)-propenyl] benzoate to obtain the title compound.

Step 3: Methyl 4-[2-hydroxymethyl-3-(2-nitro-naphthalene-1-yloxy)-propenyl] benzoate

The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(2-nitro-naphthalene-1-yloxy)-propenyl] benzoate to obtain the title compound (536 mg, 57%).

¹H NMR (200 MHz, CDCl₃), σ 3.90 (s, 3H, OCH₃), 4.51 (s, 2H, CH₂), 5.03

(S, 2H, CH₂), 7.03 (S, 1H, CH), 7.27 (d, 2H J=8.1Hz, ArH), 7.59 (m, 3H, ArH), 7.84 (t, 2H, ArH), 7.96 (d, 2H J=8.1Hz, ArH), 8.14 (d, 2H J=8.1Hz, ArH)

Step 4: Methyl 4-[2-bromomethyl-3-(2-nitro-naphthalene-1-yloxy)-propenyl] benzoate

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(2-nitro-naphthalene-1-yloxy)-propenyl] benzoate to obtain the title compound (408 mg, 70 %).

¹H NMR (200 MHz, CDCl₃), σ 3.90 (S, 3H, OCH₃), 4.51 (S, 2H, CH₂), 5.03 (S, 2H, CH₂), 6.93 (m, 4H, ArH), 7.03 (S, 1H, CH), 7.27 (d, 2H J=8.1Hz, ArH), 7.59 (m, 3H, ArH), 7.84 (m, 2H, ArH), 7.96 (d, 2H J=8.5Hz, ArH), 8.23 (d, 2H J=8.5Hz, ArH)

Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(2-nitro-naphthalene-1-yloxy)-propenyl] benzoate

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(2-nitro-naphthalene-1-yloxy)-propenyl] benzoate to obtain the title compound (206 mg, 47 %).

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(2-nitro-naphthalene-1-yloxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(2-nitro-naphthalene-1-yloxy)-propenyl] benzoate to obtain the title compound (89 %).

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(2-nitro-naphthalene-1-yloxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(2-nitro-naphthalene-1-yloxy)-propenyl]-benzoic acid to obtain the title compound (24 %).

Example 52: 4-[2-(3,4-Dimethoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(9H-carbazol-1-yloxy)-propenyl] benzoate

5 The procedure of Step 1 of Example 39 was repeated except for using 9H-carbazol-1-ylol as the starting material to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 1.53 (s, 9H, 3CH₃), 3.90 (s, 3H, CH₂), 4.86 (s, 2H, CH₂), 6.90 (d, 1H J=8.5Hz, ArH), 6.95 (d, 1H J=11.5Hz, ArH), 7.29 (m, 2H, ArH), 7.35 (m, 3H, ArH), 7.57 (d, 1H J=8.3Hz, ArH), 7.98 (m, 1H, ArH)

Step 2: Methyl 4-[2-carboxy-3-(9H-carbazol-1-yloxy)-propenyl] benzoate

15 The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(9H-carbazol-1-yloxy)-propenyl]-benzoate to obtain the title compound (99%).

Step 3: Methyl 4-[2-hydroxymethyl-3-(9H-carbazol-1-yloxy)-propenyl] benzoate

20 The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(9H-carbazol-1-yloxy)-propenyl] benzoate to obtain the title compound (28%).

25 ¹H NMR (200 MHz, CDCl₃), σ 3.88 (s, 3H, OCH₃), 4.59 (s, 2H, CH₂), 4.94 (s, 2H, CH₂), 7.97 (m, 2H, ArH), 7.17-7.41 (m, 5H, ArH), 7.97 (m, 2H, ArH), 8.12 (s, 1H, CH)

Step 4: Methyl 4-[2-bromomethyl-3-(9H-carbazol-1-yloxy)-propenyl] benzoate

30 The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(9H-carbazol-1-yloxy)-propenyl] benzoate to obtain the title compound (57%).

¹H NMR (200 MHz, CDCl₃), σ 3.91 (s, 3H, OCH₃), 4.36 (s, 2H, CH₂), 4.87 (s, 2H, CH₂), 6.83 (m, 3H, ArH), 6.99 (s, 1H, CH), 7.35 (m, 5H, ArH), 8.03 (m, 3H, ArH)

5 **Step 5: Methyl 4-[2-(3,4-dimethoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-benzoate**

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(9H-carbazol-1-yloxy)-propenyl]-benzoate to obtain the title compound (77%).

10

¹H NMR (200 MHz, CDCl₃), σ 3.78 (s, 6H, 2OCH₃), 3.91 (s, 3H, OCH₃), 4.24 (s, 2H, CH₂), 4.51 (s, 2H, CH₂), 6.16-6.31 (m, 2H, ArH), 6.55-6.70 (m, 2H, ArH), 6.99 (s, 1H, CH), 7.10-7.39 (m, 5H, ArH), 7.99 (d, 2H J=8.1Hz, ArH)

15

Step 6: 4-[2-(3,4-Dimethoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(3,4-dimethoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-benzoate to obtain the title compound (96%).

20

Step 7: 4-[2-(3,4-Dimethoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(3,4-dimethoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-benzoic acid to obtain the title compound (40 %).

25

30

¹H NMR (200 MHz, CDCl₃), σ 3.78 (s, 6H, 2OCH₃), 4.24 (s, 2H, CH₂), 4.51 (s, 2H, CH₂), 6.16-6.31 (m, 2H, ArH), 6.55-6.70 (m, 2H, ArH), 6.99 (s, 1H, CH), 7.10-7.39 (m, 5H, ArH), 7.99 (d, 2H J=8.1Hz, ArH)

Example 53: 4-[2-(Quinoline-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-formyl-3-(9H-carbazol-1-yloxy)-propenyl] benzoate

The procedure of Step 4A of Example 39 was repeated except for using 9H-carbazol-1-ylol as the starting material to obtain the title compound (54%).

¹H NMR (200 MHz, CDCl₃) δ 3.89 (s, 3H, OCH₃), 4.90 (s, 2H, OCH₂), 6.90 (dd, J=2.4, 8.2 Hz, 1H, ArH), 6.94 (d, J=2.4 Hz, 1H, ArH), 7.22 (m, 1H, ArH), 7.35 (m, 1H, ArH), 7.60 (s, 1H, CH), 7.70 (d, J=8.6 Hz, 2H, ArH), 7.90 (s, 1H, ArH), 7.94 (d, J=3.4 Hz, 1H, ArH), 8.06 (m, 3H, ArH), 9.71 (s, 1H, CHO)

Step 2: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl] benzoate

The procedure of Step 5A of Example 39 was repeated except for using methyl 4-[2-formyl-3-(9H-carbazol-1-yloxy)-propenyl] benzoate to obtain the title compound (24%).

¹H NMR (300 MHz, CDCl₃) δ 3.88 (s, 3H, OCH₃), 4.34 (d, J=5.4 Hz, 2H, NCH₂), 4.57 (t, J=5.4 Hz, 1H, NH), 4.98 (s, 2H, OCH₂), 6.53 (d, J=8.4 Hz, 1H, ArH), 7.02 (s, 1H, CH), 7.08 (m, 2H, ArH), 7.24 (m, 1H, ArH), 7.41 (m, 7H, ArH), 7.90 (m, 1H, ArH), 7.98 (d, J=8.4 Hz, 2H, ArH), 8.25 (s, 1H, ArH), 8.36 (d, J=7.8 Hz, 1H, ArH), 8.42 (d, J=3.0 Hz, 1H, ArH)

Step 3: 4-[2-(Quinoline-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl] benzoate to obtain the title compound (86%).

Step 4: 4-[2-(Quinoline-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-

benzoic acid to obtain the title compound (21 %).

Example 54: 4-[2-Hydroxymethyl-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide

Step 1: 4-[2-Hydroxymethyl-3-(9H-carbazol-1-yloxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(9H-carbazol-1-yloxy)-propenyl] benzoate as the starting material to obtain the title compound (95 %).

Step 2: 4-[2-Hydroxymethyl-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-hydroxymethyl-3-(9H-carbazol-1-yloxy)-propenyl]-benzoic acid to obtain the title compound (31 %).

Example 55: 4-[2-(Pyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-(pyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl] benzoate

The procedure of Step 5A of Example 39 was repeated except for using 3-aminopyridine as the starting material to obtain the title compound (92 %).

¹H NMR (300 MHz, CDCl₃) δ 3.89 (s, 3H, OCH₃), 4.11 (d, J=6.0 Hz, 2H, NCH₂), 4.57 (t, J=6.0 Hz, 1H, NH), 4.74 (s, 2H, OCH₂), 6.83 (m, 4H, ArH + CH), 7.06 (m, 1H, ArH), 7.26 (m, 1H, ArH), 7.32 (m, 2H, ArH), 7.96 (m, 5H, ArH), 8.10 (d, J=3.0 Hz, 1H, ArH), 8.27 (s, 1H, ArH)

Step 2: 4-[2-(Pyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl] benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(pyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]

benzoate to obtain the title compound (52 %).

Step 3: 4-[2-(Pyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxy benzamide

5

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(pyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl] benzoic acid to obtain the title compound (31 %).

10 **Example 56: 4-[2-(6-Methoxypyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide**

Step 1: Methyl 4-[2-(6-methoxypyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl] benzoate

15 The procedure of Step 5A of Example 39 was repeated except for using (6-methoxy-3-aminopyridine) as the starting material to obtain the title compound (52 %).

¹H NMR (300 MHz, CDCl₃) δ 3.86 (s, 3H, OCH₃), 3.92 (s, 3H, OCH₃), 4.07 (s, 2H, NCH₂), 4.14 (brs, 1H, NH), 4.74 (s, 2H, OCH₂), 6.61 (d, J=8.7 Hz, 1H, ArH), 6.78 (m, 2H, ArH), 6.87 (s, 1H, CH), 7.00 (m, 2H, ArH), 7.30 (m, 4H, ArH), 7.65 (d, J=3.0 Hz, 1H, ArH), 7.96 (m, 5H, ArH)

20

Step 2: 4-[2-(6-Methoxypyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-benzoic acid

25

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(6-methoxypyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-benzoate to obtain the title compound (93 %).

30

Step 3: 4-[2-(6-Methoxypyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(6-methoxypyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-benzoic acid to obtain the title compound (31 %).

Example 57: 4-[2-(4-Methoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-(4-methoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl] benzoate

The procedure of Step 5A of Example 39 was repeated except for using 4-methoxyphenylamine as the starting material to obtain the title compound (66%).

¹H NMR (300 MHz, CDCl₃) δ 3.69 (s, 3H, OCH₃), 3.92 (s, 3H, OCH₃), 4.15 (s, 2H, NCH₂ + NH), 4.76 (s, 2H, OCH₂), 6.29 (m, 3H, ArH), 6.80 (m, 1H, ArH), 6.93 (m, 1H, CH), 7.08 (m, 1H, ArH), 7.35 (m, 5H, ArH), 7.82 (m, 1H, ArH), 7.98 (m, 4H, ArH)

Step 2: 4-[2-(4-Methoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(4-methoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-benzoate to obtain the title compound (99%).

Step 3: 4-[2-(4-Methoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(4-methoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-benzoic acid to obtain the title compound (20%).

Example 58: 4-[2-(Quinoline-3-ylaminomethyl)-3-(biphenyl-4-yloxy)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-*tert*-butylcarbonyl-3-(biphenyl-4-yloxy)-propenyl] benzoate

The procedure of Step 1 of Example 39 was repeated except for using 4-biphenol as the starting material to obtain the title compound.

¹H NMR (200 MHz, CDCl₃), σ 1.54 (s, 9H, CH₃), 3.91 (s, 3H, OCH₃), 4.82 (s, 2H, CH₂), 7.05 (m, 2H, ArH), 7.40-7.57 (m, 9H, ArH), 7.94 (s, 1H, CH), 8.04 (m, 2H, ArH)

5 **Step 2: Methyl 4-[2-carboxy-3-(biphenyl-4-yloxy)-propenyl]-benzoate**

The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butylcarbonyl-3-(biphenyl-4-yloxy)-propenyl]-benzoate to obtain the title compound.

10 **Step 3: Methyl 4-[2-hydromethyl-3-(biphenyl-4-yloxy)-propenyl] benzoate**

The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(biphenyl-4-yloxy)-propenyl]-benzoate to obtain the title compound.

15

¹H NMR (200 MHz, CDCl₃), σ 3.89 (s, 3H, OCH₃), 4.44 (s, 2H, CH₂), 4.73 (s, 2H, CH₂), 6.94 (m, 3H, ArH), 7.31-7.99 (m, 9H, ArH), 8.01 (d, 2H J=8.3Hz, ArH)

20 **Step 4: Methyl 4-[2-bromomethyl-3-(biphenyl-4-yloxy)-propenyl] benzoate**

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydromethyl-3-(biphenyl-4-yloxy)-propenyl] benzoate to obtain the title compound.

25

¹H NMR (200 MHz, CDCl₃), σ 3.93 (s, 3H, OCH₃), 4.89 (s, 2H, CH₂), 7.03 (d, 2H J=8.7Hz, ArH), 7.27-7.73 (m, 10H, ArH), 8.10 (d, 2H J=8.7Hz, ArH), 9.73 (s, 1H, CH)

30 **Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(biphenyl-4-yloxy)-propenyl] benzoate**

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(biphenyl-4-yloxy)-propenyl] benzoate to

obtain the title compound (59%).

Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(biphenyl-4-yloxy)-propenyl] benzoic acid

5 The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(biphenyl-4-yloxy)-propenyl] benzoate to obtain the title compound (86%).

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(biphenyl-4-yloxy)-propenyl]-N-hydroxybenzamide

10 The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(biphenyl-4-yloxy)-propenyl] benzoic acid to obtain the title compound (49%).

Example 59: 4-[2-(Quinoline-3-ylaminomethyl)-3-(benzothiazol-2-yloxy)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(benzothiazol-2-yloxy)-propenyl] benzoate

15 The procedure of Step 1 of Example 39 was repeated except for using 2-benzothiazolol as the starting material to obtain the title compound (89%).

20 ¹H NMR (200 MHz, CDCl₃), σ 1.40 (s, 9H, 3CH₃), 3.92 (s, 3H, OCH₃), 5.00 (s, 2H, CH₂), 6.69 (m, 1H, ArH), 7.01-7.36 (m, 5H, ArH), 7.83 (s, 1H, CH), 8.02 (d, 2H J=8.1 Hz, ArH)

Step 2: Methyl 4-[2-carboxy-3-(benzothiazol-2-yloxy)-propenyl] benzoate

25 The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(benzothiazol-2-yloxy)-propenyl] benzoate to obtain the title compound (63%).

Step 3: Methyl 4-[2-hydroxymethyl-3-(benzothiazol-2-yloxy)-propenyl] benzoate

30 The procedure of Step 3 of Example 39 was repeated except for using

methyl 4-[2-carboxy-3-(benzothiazol-2-yloxy)-propenyl] benzoate to obtain the title compound (98%).

¹H NMR (200 MHz, CDCl₃), σ 3.94 (s, 3H, OCH₃), 4.07 (s, 2H, CH₂), 4.89 (s, 2H, CH₂), 6.25 (m, 1H, ArH), 6.88 (s, 1H, CH), 7.03-7.19 (m, 2H, ArH), 7.37 (m, 4H, ArH), 8.11 (d, 2H J=8.1 Hz, ArH)

Step 4: Methyl 4-[2-bromomethyl-3-(benzothiazol-2-yloxy)-propenyl] benzoate

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(benzothiazol-2-yloxy)-propenyl] benzoate to obtain the title compound (95%).

¹H NMR (200 MHz, CDCl₃), σ 3.94 (s, 3H, OCH₃), 4.01 (s, 2H, CH₂), 4.96 (s, 2H, CH₂), 6.60 (m, 1H, ArH), 7.03 (s, 1H, CH), 7.13 (m, 3H, ArH), 7.33 (m, 3H, ArH), 8.08 (d, 2H J=8.1 Hz, ArH)

Step 5: Methyl 4-{2-(quinoline-3-ylaminomethyl)-3-(benzothiazol-2-yloxy)-propenyl}-benzoate

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(benzothiazol-2-yloxy)-propenyl]-benzoate to obtain the title compound (79%).

¹H NMR (200 MHz, CDCl₃), σ 3.93 (s, 3H, OCH₃), 4.91 (s, 2H, CH₂), 6.41 (m, 1H, ArH), 6.86 (m, 1H, ArH), 7.00 (s, 1H, CH), 7.10 (m, 1H, ArH), 7.40 (m, 4H J=8.1 Hz, ArH), 7.89 (m, 2H, ArH), 8.07 (m, 3H, ArH), 8.44 (d, 2H J=5.7 Hz, ArH)

Step 6: 4-{2-(Quinoline-3-ylaminomethyl)-3-(benzothiazol-2-yloxy)-propenyl}-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-2-(quinoline-3-ylaminomethyl)-3-(benzothiazol-2-yloxy)-propenyl benzoate to obtain the title compound (91%).

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(benzothiazol-2-yloxy)-propenyl]-N-hydroxy-benzamide

5 The procedure of Step 7 of Example 39 was repeated except for using 4-{2-(quinoline-3-ylaminomethyl)-3-(benzothiazol-2-yloxy)-propenyl}-benzoic acid to obtain the title compound (13%).

Example 60: 4-{2-[(3,4-Dimethoxy-phenylamino)-methyl]-3-(benzothiazol-2-yloxy)-propenyl}-N-hydroxy-benzamide

10 **Step 1: Methyl 4-{2-[(3,4-dimethoxy-phenylamino)-methyl]-3-(benzothiazol-2-yloxy)-propenyl}-benzoate**

The procedure of Step 1 of Example 39 was repeated except for using 2-benzothiazolol as the starting material to obtain the title compound (52%).

15 ¹H NMR (200 MHz, CDCl₃), σ 3.74 (s, 5H, OCH₃), 3.78 (s, 3H, OCH₃), 3.94 (s, 3H, OCH₃), 4.87 (s, 2H, CH₂), 6.11 (m, 1H, ArH), 6.22 (m, 1H, ArH), 6.40 (m, 1H, ArH), 6.69 (d, 1H J=8.1 Hz, ArH), 6.94 (s, 1H, CH), 7.04~7.14 (m, 2H, ArH), 7.30~7.41 (m, 3H, ArH), 8.09 (d, 2H J=8.1 Hz, ArH)

20

Step 2: 4-{2-[(3,4-Dimethoxy-phenylamino)-methyl]-3-(benzothiazol-2-yloxy)-propenyl}-benzoic acid

25 The procedure of Step 2 of Example 39 was repeated except for using methyl 4-{2-[(3,4-dimethoxy-phenylamino)-methyl]-3-(benzothiazol-2-yloxy)-propenyl}-benzoate to obtain the title compound.

Step 3: 4-{2-[(3,4-Dimethoxy-phenylamino)-methyl]-3-(benzothiazol-2-yloxy)-propenyl}-N-hydroxy-benzamide

30 The procedure of Step 3 of Example 39 was repeated except for using 4-{2-[(3,4-dimethoxy-phenylamino)-methyl]-3-(benzothiazol-2-yloxy)-propenyl}-benzoic acid to obtain the title compound (13%).

Example 61: 4-[2-(Quinoline-3-ylaminomethyl)-3-(1,3-dioxo-1,3-dihydro-

isoindole-2-yl)-propenyl]-N-hydroxy-benzamide**Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl] benzoate**

5 The procedure of Step 1 of Example 39 was repeated except for using 1,3-dioxo-1,3-dihydro-isoindole as the starting material to obtain the title compound (96%).

¹H NMR (200 MHz, CDCl₃), σ 1.53 (s, 9H, 3CH₃), 3.92 (s, 3H, OCH₃), 4.72 (s, 2H, CH₂), 6.91 (m, 5H, ArH), 7.53 (d, 2H J=8.5 Hz, ArH), 7.92 (s, 1H, CH), 8.03 (d, 2H J=8.5 Hz, ArH)

Step 2: Methyl 4-[2-carboxy-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl] benzoate

15 The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl] benzoate to obtain the title compound (99%).

Step 3: Methyl 4-[2-hydroxymethyl-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl]-benzoate

20 The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl]-benzoate to obtain the title compound (64%).

25 ¹H NMR (200 MHz, CDCl₃), σ 3.91 (s, 3H, OCH₃), 4.23 (s, 2H, CH₂), 4.66 (s, 2H, CH₂), 6.93 (m, 4H, ArH), 7.31 (d, 2H J=8.5Hz, ArH), 7.94 (s, 1H, CH), 8.01 (d, 2H J=8.5 Hz, ArH)

Step 4: Methyl 4-[2-bromomethyl-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl]-benzoate

30 The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-2-hydroxymethyl-propenyl]-benzoate to obtain the title compound (66%).

¹H NMR (200 MHz, CDCl₃), σ 3.93 (s, 3H, OCH₃), 4.25 (s, 2H, CH₂), 4.67 (s, 2H, CH₂), 6.93 (m, 4H, ArH), 7.35 (d, 2H J=8.5 Hz, ArH), 7.95 (s, 1H, CH), 8.03 (d, 2H J=8.5 Hz, ArH)

5 **Step 5: Methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl]-benzoate**

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl]-benzoate to obtain the title compound (46%).

10

¹H NMR (200 MHz, CDCl₃), σ 3.78 (s, 6H, OCH₃X₂), 3.91 (s, 3H, OCH₃), 4.24 (s, 2H, CH₂), 4.51 (s, 2H, CH₂), 6.24 (m, 2H, ArH), 6.63 (m, 2H, ArH), 6.99 (s, 1H, CH), 7.25 (m, 5H, ArH), 7.99 (d, 2H J=8.1 Hz, ArH)

15 **Step 6: 4-[2-(Quinoline-3-ylaminomethyl)-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl]-benzoic acid**

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-3-ylaminomethyl)-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl]-benzoate to obtain the title compound.

20

Step 7: 4-[2-(Quinoline-3-ylaminomethyl)-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-3-ylaminomethyl)-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl]-benzoic acid to obtain the title compound (16%).

25

Example 62: 4-[2-Phenylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[2-phenylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

30

The procedure of Step 5B of Example 39 was repeated except for using 2-phenylamine as the starting material to obtain the title compound (94%).

¹H NMR (300 MHz, CDCl₃) δ 3.9 (s, 3H), 4.18 (s, 2H), 4.85 (s, 2H), 6.6-6.9 (m, 4H), 7.17-7.20 (d, 2H, J=7.4 Hz), 7.33-7.36 (q, 4H, J=8.2, 2.1 Hz), 7.45-7.53 (m, 3H), 7.82 (s, 1H), 7.97-8.00 (d, 2H, J=8.2 Hz), 8.29-8.32 (d, 1H, J=8.9 Hz)
MS (EI, 70 eV) m/z 423 (M⁺), 330, 315, 280, 271, 220, 187, 144, 129, 115, 106, 77

Step 2: 4-[2-Phenylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-phenylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (99%).

MS (EI, 70 eV) m/z 409 (M⁺), 398, 316, 301, 266, 220, 195, 144, 129, 115, 106, 93

Step 3: 4-[2-Phenylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-phenylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (92%).

¹H NMR (300 MHz, MeOH-d₄) δ 4.18 (s, 2H), 4.84 (s, 2H), 6.61-6.70 (m, 4H), 7.18-7.19 (d, 2H, J=7.2 Hz), 7.34-7.36 (d, 4H, J=8.2 Hz), 7.42-7.51 (m, 3H), 7.81 (s, 1H), 7.98-8.00 (d, 2H, J=8.2 Hz), 8.26-8.30 (d, 1H, J=8.4 Hz)
MS (LC, 70 eV) m/z 426 (M⁺), 266, 220, 115, 106

Example 63: 4-[2-(3,4-Dihydro-1H-isoquinoline-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(3,4-dihydro-1H-isoquinoline-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for

using 3,4-dihydro-1H-isoquinoline as the starting material to obtain the title compound (92 %).

¹H NMR (300 MHz, CDCl₃) δ 2.77-2.82 (q, 4H, J=10.9, 4.5 Hz), 3.4 (s, 2H), 3.6 (s, 2H), 3.7 (s, 3H), 4.7 (s, 2H), 6.62-6.64 (d, 1H, J=7.5 Hz), 6.64 (s, 2H), 6.99-7.02 (t, 3H, J=9.2, 5.1 Hz), 7.19-7.22 (d, 1H, J=7.8 Hz), 7.30-7.39 (m, 5H), 7.68-7.70 (d, 1H, J=7.2 Hz), 7.86-7.89 (d, 2H, J=8.2 Hz), 8.17-8.20 (d, 1H, J=7.5 Hz)

MS (EI, 70 eV) m/z 463 (M⁺), 320, 187, 157, 146, 132, 115, 104, 91, 59

Step 2: 4-[2-(3,4-Dihydro-1H-isoquinoline-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(3,4-dihydro-1H-isoquinoline-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (99 %).

MS (EI, 70 eV) m/z 449 (M⁺), 409, 398, 354, 318, 302, 251, 229, 214, 186, 172, 157, 144, 131, 115, 98, 83

Step 3: 4-[2-(3,4-Dihydro-1H-isoquinoline-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(3,4-dihydro-1H-isoquinoline-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (65 %).

¹H NMR (300 MHz, CDCl₃) δ 2.78-2.82 (q, 4H, J=10.6, 4.4 Hz), 3.4 (s, 2H), 3.6 (s, 2H), 4.7 (s, 2H), 6.62-6.64 (d, 1H, J=7.4 Hz), 6.65 (s, 2H), 6.89-6.99 (t, 3H, J=9.4, 5.2 Hz), 7.20-7.22 (d, 1H, J=7.6 Hz), 7.28-7.34 (m, 5H), 7.68-7.70 (d, 1H, J=7.6 Hz), 7.88-7.90 (d, 2H, J=8.0 Hz), 8.18-8.20 (d, 1H, J=7.4 Hz)

MS (LC, 70 eV) m/z 465 (M₊₁), 409, 229, 215, 196, 157, 144, 131, 114, 83

Example 64: 4-[2-(2-Methoxy-dibenzofuran-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(2-methoxy-dibenzofuran-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 2-methoxy-dibenzofuran-3-ylamine as the starting material to obtain the title compound (58%).

¹H NMR (300 MHz, CDCl₃) δ 3.8 (s, 3H), 3.9 (s, 3H), 4.00 (s, 2H), 5.36 (s, 2H), 6.66 (s, 1H), 6.79-6.82 (d, 2H, J=7.0 Hz), 7.15-7.40 (m, 10H), 7.65-7.80 (m, 2H), 7.91-7.95 (t, 2H, J=11.6, 8.1 Hz), 8.10-8.19 (d, 1H, J=8.2 Hz)
MS (EI, 70 eV) m/z 543 (M⁺), 474, 331, 316, 280, 253, 226, 213, 183, 157, 106

Step 2: 4-[2-(2-Methoxy-dibenzofuran-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(2-methoxy-dibenzofuran-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (57%).

MS (EI, 70 eV) m/z 529 (M⁺), 334, 316, 302, 277, 253, 239, 226, 213, 198, 170, 155, 144, 127, 115, 85

Step 3: 4-[2-(2-Methoxy-dibenzofuran-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(2-methoxy-dibenzofuran-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (91%).

¹H NMR (300 MHz, CDCl₃) δ 3.9 (s, 3H), 4.04 (s, 2H), 5.30 (s, 2H), 6.64 (s, 1H), 6.74-6.80 (d, 2H, J=7.2 Hz), 7.11-7.35 (m, 10H), 7.60-7.78 (m, 2H), 7.90-7.92 (t, 2H, J=12.4, 8.2 Hz), 8.10-8.19 (d, 1H, J=8.2 Hz)
MS (LC, 70 eV) m/z 546 (M⁺), 335, 277, 253, 240, 227, 198, 170, 155, 144, 115, 83

Example 65: 4-[2-(Naphthalene-1-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(Naphthalene-1-ylamino)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

5 The procedure of Step 5B of Example 39 was repeated except for using 1-naphthaleneamine as the starting material to obtain the title compound (95%).

10 ^1H NMR (300 MHz, CDCl_3) δ 3.9 (s, 3H), 4.41 (s, 2H), 4.94 (s, 2H), 6.75-6.76 (d, 2H, $J=3.5$ Hz), 7.07 (s, 1H), 7.32-7.58 (m, 10H), 7.82-7.86 (t, 3H, $J=12.9, 5.1$ Hz), 8.00-8.03 (d, 2H, $J=8.2$ Hz), 8.40-8.43 (d, 1H, $J=9.2$ Hz)
MS (EI, 70 eV) m/z 473 (M^+), 330, 187, 156, 143, 129, 115

15 **Step 2: 4-[2-(Naphthalene-1-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid**

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(naphthalene-1-ylamino)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (99%).

20 MS (EI, 70 eV) m/z 459 (M^+), 316, 302, 271, 253, 231, 195, 183, 156, 143, 127, 115

Step 3: 4-[2-(Naphthalene-1-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

25 The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(naphthalene-1-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (69%).

30 ^1H NMR (300 MHz, CDCl_3) δ 4.40 (s, 2H), 4.94 (s, 2H), 6.74-6.76 (d, 2H, $J=4.6$ Hz), 7.04 (s, 1H), 7.28-7.46 (m, 10H), 7.80-7.84 (t, 3H, $J=12.8, 5.2$ Hz), 8.01-8.03 (d, 2H, $J=8.2$ Hz), 8.42-8.44 (d, 1H, $J=8.2$ Hz)
MS (LC, 70 eV) m/z 475 (M^+), 316, 303, 274, 183, 143, 127, 115

Example 66: 4-[2-(Quinoline-8-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(quinoline-8-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 8-aminoquinoline as the starting material to obtain the title compound (87%).

^1H NMR (300 MHz, CDCl_3) δ 3.8 (s, 3H), 4.35 (s, 2H), 4.85 (s, 2H), 6.63-6.66 (d, 1H, $J=7.5$ Hz), 7.04-7.06 (d, 1H, $J=8.0$ Hz), 7.17-7.43 (m, 10H), 7.71-7.74 (t, 1H, $J=8.7, 1.5$ Hz), 7.86-7.89 (d, 3H, $J=8.2$ Hz), 8.25-8.30 (m, 1H), 8.63-8.64 (dd, 1H, $J=4.4, 1.4$ Hz)

MS (EI, 70 eV) m/z 474 (M^+), 331, 187, 157, 144, 129, 115

Step 2: 4-[2-(Quinoline-8-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(quinoline-8-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (30%).

MS (EI, 70 eV) m/z 460 (M^+), 315, 301, 278, 195, 184, 169, 157, 144, 129, 117, 89, 63

Step 3: 4-[2-(Quinoline-8-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(quinoline-8-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (89%).

^1H NMR (300 MHz, CDCl_3) δ 4.34 (s, 2H), 4.85 (s, 2H), 6.64-6.66 (d, 1H, $J=7.4$ Hz), 7.04-7.06 (d, 1H, $J=8.2$ Hz), 7.15-7.33 (m, 10H), 7.72-7.74 (t, 1H, $J=8.4, 1.8$ Hz), 7.84-7.86 (d, 3H, $J=8.4$ Hz), 8.18-8.20 (m, 1H), 8.60-8.62 (dd, 1H, $J=5.4, 1.7$ Hz)

MS (LC, 70 eV) m/z 477 (M^{+1}), 461, 316, 195, 183, 157, 144, 129, 117

Example 67: 4-[2-(6-Methoxy-pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(6-methoxy-pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 6-methoxy-3-aminopyridine as the starting material to obtain the title compound (69%).

^1H NMR (300 MHz, CDCl_3) δ 3.8 (s, 3H), 3.9 (s, 3H), 4.12 (s, 2H), 4.83 (s, 2H), 6.58-6.62 (dd, 1H, $J=7.4, 2.7$ Hz), 6.93 (s, 1H), 7.18-7.24 (m, 3H), 7.37-7.43 (m, 2H), 7.73 (s, 2H), 7.88-7.93 (t, 4H, $J=15.1, 6.9$ Hz), 8.10-8.15 (m, 1H)

MS (EI, 70 eV) m/z 494 (M^{+1}), 480, 454, 330, 316, 289, 275, 255, 231, 215, 195, 181, 164, 149, 137, 115, 101

Step 2: 4-[2-(6-Methoxy-pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(6-methoxy-pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (94%).

MS (EI, 70 eV) m/z 480 (M^{+1}), 316, 290, 229, 181, 164, 149, 115

Step 3: 4-[2-(6-Methoxy-pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(6-methoxy-pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (95%).

^1H NMR (300 MHz, CDCl_3) δ 3.9 (s, 3H), 4.12 (s, 2H), 4.82 (s, 2H), 6.60-6.62 (d, 1H, $J=7.4$ Hz), 6.92 (s, 1H), 7.20-7.23 (m, 3H), 7.36-7.42 (m, 2H),

7.72 (s, 2H), 7.86-7.90 (t, 4H, J=14.8, 7.4 Hz), 8.10-8.12 (m, 1H)

MS (LC, 70 eV) m/z 497 (M^{+1}), 481, 316, 276, 213, 181, 164, 149, 137, 115, 101

5 **Example 68: 4-[2-(1,1-Dioxo-1H-116-naphto[1,8-cd]isothiazol-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide**

Step 1: Methyl 4-[2-(1,1-dioxo-1H-116-naphto[1,8-cd]isothiazol-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

10 The procedure of Step 5B of Example 39 was repeated except for using 1,1-dioxo-1H-116-naphto[1,8-cd]isothiazole as the starting material to obtain the title compound (86%).

15 ^1H NMR (300 MHz, CDCl_3) δ 3.8 (s, 3H), 4.9 (s, 2H), 5.1 (s, 2H), 6.89-6.92 (d, 1H, J=7.7 Hz), 7.11 (s, 1H), 7.31-7.36 (t, 2H, J=16.1, 7.7 Hz), 7.43-7.61 (m, 5H), 7.91-7.94 (d, 3H, J=7.4 Hz), 7.98-8.00 (d, 3H, J=8.3 Hz), 8.12-8.14 (d, 2H, J=7.1 Hz), 8.26-8.29 (d, 1H, J=8.3 Hz)

MS (EI, 70 eV) m/z 535 (M^{+}), 504, 392, 330, 317, 299, 271, 253, 231, 218, 202, 187, 154, 143, 127, 115, 86, 59

20

Step 2: 4-[2-(1,1-Dioxo-1H-116-naphto[1,8-cd]isothiazol-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

25 The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(1,1-dioxo-1H-116-naphto[1,8-cd]isothiazol-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (99%).

MS (EI, 70 eV) m/z 521 (M^{+}), 503, 330, 315, 272, 251, 187, 154, 143, 128, 115

30

Step 3: 4-[3-(1,1-Dioxo-1H-116-naphto[1,8-cd]isothiazol-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using

4-[2-(1,1-dioxo-1H-116-naphto[1,8-cd]isothiazol-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (95 %).

¹H NMR (300 MHz, acetone-d₆) δ 4.8 (s, 2H), 5.0 (s, 2H), 6.84-6.86 (d, 1H, J=7.6 Hz), 7.10 (s, 1H), 7.31-7.34 (t, 2H, J=16.1, 7.4 Hz), 7.43-7.60 (m, 5H), 7.92-7.94 (d, 3H, J=7.6 Hz), 7.96-7.98 (d, 3H, J=8.2 Hz), 8.10-8.12 (d, 2H, J=7.4 Hz), 8.24-8.27 (d, 1H, J=8.2 Hz)

MS (LC, 70 eV) m/z 537 (M⁺)

Example 69: 4-[2-(4-Methoxy-phenylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(4-methoxy-phenylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 4-methoxy-phenylamine as the starting material to obtain the title compound (99 %).

¹H NMR (300 MHz, CDCl₃) δ 3.6 (s, 3H), 3.8 (s, 3H), 4.2 (s, 2H), 4.6 (s, 2H), 6.43-6.46 (d, 1H, J=7.5 Hz), 6.63-6.76 (m, 4H), 7.15-7.20 (q, 2H, J=7.2, 2.4 Hz), 7.28-7.40 (m, 4H), 7.69-7.72 (d, 1H, J=8.0 Hz), 7.82-7.87 (t, 2H, J=12.7, 4.5 Hz), 8.15-8.18 (d, 1H, J=8.3 Hz)

MS (EI, 70 eV) m/z 453 (M₊), 372, 351, 330, 311, 271, 231, 189, 165, 150, 136, 77, 59

Step 2: 4-[2-(4-Methoxy-phenylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(4-methoxy-phenylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (99 %).

MS (EI, 70 eV) m/z 439 (M⁺), 316, 297, 282, 163, 136, 123, 108, 91, 77

Step 3: 4-[2-(4-Methoxy-phenylaminomethyl)-3-(naphthalene-1-

ylloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(4-methoxy-phenylaminomethyl)-3-(naphthalene-1-ylloxymethyl)-propenyl]-benzoic acid to obtain the title compound (69%).

¹H NMR (300 MHz, acetone-d₆) δ 3.6 (s, 3H), 4.2 (s, 2H), 4.6 (s, 2H), 6.44-6.46 (d, 1H, J=7.4 Hz), 6.60-6.72 (m, 4H), 7.16-7.20 (q, 2H, J=7.4, 2.6 Hz), 7.30-7.42 (m, 4H), 7.67-7.71 (d, 1H, J=8.2 Hz), 7.83-7.86 (t, 2H, J=12.6, 4.4 Hz), 8.15-8.18 (d, 1H, J=8.2 Hz)

Example 70: 4-[2-(Thiazol-2-ylaminomethyl)-3-(naphthalene-1-ylloxymethyl)-propenyl]-N-hydroxy-benzamide**Step 1: Methyl 4-[2-(thiazol-2-ylaminomethyl)-3-(naphthalene-1-ylloxymethyl)-propenyl]-benzoate**

The procedure of Step 5B of Example 39 was repeated except for using 2-aminothiazole as the starting material to obtain the title compound (64%).

¹H NMR (300 MHz, CDCl₃) δ 3.7 (s, 3H), 4.1 (s, 2H), 4.7 (s, 2H), 5.96 (s, 1H), 6.54-6.57 (t, 1H, J=7.5, 3.0 Hz), 7.24-7.30 (m, 3H), 7.41-7.48 (m, 4H), 7.80-7.82 (d, 1H, J=7.4 Hz), 7.91-7.96 (dd, 2H, J=8.1, 6.0 Hz), 8.25-8.27 (d, 1H, J=8.1 Hz)

MS (EI, 70 eV) m/z 430 (M⁺), 330, 315, 299, 271, 255, 239, 228, 195, 165, 152, 139, 128, 114, 101, 59

Step 2: 4-[2-(Thiazol-2-ylaminomethyl)-3-(naphthalene-1-ylloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(thiazol-2-ylaminomethyl)-3-(naphthalene-1-ylloxymethyl)-propenyl]-benzoate to obtain the title compound (92%).

MS (EI, 70 eV) m/z 416 (M⁺), 316, 301, 271, 239, 228, 195, 165, 144, 128, 115, 100, 89, 58

Step 3: 4-[2-(Thiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

5 The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(thiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (89%).

¹H NMR (300 MHz, acetone-d₆) δ 4.1 (s, 2H), 4.6 (s, 2H), 5.97 (s, 1H), 6.54-6.58 (t, 1H, J=7.5, 3.0 Hz), 7.22-7.28 (m, 3H), 7.42-7.48 (m, 4H), 7.80-7.82 (d, 1H, J=7.5 Hz), 7.92-7.96 (dd, 2H, J=8.1, 5.2 Hz), 8.25-8.27 (d, 1H, J=8.1 Hz)

MS (LC, 70 eV) m/z 432 (M⁺)

Example 71: 4-[2-(9-Ethyl-9H-carbazol-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-(9-ethyl-9H-carbazol-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

15 The procedure of Step 5B of Example 39 was repeated except for using 9-ethyl-9H-carbazol-3-ylamine as the starting material to obtain the title compound (99%).

¹H NMR (300 MHz, CDCl₃) δ 1.32-1.44 (m, 3H), 3.89 (s, 3H), 4.21-4.33 (m, 2H), 4.50 (s, 2H), 4.78 (s, 2H), 6.50-6.52 (d, 1H, J=7.6 Hz), 6.93 (s, 1H), 7.19 (s, 1H), 7.25-7.54 (m, 11H), 7.64-7.70 (t, 2H, J=8.1, 4.5 Hz), 7.91-7.94 (d, 2H, J=8.2 Hz), 8.34-8.37 (d, 1H, J=8.3 Hz)

MS (EI, 70 eV) m/z 540 (M⁺), 395, 330, 315, 289, 275, 250, 231, 210, 195, 181, 165, 115, 101

Step 2: 4-[2-(9-Ethyl-9H-carbazol-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

30 The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(9-ethyl-9H-carbazol-3-ylaminomethyl)-3-(naphthalene-1-

yloxymethyl)-propenyl]-benzoate to obtain the title compound (91%).

MS (EI, 70 eV) m/z 526 (M^+), 395, 315, 288, 274, 232, 210, 194, 181, 165, 115

5

Step 3: 4-[2-(9-Ethyl-9H-carbazol-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(9-ethyl-9H-carbazol-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (94%).

10

^1H NMR (300 MHz, acetone- d_6) δ 1.32-1.38 (m, 3H), 4.24-4.30 (m, 2H), 4.48 (s, 2H), 4.78 (s, 2H), 6.52-6.54 (d, 1H, $J=7.4$ Hz), 6.92 (s, 1H), 7.19 (s, 1H), 7.35-7.52 (m, 11H), 7.66-7.75 (t, 2H, $J=8.2, 4.2$ Hz), 7.92-7.94 (d, 2H, $J=8.2$ Hz), 8.35-8.37 (d, 1H, $J=8.2$ Hz)

15

MS (LC, 70 eV) m/z 542 (M^{+1})

Example 72: 4-[2-(6-Methoxy-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

20

Step 1: Methyl 4-[2-(6-methoxy-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 6-methoxy-benzothiazol-2-ylamine as the starting material to obtain the title compound (73%).

25

^1H NMR (300 MHz, CDCl_3) δ 3.8 (s, 3H), 3.9 (s, 3H), 4.7 (s, 2H), 4.8 (s, 2H), 6.61-6.63 (d, 1H, $J=7.4$ Hz), 6.87-6.92 (d, 1H, $J=14.4$ Hz), 7.26-7.52 (m, 9H), 7.8 (s, 1H), 7.98-8.01 (d, 2H, $J=8.2$ Hz), 8.30-8.33 (d, 2H, $J=8.2$ Hz)

MS (EI, 70 eV) m/z 510 (M^+), 473, 367, 330, 315, 271, 231, 187, 161, 144, 129, 115, 59

30

Step 2: 4-[2-(6-Methoxy-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(6-methoxy-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (99%).

5 ¹H NMR (200 MHz, CDCl₃), σ 3.81 (s, 3H, OCH₃), 4.41 (s, 2H, CH₂), 4.89 (s, 2H, CH₂), 6.67 (d, 1H J=6.8 Hz, ArH), 6.87 (m, 1H, ArH), 7.03 (s, 1H, CH), 7.13 (m, 1H, ArH), 7.28-7.56 (m, 7H, ArH), 7.83 (m, 1H, ArH), 7.97 (d, 2H J=8.5 Hz, ArH), 8.26 (m, 1H, ArH)
MS (EI, 70 eV) m/z 496 (M⁺), 316, 301, 271, 253, 231, 220, 194, 180, 166,
10 129, 115, 91, 71, 57

Step 3: 4-[2-(6-Methoxy-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using
15 4-[2-(6-methoxy-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (85%).

¹H NMR (300 MHz, acetone-d₆) δ 3.8 (s, 3H), 4.7 (s, 2H), 4.8 (s, 2H), 6.60-6.62 (d, 1H, J=7.2 Hz), 6.88-6.90 (d, 1H, J=8.4 Hz), 7.24-7.48 (m, 9H), 7.8 (s, 1H), 7.92-7.98 (d, 2H, J=8.4 Hz), 8.30-8.32 (d, 2H, J=8.4 Hz)
20 MS (LC, 70 eV) m/z 511 (M⁺)

Example 73: 4-[2-(Naphthalene-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

25 **Step 1: Methyl 4-[2-(naphthalene-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate**

The procedure of Step 5B of Example 39 was repeated except for using 2-naphthaleneamine as the starting material to obtain the title compound (99%).

30

¹H NMR (300 MHz, CDCl₃) δ 3.8 (s, 3H), 4.20 (s, 2H), 4.79 (s, 2H), 6.58-6.60 (d, 1H, J=7.5 Hz), 6.84-6.86 (dd, 1H, J=3.5, 1.0 Hz), 6.92 (s, 1H), 7.14 (s, 1H), 7.21-7.25 (dd, 4H, J=8.0, 3.7 Hz), 7.35-7.45 (m, 6H), 7.51-7.56 (t,

3H, J=12.7, 3.3 Hz), 7.84-7.87 (d, 2H, J=8.2 Hz), 8.23-8.26 (d, 1H, J=7.0 Hz)
MS (EI, 70 eV) m/z 473 (M^+), 330, 315, 271, 255, 231, 195, 182, 156, 143,
127, 115, 77

5 **Step 2: 4-[2-(Naphthalene-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid**

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(naphthalene-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (99%).

10 MS (EI, 70 eV) m/z 459 (M^+), 331, 316, 271, 244, 230, 196, 181, 154, 144,
127, 115, 74

15 **Step 3: 4-[2-(Naphthalene-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide**

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(naphthalene-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (97%).

20 ^1H NMR (300 MHz, acetone- d_6) δ 4.20 (s, 2H), 4.78 (s, 2H), 6.56-6.58 (d, 1H, J=7.4 Hz), 6.80-6.84 (dd, 1H, J=8.5, 3.6 Hz), 6.90 (s, 1H), 7.14 (s, 1H), 7.23-7.26 (dd, 4H, J=8.4, 3.6 Hz), 7.36-7.46 (m, 6H), 7.52-7.55 (t, 3H, J=12.7, 3.5 Hz), 7.82-7.84 (d, 2H, J=8.4 Hz), 8.20-8.22 (d, 1H, J=7.8 Hz)
MS (LC, 70 eV) m/z 475 (M^{+1})

25 **Example 74: 4-[2-(6-Nitro-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide**

30 **Step 1: Methyl 4-[2-(6-nitro-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate**

The procedure of Step 5B of Example 39 was repeated except for using 6-nitro-benzothiazol-2-ylamine as the starting material to obtain the title compound (99%).

¹H NMR (300 MHz, CDCl₃) δ 3.9 (s, 3H), 4.79 (s, 2H), 4.91 (s, 2H), 6.56-6.58 (d, 1H, J=7.4 Hz), 6.84 (s, 1H), 7.21-7.50 (m, 9H), 7.85-7.86 (d, 1H, J=2.6 Hz), 7.97-8.00 (d, 2H, J=8.3 Hz), 8.22-8.25 (d, 1H, J=7.9 Hz)
MS (EI, 70 eV) m/z 525 (M⁺), 381, 330, 315, 299, 271, 231, 209, 195, 181,
165, 152, 128, 115

Step 2: 4-[2-(6-Nitro-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(6-nitro-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (93%).

MS (EI, 70 eV) m/z 511 (M⁺), 495, 366, 344, 330, 316, 302, 269, 255, 239, 228, 209, 195, 181, 165, 144, 128, 115, 91, 77, 63

Step 3: 4-[2-(6-Nitro-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(6-nitro-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (98%).

¹H NMR (300 MHz, acetone-d₆) δ 4.75 (s, 2H), 4.90 (s, 2H), 6.54-6.56 (d, 1H, J=7.6 Hz), 6.82 (s, 1H), 7.22-7.50 (m, 9H), 7.84-7.86 (d, 1H, J=4.6 Hz), 7.94-7.98 (d, 2H, J=8.4 Hz), 8.22-8.24 (d, 1H, J=7.6 Hz)

MS (LC, 70 eV) m/z 527 (M⁺¹)

Example 75: 4-[2-(4-Methyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(4-methyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 4-methyl-benzothiazol-2-ylamine as the starting material to obtain the title compound (99%).

¹H NMR (300 MHz, CDCl₃) δ 2.46 (s, 3H), 3.9 (s, 3H), 4.77 (s, 2H), 4.85 (s, 2H), 6.61-6.63 (d, 1H, J=7.5 Hz), 6.92 (s, 1H), 7.28-7.53 (m, 9H), 7.82-7.84 (d, 1H, J=8.1 Hz), 7.99-8.04 (t, 2H, J=15.3, 7.2 Hz), 8.31-8.34 (d, 1H, J=8.2 Hz)

MS (EI, 70 eV) m/z 494 (M⁺), 351, 187, 177, 165, 144, 129, 115

Step 2: 4-[2-(4-Methyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(4-methyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (99%).

MS (EI, 70 eV) m/z 480 (M⁺), 313, 302, 268, 254, 228, 195, 181, 164, 144, 128, 115, 105, 91, 78, 63

Step 3: 4-[2-(4-Methyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(4-methyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (67%).

¹H NMR (300 MHz, acetone-d₆) δ 2.44 (s, 3H), 4.78 (s, 2H), 4.85 (s, 2H), 6.62-6.64 (d, 1H, J=7.4 Hz), 6.90 (s, 1H), 7.36-7.50 (m, 9H), 7.80-7.82 (d, 1H, J=8.2 Hz), 7.88-7.92 (t, 2H, J=15.2, 7.4 Hz), 8.32-8.34 (d, 1H, J=8.2 Hz)

MS (LC, 70 eV) m/z 496 (M⁺¹)

Example 76: 4-[2-(5,6-Dimethyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(5,6-dimethyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 5,6-dimethyl-benzothiazol-2-ylamine as the starting material to obtain

the title compound (81 %).

¹H NMR (300 MHz, CDCl₃) δ 2.29 (s, 3H), 2.30 (s, 3H), 3.91 (s, 3H), 4.72 (s, 2H), 4.82 (s, 2H), 6.59-6.62 (d, 1H, J=7.5 Hz), 6.76-6.78 (d, 1H, J=8.2 Hz), 7.24-7.49 (m, 8H), 7.89-7.92 (d, 1H, J=8.2 Hz), 7.94-7.98 (dd, 3H, J=8.1, 4.6 Hz), 8.28-8.31 (d, 1H, J=8.3 Hz)

MS (EI, 70 eV) m/z 508 (M⁺), 365, 330, 315, 271, 255, 239, 228, 217, 192, 178, 164, 144, 128, 115

Step 2: 4-[2-(5,6-Dimethyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(5,6-dimethyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (97 %).

MS (EI, 70 eV) m/z 494 (M⁺), 334, 316, 301, 271, 255, 231, 218, 202, 192, 181, 164, 144, 128, 115, 91, 69, 57

Step 3: 4-[2-(5,6-Dimethyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(5,6-dimethyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (96 %).

¹H NMR (300 MHz, acetone-d₆) δ 2.28 (s, 3H), 2.30 (s, 3H), 4.74 (s, 2H), 4.84 (s, 2H), 6.57-6.60 (d, 1H, J=7.4 Hz), 6.74-6.76 (d, 1H, J=8.4 Hz), 7.26-7.40 (m, 8H), 7.80-7.82 (d, 1H, J=8.4 Hz), 7.90-7.96 (dd, 3H, J=8.2, 4.8 Hz), 8.26-8.28 (d, 1H, J=8.4 Hz)

MS (LC, 70 eV) m/z 510 (M⁺¹)

Example 77: 4-[2-Pyrrolidine-1-ylmethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-pyrrolidine-1-ylmethyl-3-(naphthalene-1-

ylloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 1-pyrrolidine as the starting material to obtain the title compound (80%).

¹H NMR (300 MHz, CDCl₃) δ 1.73 (s, 4H), 2.46 (s, 4H), 2.91 (s, 2H), 3.83 (s, 3H), 4.75 (s, 2H), 6.65-6.67 (d, 1H, J=7.5 Hz), 6.84 (s, 1H), 7.19-7.42 (m, 5H), 7.87-7.89 (d, 5H, J=8.0 Hz)

MS (EI, 70 eV) m/z 401 (M⁺), 258, 128, 115, 84, 70, 58

Step 2: 4-[2-Pyrrolidine-1-ylmethyl-3-(naphthalene-1-ylloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-pyrrolidine-1-ylmethyl-3-(naphthalene-1-ylloxymethyl)-propenyl]-benzoate to obtain the title compound (54%).

MS (EI, 70 eV) m/z 387 (M⁺), 258, 129, 113, 84, 70, 58

Step 3: 4-[2-Pyrrolidine-1-ylmethyl-3-(naphthalene-1-ylloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-pyrrolidine-1-ylmethyl-3-(naphthalene-1-ylloxymethyl)-propenyl]-benzoic acid to obtain the title compound (50%).

¹H NMR (300 MHz, acetone-d₆) δ 1.74 (s, 4H), 2.46 (s, 4H), 3.01 (s, 2H), 4.64 (s, 2H), 6.64-6.65 (d, 1H, J=7.4 Hz), 6.81 (s, 1H), 7.20-7.38 (m, 5H), 7.86-7.88 (d, 5H, J=7.6 Hz)

MS (LC, 70 eV) m/z 403 (M⁺¹)

Example 78: 4-[2-Cyclopentylaminomethyl-3-(naphthalene-1-ylloxymethyl)-propenyl]-N-hydroxy-benzamide**Step 1: Methyl 4-[2-cyclopentylaminomethyl-3-(naphthalene-1-ylloxymethyl)-propenyl]-benzoate**

The procedure of Step 5B of Example 39 was repeated except for using cyclopentylamine as the starting material to obtain the title compound (27%).

5 ¹H NMR (300 MHz, CDCl₃) δ 1.33-1.47 (m, 4H), 1.72-1.88 (m, 4H), 3.01-3.11 (m, 1H), 3.44 (s, 2H), 3.84 (s, 3H), 4.85 (s, 1H), 5.07 (s, 1H), 6.51 (s, 1H), 6.64-6.66 (d, 1H, J=7.2 Hz), 7.19-7.24 (m, 5H), 7.87-7.92 (m, 5H)
MS (EI, 70 eV) m/z 415 (M⁺), 372, 258, 126, 115, 84, 69, 57

10 **Step 2: 4-[2-Cyclopentylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid**

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-cyclopentylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (58%).

15 MS (EI, 70 eV) m/z 401 (M⁺), 370, 258, 127, 115, 84, 69, 57

Step 3: 4-[2-Cyclopentylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

20 The procedure of Step 7 of Example 39 was repeated except for using 4-[2-cyclopentylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (93%).

25 ¹H NMR (300 MHz, acetone-d₆) δ 1.34-1.44 (m, 4H), 1.74-1.86 (m, 4H), 3.06-3.12 (m, 1H), 3.44 (s, 2H), 3.87 (s, 3H), 4.84 (s, 1H), 5.06 (s, 1H), 6.52 (s, 1H), 6.64-6.66 (d, 1H, J=7.4 Hz), 7.20-7.23 (m, 5H), 7.86-7.94 (m, 5H)
MS (LC, 70 eV) m/z 417 (M⁺)

30 **Example 79: 4-[2-(1,3-Dioxo-1,3-dihydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide**

Step 1: Methyl 4-[2-(1,3-dioxo-1,3-dihydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for

using 1,3-dioxo-1,3-dihydro-isoindole as the starting material to obtain the title compound (99%).

¹H NMR (300 MHz, CDCl₃) δ 3.82 (s, 3H), 4.14 (s, 2H), 4.30 (s, 2H), 6.38 (s, 1H), 7.17-7.20 (dd, 4H, J=3.84, 1.74 Hz), 7.60-7.69 (m, 5H), 7.77-7.89 (m, 5H)

MS (EI, 70 eV) m/z 477 (M⁺), 321, 304, 232, 182, 176, 160, 154, 128, 115, 104, 91, 76

Step 2: 4-[2-(1,3-Dioxo-1,3-dihydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(1,3-dioxo-1,3-dihydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (40%).

MS (EI, 70 eV) m/z 463 (M⁺), 321, 303, 275, 231, 186, 174, 160, 148, 129, 115, 104, 91, 77

Step 3: 4-[2-(1,3-Dioxo-1,3-dihydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(1,3-dioxo-1,3-dihydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (31%).

¹H NMR (300 MHz, acetone-d₆) δ 4.15 (s, 2H), 4.30 (s, 2H), 6.34 (s, 1H), 7.12-7.18 (d, 4H, J=1.72 Hz), 7.62-7.70 (m, 5H), 7.74-7.80 (m, 5H)

MS (LC, 70 eV) m/z 479 (M⁺)

Example 80: 4-[2-Dimethylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-dimethylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for

using dimethylamine as the starting material to obtain the title compound (68%).

¹H NMR (300 MHz, CDCl₃) δ 2.11 (s, 3H), 2.23 (s, 3H), 2.66 (s, 1H), 2.90 (s, 1H), 3.83 (s, 3H), 6.37 (s, 1H), 7.19-7.33 (m, 6H), 7.86-7.93 (m, 5H)
MS (EI, 70 eV) m/z 375 (M⁺), 232, 189, 144, 129, 115, 58

Step 2: 4-[2-Dimethylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-dimethylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (99%).

MS (EI, 70 eV) m/z 362 (M⁺), 219, 204, 144, 115, 91, 82, 58

Step 3: 4-[2-Dimethylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-dimethylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (24%).

¹H NMR (300 MHz, acetone-d₆) δ 2.16 (s, 3H), 2.22 (s, 3H), 2.72 (s, 1H), 2.82 (s, 1H), 6.34 (s, 1H), 7.20-7.34 (m, 6H), 7.86-7.92 (m, 5H)
MS (LC, 70 eV) m/z 377 (M⁺)

Example 81: 4-[2-Azidomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-azidomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using azide as the starting material to obtain the title compound (97%).

¹H NMR (300 MHz, CDCl₃) δ 2.03 (s, 2H), 3.88 (s, 3H), 4.54 (s, 2H), 6.32 (s,

1H), 7.19-7.30 (m, 6H), 7.68-7.71 (dd, 2H, J=8.5, 3.0 Hz), 7.79-7.82 (dd, 2H, J=5.4, 3.0 Hz), 7.90-7.96 (q, 1H, J=10.0, 8.1 Hz)

MS (EI, 70 eV) m/z 373 (M⁺), 315, 289, 274, 230, 194, 180, 164, 115, 101, 74

5

Step 2: 4-[2-Azidomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-azidomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (47%).

10

MS (EI, 70 eV) m/z 359 (M⁺), 314, 289, 220, 195, 180, 164, 115, 101, 74

Step 3: 4-[2-Azidomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

15

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-azidomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (69%).

20 ¹H NMR (300 MHz, acetone-d₆) δ 2.02 (s, 2H), 3.88 (s, 3H), 4.54 (s, 2H), 6.34 (s, 1H), 7.20-7.30 (m, 6H), 7.68-7.70 (dd, 2H, J=8.4, 3.0 Hz), 7.80-7.82 (dd, 2H, J=8.2, 3.0 Hz), 7.89-7.94 (q, 1H, J=10.2, 8.2 Hz)
MS (LC, 70 eV) m/z 375 (M⁺¹)

25 **Example 82: 4-[2-(2,5-Dioxo-2,5-dihydro-pyrrole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide**

Step 1: Methyl 4-[2-(2,5-dioxo-2,5-dihydro-pyrrole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

30 The procedure of Step 5B of Example 39 was repeated except for using 2,5-dioxo-2,5-dihydro-pyrrole as the starting material to obtain the title compound (42%).

¹H NMR (300 MHz, CDCl₃) δ 3.84 (s, 3H), 4.14 (s, 2H), 4.26 (s, 2H), 6.30 (s,

1H), 6.60 (s, 1H), 6.62-6.63 (d, 2H, J=1.4 Hz), 6.69 (s, 2H), 7.16-7.22 (t, 2H, J=17.5, 9.3 Hz), 7.86-7.95 (q, 2H, J=18.0, 9.8 Hz)

MS (EI, 70 eV) m/z 427 (M⁺), 366, 315, 270, 187, 161, 154, 119, 114, 57

5 **Step 2: 4-[2-(2,5-Dioxo-2,5-dihydro-pyrrole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid**

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(2,5-dioxo-2,5-dihydro-pyrrole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (66%).

10

MS (EI, 70 eV) m/z 413 (M⁺), 315, 271, 184, 154, 119, 115, 59

Step 3: 4-[2-(2,5-Dioxo-2,5-dihydro-pyrrole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

15 The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(2,5-dioxo-2,5-dihydro-pyrrole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (87%).

20 ¹H NMR (300 MHz, acetone-d₆) δ 4.14 (s, 2H), 4.24 (s, 2H), 6.31 (s, 1H), 6.68 (s, 1H), 6.70-6.72 (d, 2H, J=3.4 Hz), 6.70 (s, 2H), 7.20-7.24 (d, 2H, J=8.4 Hz), 7.84-7.89 (dd, 2H, J=16.0, 8.6 Hz)

MS (LC, 70 eV) m/z 429 (M⁺)

25 **Example 83: 4-[2-(1,3-Dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide**

Step 1: Methyl 4-[2-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

30 The procedure of Step 5B of Example 39 was repeated except for using 1,3-dioxo-1,3,3a,4,7,7a-hexahydro-2-isoindole as the starting material to obtain the title compound (84%).

¹H NMR (300 MHz, CDCl₃) δ 2.13-2.16 (t, 2H, J=7.5, 2.7 Hz), 2.18-2.21 (t,

2H, J=7.5, 4.8 Hz), 2.55-2.64 (m, 2H), 3.82 (s, 3H), 4.09 (s, 2H), 4.42 (s, 1H), 4.67 (s, 1H), 5.81-5.83 (t, 1H, J=6.3, 3.3 Hz), 5.86-5.88 (t, 1H, J=17.4, 8.1 Hz), 7.86-7.91 (t, 5H, J=15.0, 8.4 Hz)

MS (EI, 70 eV) m/z 481 (M⁺), 450, 338, 317, 306, 187, 155, 143, 129, 115, 79

Step 2: 4-[2-(1,3-Dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (83 %).

MS (EI, 70 eV) m/z 467 (M⁺), 450, 325, 315, 303, 271, 255, 231, 202, 190, 174, 162, 152, 129, 115, 91, 79

Step 3: 4-[2-(1,3-Dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (24 %).

¹H NMR (300 MHz, acetone-d₆) δ 2.14-2.16 (t, 2H, J=7.4, 2.7 Hz), 2.18-2.20 (t, 2H, J=7.4, 2.8 Hz), 2.55-2.65 (m, 2H), 4.09 (s, 2H), 4.42 (s, 1H), 4.67 (s, 1H), 5.82-5.85 (t, 1H, J=6.3, 3.3 Hz), 5.88-5.90 (t, 1H, J=17.4, 8.1 Hz), 7.88-7.91 (t, 5H, J=15.0, 8.4 Hz)

MS (LC, 70 eV) m/z 483 (M⁺)

Example 84: 4-[2-(2-Oxo-pyrrolidine-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(2-oxo-pyrrolidine-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 2-oxo-pyrrolidine as the starting material to obtain the title compound (10%).

¹H NMR (300 MHz, CDCl₃) δ 1.80-1.87 (m, 2H), 2.08-2.09 (t, 2H, J=3.6, 1.5 Hz), 2.55 (s, 2H), 3.83 (s, 3H), 4.13 (s, 2H), 4.81 (s, 2H), 6.49 (s, 1H), 6.63-6.65 (d, 1H, J=7.5 Hz), 7.19-7.42 (m, 6H), 7.90-7.93 (dd, 4H, J=8.4, 1.8 Hz)
MS (EI, 70 eV) m/z 415 (M⁺), 348, 317, 245, 223, 205, 187, 173, 155, 144, 129, 115, 105, 91, 77, 59

Step 2: 4-[2-(2-Oxo-pyrrolidine-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(2-oxo-pyrrolidine-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (73 %).

MS (EI, 70 eV) m/z 401 (M⁺), 317, 244, 205, 186, 174, 155, 144, 115, 105, 92, 77, 59

Step 3: 4-[2-(2-Oxo-pyrrolidine-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(2-oxo-pyrrolidine-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (78 %).

¹H NMR (300 MHz, acetone-d₆) δ 1.82-1.86 (m, 2H), 2.06-2.08 (t, 2H, J=7.6, 3.4 Hz), 2.54 (s, 2H), 4.15 (s, 2H), 4.81 (s, 2H), 6.48 (s, 1H), 6.63-6.65 (d, 1H, J=7.5 Hz), 7.22-7.44 (m, 6H), 7.88-7.90 (dd, 4H, J=8.6, 3.4 Hz)
MS (LC, 70 eV) m/z 417 (M⁺)

Example 85: 4-[2-(2-Oxo-2,3-dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(2-oxo-2,3-dihydro-indole-1-ylmethyl)-3-

(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 2-oxo-2,3-dihydro-indole as the starting material to obtain the title compound (81 %).

¹H NMR (300 MHz, CDCl₃) δ 3.47 (s, 2H), 3.79 (s, 3H), 4.00 (s, 2H), 4.25 (s, 2H), 6.51 (s, 1H), 6.78-6.81 (d, 1H, J=7.8 Hz), 6.92-6.97 (t, 2H, J=14.4, 7.5 Hz), 7.12-7.19 (m, 8H), 7.71-7.90 (m, 4H)
MS (EI, 70 eV) m/z 463 (M⁺), 360, 320, 288, 260, 189, 158, 145, 130, 115, 91, 59

Step 2: 4-[2-(2-Oxo-2,3-dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(2-oxo-2,3-dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (99 %).

MS (EI, 70 eV) m/z 449 (M⁺), 359, 324, 288, 259, 189, 156, 144, 130, 115, 91

Step 3: 4-[2-(2-Oxo-2,3-dihydro -indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(2-oxo-2,3-Dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (86 %).

¹H NMR (300 MHz, acetone-d₆) δ 3.48 (s, 2H), 4.04 (s, 2H), 4.45 (s, 2H), 6.52 (s, 1H), 6.78-6.80 (d, 1H, J=7.6 Hz), 6.90-6.93 (t, 2H, J=14.0, 7.4 Hz), 7.15-7.19 (m, 8H), 7.70-7.88 (m, 4H)
MS (LC, 70 eV) m/z 465 (M⁺¹)

Example 86: 4-[2-(2,3-Dioxo-2,3-dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(2,3-dioxo-2,3-dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 2,3-dioxo-2,3-dihydro-indole as the starting material to obtain the title compound (99%).

¹H NMR (300 MHz, CDCl₃) δ 3.44 (s, 2H), 3.89 (s, 3H), 4.45 (s, 2H), 6.54 (s, 1H), 6.64-6.65 (d, 1H, J=4.2 Hz), 7.19-7.38 (m, 8H), 7.90-7.98 (m, 6H)

MS (EI, 70 eV) m/z 477 (M⁺), 364, 316, 270, 238, 220, 192, 177, 164, 144, 128, 115

Step 2: 4-[2-(2,3-Dioxo-2,3-dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(2,3-dioxo-2,3-dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (80%).

MS (EI, 70 eV) m/z 463 (M⁺), 310, 271, 236, 220, 176, 164, 144, 127, 115

Step 3: 4-[2-(2,3-Dioxo-2,3-dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(2,3-dioxo-2,3-dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (93%).

¹H NMR (300 MHz, acetone-d₆) δ 3.44 (s, 2H), 4.44 (s, 2H), 6.52 (s, 1H), 6.64-6.66 (d, 1H, J=4.2 Hz), 7.20-7.34 (m, 8H), 7.88-7.94 (m, 6H)

MS (LC, 70 eV) m/z 479 (M⁺)

Example 87: 4-[2-(Pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-(Pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl] benzoate

The procedure of Step 5A of Example 39 was repeated except for using pyridine-3-ylamine as the starting material to obtain the title compound (85%).

¹H NMR (200 MHz, CDCl₃) δ 3.89 (s, 3H, OCH₃), 4.22 (s, 3H, NH + OCH₂), 4.86 (s, 2H, NCH₂), 6.68 (d, J=7.2 Hz, 1H, ArH), 6.95 (m, 2H, ArH), 7.08 (m, 1H, ArH), 7.31 (m, 4H, ArH), 7.52 (m, 3H, ArH), 7.83 (m, 1H, ArH), 7.98 (d, J=8.2 Hz, 2H, ArH), 8.10 (s, 1H, CH), 8.26 (m, 1H, ArH)

Step 2: 4-[2-(Pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl] benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl] benzoate to obtain the title compound (86%).

Step 3: 4-[2-(Pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl] benzoic acid to obtain the title compound (28%).

Example 88: 4-[2-(2-Chloropyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-(2-chloropyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5A of Example 39 was repeated except for using 2-chloropyridine-3-ylamine as the starting material to obtain the title compound (75%).

¹H NMR (200 MHz, CDCl₃) δ 3.90 (s, 3H, OCH₃), 4.26 (d, J=7.6 Hz, 2H, NCH₂), 4.87 (s, 2H, OCH₂), 6.69 (d, J=7.6 Hz, 1H, ArH), 6.91 (s, 1H, CH), 7.02 (m, 3H, ArH), 7.34 (d, J=8.4 Hz, 2H, ArH), 7.49 (m, 3H, ArH), 7.75 (m, 1H, ArH), 7.83 (m, 1H, ArH), 7.80 (d, J=8.4 Hz, 2H, ArH), 8.28 (m, 1H,

ArH)

Step 2: 4-[2-(2-Chloropyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

5 The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(2-chloropyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (99%).

10 **Step 3: 4-[2-(2-Chloropyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide**

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(2-chloropyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (73%).

15 **Example 89: 4-[2-(3-Methoxyphenylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide**

Step 1: Methyl 4-[2-(3-methoxyphenylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]benzoate

20 The procedure of Step 5B of Example 39 was repeated except for using 3-methoxyphenylamine as the starting material to obtain the title compound (68%).

¹H NMR (200 MHz, CDCl₃) δ 3.72 (s, 3H, OCH₃), 3.88 (s, 3H, OCH₃), 4.19 (s, 3H, NH + OCH₂), 4.88 (s, 2H, NCH₂), 6.27 (m, 3H, ArH), 6.68 (d, J=7.6 Hz, 1H, ArH), 6.95 (s, 1H, CH), 7.08 (t, J=8.0 Hz, 1H, ArH), 7.25 (d, J=4.0 Hz, 1H, ArH), 7.33 (d, J=8.4 Hz, 2H, ArH), 7.53 (m, 3H, ArH), 7.82 (m, 1H, ArH), 7.97 (d, J=8.4 Hz, 2H, ArH), 8.29 (m, 1H, ArH)
MS (EI, 70 eV) m/z 453 (M⁺), 310, 136, 115, 108, 93, 77, 59, 41.

30 **Step 2: 4-[2-(3-Methoxyphenylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]benzoic acid**

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[2-(3-methoxyphenylaminomethyl)-3-(naphthalene-1-yloxymethyl)-

propenyl]benzoate to obtain the title compound (99%).

Step 3: 4-[2-(3-Methoxyphenylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(3-methoxyphenylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]benzoic acid to obtain the title compound (32%).

¹H NMR (300 MHz, acetone-d₆) δ 3.67 (s, 3H, OCH₃), 4.21 (s, 2H, OCH₂), 4.94 (s, 2H, NCH₂), 5.59 (brs, 1H, NH), 6.19 (d, J=7.5 Hz, 1H, ArH), 6.33 (s, 1H, CH), 6.34 (d, J=7.5 Hz, 1H, ArH), 6.88 (d, J=7.5 Hz, 1H, ArH), 6.99 (m, 2H, ArH), 7.48 (m, 6H, ArH), 7.77 (d, J=8.1 Hz, 1H, ArH), 7.85 (d, J=7.5 Hz, 1H, ArH), 7.97 (s, 1H, ArH), 8.29 (d, J=7.5 Hz, 1H, ArH), 10.85 (brs, 1H, NH)

Example 90: 4-[2-(Biphenyl-4-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-(biphenyl-4-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5A of Example 39 was repeated except for using biphenyl-4-ylamine as the starting material to obtain the title compound (82%).

¹H NMR (200 MHz, CDCl₃) δ 3.88 (s, 3H, OCH₃), 4.23 (s, 3H, NH + OCH₂), 4.86 (s, 2H, NCH₂), 6.71 (d, J=2.2 Hz, 1H, ArH), 6.74 (d, J=8.0 Hz, 2H, ArH), 6.97 (s, 1H, CH), 7.43 (m, 13H, ArH), 7.82 (m, 1H, ArH), 7.97 (d, J=8.0 Hz, 2H, ArH), 8.30 (m, 1H, ArH)

MS (EI, 70 eV) m/z 499 (M⁺), 330, 315, 271, 182, 169, 152, 151, 128, 115, 77, 59, 40

Step 2: 4-[2-(Biphenyl-4-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using

methyl 4-[2-(biphenyl-4-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (96%).

Step 3: 4-[2-(Biphenyl-4-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(biphenyl-4-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (39%).

¹H NMR (300 MHz, acetone-d₆) δ 4.27 (s, 2H, OCH₂), 5.00 (s, 2H, NCH₂), 6.10 (brs, 1H, NH), 6.86 (d, J=8.7 Hz, 1H, ArH), 7.00 (d, J=8.1 Hz, 1H, ArH), 7.10 (s, 1H, CH), 7.47 (m, 15H, ArH), 7.82 (d, J=8.1 Hz, 1H, ArH), 7.92 (m, 1H, ArH), 8.29 (m, 1H, ArH), 11.14 (brs, 1H, NH)

Example 91: 4-[2-(Indan-2-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl [2-(indan-2-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 2-aminoindan as the starting material to obtain the title compound (52%).

¹H NMR (200 MHz, CDCl₃), σ 3.00 (d, 4H, J=8.0Hz, 2CH₂), 3.55 (s, 2H, CH₂), 3.91 (s, 3H, OCH₃), 3.97 (m, 1H, CH), 4.60 (s, 2H, CH₂), 6.25 (d, 1H J=7.6Hz, ArH), 6.90 (s, 1H, CH), 7.09-7.28 (m, 7H, ArH), 7.44 (m, 3H, ArH), 7.80 (d, 1H J=8.0Hz, ArH), 7.88 (d, 2H J=8.4Hz, ArH), 8.11 (d, 1H J=8.0Hz, ArH)

Step 2: 4-[2-(Indan-2-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl [2-(indan-2-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl]-benzoate to obtain the title compound (99%).

¹H NMR (200 MHz, CDCl₃), σ 2.98 (d, 4H, J=8.0Hz, 2CH₂), 3.62 (s, 2H, CH₂), 3.96 (m, 1H, CH), 4.57 (s, 2H, CH₂), 6.24 (d, 1H J=7.6Hz, ArH), 6.90 (s, 1H, CH), 7.07-7.25 (m, 7H, ArH), 7.44 (m, 3H, ArH), 7.81 (d, 1H J=8.0Hz, ArH), 7.86 (d, 2H J=8.4Hz, ArH), 8.09 (d, 1H J=8.0Hz, ArH)

Step 3: 4-[2-(Indan-2-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(indan-2-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl]-benzoic acid to obtain the title compound (45%).

¹H NMR (200 MHz, CDCl₃), σ 3.00 (d, 4H, J=8.0Hz, 2CH₂), 3.64 (s, 2H, CH₂), 3.97 (m, 1H, CH), 4.58 (s, 2H, CH₂), 6.25 (d, 1H J=7.6Hz, ArH), 6.90 (s, 1H, CH), 7.08-7.25 (m, 7H, ArH), 7.47 (m, 3H, ArH), 7.81 (d, 1H J=8.0Hz, ArH), 7.85 (d, 2H J=8.4Hz, ArH), 8.11 (d, 1H J=8.0Hz, ArH)

Example 92: 4-[2-(4-Pyridine-2-yl-piperazine-1-ylmethyl)-3-(naphthalene-1-yloxy)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[2-(4-pyridine-2-yl-piperazine-1-ylmethyl)-3-(naphthalene-1-yloxy)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 4-pyridine-2-yl-piperazine as the starting material to obtain the title compound (71%).

¹H NMR (200 MHz, CDCl₃), σ 2.67 (m, 4H, 2CH₂), 3.43 (s, 2H, CH₂), 3.91 (s, 3H, OCH₃), 3.91 (m, 4H, 2CH₂), 4.90 (s, 2H, CH₂), 6.48 (m, 1H, ArH), 6.79 (d, 1H J=6.5Hz, ArH), 6.98 (s, 1H, CH), 7.31-7.56 (m, 7H, ArH), 7.84 (m, 1H, ArH), 8.00 (d, 2H J=8.5Hz, ArH), 8.30 (m, 3H, ArH)

Step 2: 4-[2-(4-Pyridine-2-yl-piperazine-1-ylmethyl)-3-(naphthalene-1-yloxy)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using

methyl 4-[3-(naphthalene-1-yloxy)-2-(4-pyridine-2-yl-piperazine-1-ylmethyl)-propenyl]-benzoate to obtain the title compound (99%).

¹H NMR (200 MHz, CDCl₃), σ 2.66 (m, 4H, 2CH₂), 3.43 (s, 2H, CH₂), 3.91 (m, 4H, 2CH₂), 4.88 (s, 2H, CH₂), 6.47 (m, 1H, ArH), 6.77 (d, 1H J=6.5Hz, ArH), 6.99 (s, 1H, CH), 7.31-7.55 (m, 7H, ArH), 7.84 (m, 1H, ArH), 7.98 (d, 2H J=8.5Hz, ArH), 8.29 (m, 3H, ArH)

Step 3: 4-[2-(4-Pyridine-2-yl-piperazine-1-ylmethyl)-3-(naphthalene-1-yloxy)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[3-(naphthalene-1-yloxy)-2-(4-pyridine-2-yl-piperazine-1-ylmethyl)-propenyl]-benzoic acid to obtain the title compound (27%).

¹H NMR (200 MHz, CDCl₃), σ 2.69 (m, 4H, 2CH₂), 3.44 (s, 2H, CH₂), 3.91 (m, 4H, 2CH₂), 4.91 (s, 2H, CH₂), 6.47 (m, 1H, ArH), 6.77 (d, 1H J=6.5Hz, ArH), 6.99 (s, 1H, CH), 7.31-7.55 (m, 7H, ArH), 7.84 (m, 1H, ArH), 7.98 (d, 2H J=8.5Hz, ArH), 8.31 (m, 3H, ArH)

Example 93: 4-{2-[(2-Phenoxy-ethylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxy-benzamide

Step 1: Methyl 4-{2-[(2-phenoxy-ethylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 2-phenoxy-ethylamine as the starting material to obtain the title compound (72%).

¹H NMR (200 MHz, CDCl₃), σ 3.05 (m, 2H, CH₂), 3.74 (s, 2H, CH₂), 3.91 (s, 2H, CH₂), 3.95 (s, 3H, OCH₃), 4.06 (m, 2H, CH₂), 6.80 (d, 2H J=8.1Hz, ArH), 6.96 (m, 3H, ArH), 7.01-7.51 (m, 8H, ArH), 7.81 (m, 1H, ArH), 8.01 (d, 2H J=8.1Hz, ArH), 8.34 (d 2H J=9.0Hz, ArH)

Step 2: 4-{2-[(2-Phenoxy-ethylamino)-methyl]-3-(naphthalene-1-yloxy)-

propenyl}-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-{2-[(2-phenoxy-ethylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoate to obtain the title compound (99%).

¹H NMR (200 MHz, CDCl₃), σ 3.08 (m, 2H, CH₂), 3.82 (s, 2H, CH₂), 3.91 (s, 2H, CH₂), 4.07 (m, 2H, CH₂), 6.83 (d, 2H J=8.1Hz, ArH), 6.96 (m, 3H, ArH), 7.01-7.51 (m, 8H, ArH), 7.87 (m, 1H, ArH), 8.01 (d, 2H J=8.1Hz, ArH), 8.37 (d 2H J=9.0Hz, ArH)

Step 3: 4-{2-[(2-Phenoxy-ethylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-{2-[(2-phenoxy-ethylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoic acid to obtain the title compound (43%).

¹H NMR (200 MHz, CDCl₃), σ 3.09 (m, 2H, CH₂), 3.83 (s, 2H, CH₂), 3.91 (s, 2H, CH₂), 4.11 (m, 2H, CH₂), 6.79 (d, 2H J=8.1Hz, ArH), 6.96 (m, 3H, ArH), 7.01-7.51 (m, 8H, ArH), 7.88 (m, 1H, ArH), 8.03 (d, 2H J=8.1Hz, ArH), 8.35 (d 2H J=9.0Hz, ArH)

Example 94: 4-{2-[(Benzyl-methyl-amino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxy-benzamide**Step 1: Methyl 4-{2-[(benzyl-methyl-amino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoate**

The procedure of Step 5B of Example 39 was repeated except for using benzylmethylamine as the starting material to obtain the title compound (95%).

¹H NMR (200 MHz, CDCl₃), σ 2.27 (s, 3H, CH₃), 3.03 (s, 2H, CH₂), 3.62 (s, 2H, CH₂), 3.88 (s, 3H, OCH₃), 4.46 (s, 2H, CH₂), 6.54 (s, 2H, CH), 6.64 (m, 1H, ArH), 7.06 (m, 3H, ArH), 7.14 (m, 2H, ArH), 7.23 (m, 2H, ArH), 7.36 (m, 2H, ArH), 7.41 (d, 2H J=8.1Hz, ArH), 7.66 (m, 1H, ArH), 7.92 (d, 2H

J=8.1Hz, ArH), 8.17 (m, 1H, ArH)

Step 2: 4-{2-[(Benzyl-methyl-amino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoic acid

5 The procedure of Step 6 of Example 39 was repeated except for using methyl 4-{2-[(benzyl-methyl-amino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoate to obtain the title compound (99%).

¹H NMR (200 MHz, CDCl₃), σ 2.29 (s, 3H, CH₃), 3.06 (s, 2H, CH₂), 3.64 (s, 10 2H, CH₂), 4.47 (s, 2H, CH₂), 6.54 (s, 2H, CH), 6.67 (m, 1H, ArH), 7.09 (m, 3H, ArH), 7.14 (m, 2H, ArH), 7.23 (m, 2H, ArH), 7.36 (m, 2H, ArH), 7.41 (d, 2H J=8.1Hz, ArH), 7.66 (m, 1H, ArH), 7.92 (d, 2H J=8.1Hz, ArH), 8.14 (m, 1H, ArH)

15 **Step 3: 4-{2-[(Benzyl-methyl-amino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxy-benzamide**

The procedure of Step 7 of Example 39 was repeated except for using 4-2-[(benzyl-methyl-amino)-methyl]-3-(naphthalene-1-yloxy)-propenyl-benzoic acid to obtain the title compound (55%).

20 ¹H NMR (200 MHz, CDCl₃), σ 2.31 (s, 3H, CH₃), 3.09 (s, 2H, CH₂), 3.67 (s, 2H, CH₂), 4.47 (s, 2H, CH₂), 6.54 (s, 2H, CH), 6.67 (m, 1H, ArH), 7.09 (m, 3H, ArH), 7.24 (m, 3H, ArH), 7.36 (m, 2H, ArH), 7.41 (d, 2H J=8.1Hz, ArH), 7.66 (m, 1H, ArH), 7.89 (d, 2H J=8.1Hz, ArH), 8.14 (m, 1H, ArH)

25 **Example 95: 4-[3-(6-Methoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide**

Step 1: Methyl 4-[3-(6-methoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

30 The procedure of Step 5A of Example 39 was repeated except for using (6-methoxy-3-aminoquinoline) as the starting material to obtain the title compound (62%).

¹H NMR (200 MHz, CDCl₃), σ 3.83 (s, 3H, OCH₃), 3.94 (s, 3H, OCH₃), 4.30 (d, J=5.2 Hz, 1H, CH₂), 4.50 (t, J=6.0 Hz, 1H, NH), 4.91 (s, 2H, CH₂), 6.66 (s, 1H, CH), 6.07 (m, 1H, ArH), 7.03 (m, 2H, ArH), 7.27 (m, 1H, ArH), 7.35 (m, 3H, ArH), 7.49 (m, 3H, ArH), 7.81 (m, 2H, ArH), 7.99 (d, J=8.2 Hz, 2H, ArH), 8.34 (d, J=5.6 Hz, 2H, ArH)
MS (EI, 70 eV) m/z 504 (M⁺), 361, 214, 188, 174

Step 2: 4-[3-(6-Methoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[3-(6-methoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (83%).

MS (EI, 70 eV) m/z 490 (M⁺), 439, 315, 302, 278, 213, 188, 175, 159, 144, 130, 115, 101, 88, 77, 64, 44

Step 3: 4-[3-(6-Methoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[3-(6-methoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (38%).

MS (LC, 70 eV) m/z 506 (M⁺), 491, 363

Example 96: 4-[3-(8-Bromoquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[3-(8-bromoquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5A of Example 39 was repeated except for using 8-bromo-3-aminoquinoline as the starting material to obtain the title compound (57%).

¹H NMR (200 MHz, CDCl₃), σ 3.87 (s, 3H, OCH₃), 4.37 (brs, 2H, CH₂), 4.90

(s, 2H, CH₂), 6.67 (d, J=7.0 Hz, 1H, ArH), 6.98 (s, 1H, CH), 7.06 (d, J=2.2 Hz, 1H, ArH), 7.40 (m, 8H, ArH), 7.70 (dd, J=1.2, 7.2 Hz, 1H, ArH), 7.83 (m, 1H, ArH), 7.99 (d, J=6.6 Hz, 2H, ArH), 8.29 (dd, J=2.6, 6.8 Hz, 1H, ArH), 8.58 (d, J=2.6 Hz, 1H, ArH)

5 MS (EI, 70 eV) m/z 554 (M⁺), 329, 262, 236, 222

Step 2: 4-[3-(8-Bromoquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

10 The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[3-(8-bromoquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (87%).

Step 3: 4-[3-(8-Bromoquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

15 The procedure of Step 7 of Example 39 was repeated except for using 4-[3-(8-bromoquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (25%).

MS (LC, 70 eV) m/z 556 (M⁺), 541, 395

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Example 97: 4-[3-(5,6-Dimethoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

Step 1: Methyl 4-[3-(5,6-dimethoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

25 The procedure of Step 5B of Example 39 was repeated except for using 5,6-dimethoxy-3-aminoquinoline as the starting material to obtain the title compound (49%).

30 ¹H NMR (200 MHz, CDCl₃), σ 3.89 (s, 6H, OCH₃X₂), 3.96 (s, 3H, OCH₃), 4.28 (d, J=5.4 Hz, 2H, CH₂), 4.36 (d, J=5.4 Hz, 1H, NH), 4.90 (s, 2H, CH₂), 6.68 (t, J=3.6 Hz, 2H, ArH), 6.99 (s, 1H, CH), 7.05 (d, J=2.6 Hz, 1H, ArH), 7.32 (m, 4H, ArH), 7.48 (m, 3H, ArH), 7.83 (m, 1H, ArH), 8.16 (d, J=8.4 Hz, 2H, ArH), 8.30 (d, J=2.6 Hz, 1H, ArH)

Step 2: 4-[3-(5,6-Dimethoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[3-(5,6-dimethoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (85%).

Step 3: 4-[3-(5,6-Dimethoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[3-(5,6-dimethoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (60%).

MS (LC, 70 eV) m/z 536 (M^{+1}), 521, 393, 205

Example 98: 4-{2-[(3,4-Dimethoxy-phenylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxybenzamide

Step 1: Methyl 4-{2-[(3,4-dimethoxy-phenylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 3,4-dimethoxy-phenylamine as the starting material to obtain the title compound (83%).

^1H NMR (200 MHz, CDCl_3) δ 3.76 (s, 3H, OCH_3), 3.82 (s, 3H, OCH_3), 3.91 (s, 3H, OCH_3), 4.39 (s, 2H, CH_2), 4.87 (s, 2H, CH_2), 6.46 (m, 2H, ArH), 6.98 (s, 1H, CH), 7.45-7.54 (m, 6H, ArH), 7.85 (m, 1H, ArH), 8.01 (m, 2H, ArH), 8.32 (m, 1H, ArH)

Step 2: 4-{2-[(3,4-Dimethoxy-phenylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoic acid

The procedure of Step 6 Example 39 was repeated except for using methyl 4-{2-[(3,4-dimethoxy-phenylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoate to obtain the title compound (99%).

¹H NMR (200 MHz, CDCl₃) δ 3.68 (s, 3H, OCH₃), 3.79 (s, 3H, OCH₃), 4.37 (s, 2H, CH₂), 5.01 (s, 2H, CH₂), 6.46 (m, 2H, ArH), 7.52 (m, 6H, ArH), 7.86 (s, 1H, CH), 7.98 (m, 1H, ArH), 8.01 (m, 2H, ArH), 8.24 (m, 1H, ArH)

Step 3: 4-{2-[(3,4-Dimethoxy-phenylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-2-[(3,4-dimethoxy-phenylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl-benzoic acid to obtain the title compound (67%).

¹H NMR (200 MHz, CDCl₃) δ 3.75 (s, 3H, OCH₃), 3.77 (s, 3H, OCH₃), 4.28 (s, 2H, CH₂), 5.22 (s, 2H, CH₂), 6.88 (d, 1H J=8.9Hz, ArH), 7.00 (m, 1H, ArH), 7.25-7.53 (m, 6H, ArH), 7.65 (d, 2H J=8.1Hz, ArH), 7.82 (s, 1H, CH), 8.03 (d, 2H J=8.1Hz, ArH), 8.20 (m, 1H, ArH), 9.49 (m, 1H, NH)

Example 99: 4-{2-[(7-Morpholine-4-ynaphthalene-2-ylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxybenzamide

Step 1: Methyl 4-{2-[(7-morpholine-4-ynaphthalene-2-ylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 7-morpholine-4-ynaphthalene-2-ylamine as the starting material to obtain the title compound (28%).

¹H NMR (200 MHz, CDCl₃) δ 8.46 (d, J=2.8 Hz, 1H), 8.34 (d, J=5.8 Hz, 1H), 8.01 (d, J=8.0 Hz, 2H), 8.89 (d, J=8.2 Hz, 1H), 7.83 (d, J=5.4 Hz, 1H), 7.26-7.57 (m, 8H), 7.07 (d, J=2.6 Hz, 1H), 7.00 (s, 1H), 6.69 (d, J=7.4 Hz, 1H), 4.90 (s, 2H), 4.77 (brs, 1H), 3.30 (d, J=5.2 Hz, 2H), 3.89 (s, 3H), 3.72 (t, J=2.4 Hz, 4H), 3.58 (s, 2H), 2.47 (t, J=2.4 Hz, 4H)

Step 2: 4-{2-[(7-Morpholine-4-ynaphthalene-2-ylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoic acid

The procedure of Step 6 Example 39 was repeated except for using

methyl 4-{2-[(7-morpholine-4-yl)naphthalene-2-ylamino]-methyl}-3-(naphthalene-1-yloxy)-propenyl}-benzoate to obtain the title compound (86%).

¹H NMR (200 MHz, CDCl₃) δ 8.42 (d, J=2.8 Hz, 1H), 8.17 (d, J=8.2 Hz, 1H), 7.93 (d, J=8.0 Hz, 2H), 7.81 (d, J=8.4 Hz, 1H), 7.74 (d, J=8.4 Hz, 1H), 7.23-7.51 (m, 8H), 7.08 (d, J=2.4 Hz, 1H), 7.02 (s, 1H), 6.72 (d, J=7.8 Hz, 1H), 4.93 (s, 2H), 4.28 (s, 2H), 3.70 (t, J=4.4 Hz, 4H), 3.67 (s, 2H), 2.56 (t, J=4.4 Hz, 4H)

Step 3: 4-{2-[(7-Morpholine-4-yl)naphthalene-2-ylamino]-methyl}-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-2-[(7-morpholine-4-yl)naphthalene-2-ylamino]-methyl}-3-(naphthalene-1-yloxy)-propenyl-benzoic acid to obtain the title compound (76%).

¹H NMR (200 MHz, DMSO-d₆) δ 11.16 (s, 1H), 9.01 (brs, 1H), 8.49 (s, 1H), 8.18 (d, J=7.8 Hz, 1H), 7.88 (d, J=9.0 Hz, 2H), 7.24-7.57 (m, 9H), 6.81-7.02 (m, 4H), 4.91 (s, 2H), 4.20 (s, 2H), 3.55 (brs, 4H), 3.41 (s, 2H), 2.35 (brs, 4H)

Example 100: 4-{2-[(7-Methoxynaphthalene-2-ylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxybenzamide

Step 1: Methyl 4-{2-[(7-methoxynaphthalene-2-ylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoate

The procedure of Step 5 Example 39 was repeated except for using 7-methoxynaphthalene-2-ylamine as the starting material to obtain the title compound.

¹H NMR (200 MHz, CDCl₃) δ 3.89 (s, 3H, OCH₃), 3.96 (s, 3H, OCH₃), 4.28 (d, J=5.4 Hz, 2H, CH₂), 4.36 (d, J=5.4 Hz, 1H, NH), 4.90 (s, 2H, CH₂), 6.68 (t, J=3.6 Hz, 2H, ArH), 6.99 (s, 1H, CH), 7.05 (d, J=2.6 Hz, 1H, ArH), 7.32 (m, 4H, ArH), 7.48 (m, 3H, ArH), 7.83 (m, 1H, ArH), 8.16 (d, J=8.4 Hz, 2H, ArH), 8.30 (d, J=2.6 Hz, 1H, ArH)

Step 2: 4-{2-[(7-Methoxynaphthalene-2-ylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoic acid

The procedure of Step 6 Example 39 was repeated except for using methyl 4-{2-[(7-methoxynaphthalene-2-ylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-benzoate to obtain the title compound.

Step 3: 4-{2-[(7-Methoxynaphthalene-2-ylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-2-[(7-methoxynaphthalene-2-ylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl-benzoic acid to obtain the title compound.

Example 101: 4-[2-(Pyridine-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[2-(pyridine-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-benzoate

The procedure of Step 5A of Example 39 was repeated except for using (3-aminopyridine) as the starting material to obtain the title compound (67%).

¹H NMR (200 MHz, CDCl₃), σ 3.72 (s, 6H, 2OCH₃), 3.89 (s, 3H, OCH₃), 4.09 (s, 2H, CH₂), 4.63 (s, 2H, CH₂), 4.71 (m, 1H, NH), 6.06 (m, 3H, ArH), 6.85 (s, 1H, CH), 6.96 (m, 1H, ArH), 7.12 (m, 1H, ArH), 7.27 (d, 2H J=8.1Hz, ArH), 8.96 (d, 2H J=8.1Hz, ArH), 8.18 (m, 1H, ArH)

Step 2: 4-[2-(Pyridine-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-benzoic acid

The procedure of Step 6 Example 39 was repeated except for using methyl 4-[2-(pyridine-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-benzoate to obtain the title compound (99%).

¹H NMR (200 MHz, CDCl₃), σ 3.69 (s, 6H, 2OCH₃), 4.22 (s, 2H, CH₂), 4.77

(S, 2H, CH₂), 6.09 (m, 3H, ArH), 6.98 (S, 1H, CH), 6.96 (m, 1H, ArH), 7.12 (m, 1H, ArH), 7.27 (d, 2H J=8.1Hz, ArH), 8.96 (d, 2H J=8.1Hz, ArH), 8.18 (m, 1H, ArH)

5 **Step 3: 4-[2-(Pyridine-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-N-hydroxybenzamide**

The procedure of Step 7 of Example 39 was repeated except for using 4-[2-(pyridine-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-benzoic acid to obtain the title compound (73 %).

10 ¹H NMR (200 MHz, CDCl₃), σ 3.71 (S, 6H, 2OCH₃), 4.23 (S, 2H, CH₂), 4.75 (S, 2H, CH₂), 6.08 (m, 3H, ArH), 7.01 (S, 1H, CH), 6.96 (m, 1H, ArH), 7.14 (m, 1H, ArH), 7.28 (d, 2H J=8.1Hz, ArH), 8.97 (d, 2H J=8.1Hz, ArH), 8.19 (m, 1H, ArH)

15 **Example 102: 4-[3-(3-Methoxy phenylsulfenyl)-2-(quinoline-3-ylaminomethyl)-propenyl]-N-hydroxy-benzamide**

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(3-methoxy phenylsulfenyl) propenyl]-benzoate

20 The procedure of Step 1 of Example 39 was repeated except for using 3-methoxy phenylsulfen as the starting material to obtain the title compound (95 %).

25 ¹H NMR (200 MHz, CDCl₃), σ 1.54 (S, 9H, 3CH₃), 2.43 (S, 3H, CH₃), 3.90 (S, 3H, OCH₃), 4.68 (S, 2H, CH₂), 6.82 (d, 2H J=8.9Hz, ArH), 7.23 (d, 2H J=9.0Hz, ArH), 7.32 (d, 2H J=8.14Hz, ArH), 7.89 (S, 1H,CH), 8.01 (d, 2H J=7.7Hz, ArH)

30 **Step 2: Methyl 4-[2-carboxy-3-(3-methoxy phenylsulfenyl) propenyl]-benzoate**

The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(3-methoxy phenylsulfenyl) propenyl]-benzoate to obtain the title compound (99 %).

¹H NMR (200 MHz, CDCl₃), σ 2.41 (s, 3H, CH₃), 3.89 (s, 3H, OCH₃), 4.69 (s, 2H, CH₂), 6.82 (d, 2H J=8.9Hz, ArH), 7.23 (d, 2H J=9.0Hz, ArH), 7.32 (d, 2H J=8.14Hz, ArH), 7.89 (s, 1H, CH), 8.01 (d, 2H J=7.7Hz, ArH)

5

Step 3: Methyl 4-[2-hydroxymethyl-3-(3-methoxy phenylsulfenyl) propenyl]-benzoate

The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(3-methoxy phenylsulfenyl) propenyl]-benzoate to obtain the title compound (78%).

10

¹H NMR (200 MHz, CDCl₃), σ 3.71 (s, 3H, CH₃), 3.80 (s, 2H, CH₂), 3.90 (s, 3H, OCH₃), 4.38 (s, 2H, CH₂), 6.82 (d, 2H J=8.9Hz, ArH), 6.89 (s, 1H, CH), 7.23 (d, 2H J=9.0Hz, ArH), 7.32 (d, 2H J=8.14Hz, ArH), 8.01 (d, 2H J=7.7Hz, ArH)

15

Step 4: Methyl 4-[2-bromomethyl-3-(3-methoxy phenylsulfenyl) propenyl]-benzoate

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(3-methoxy phenylsulfenyl) propenyl]-benzoate to obtain the title compound (74%).

20

¹H NMR (200 MHz, CDCl₃), σ 3.71 (s, 3H, CH₃), 3.80 (s, 2H, CH₂), 3.90 (s, 3H, OCH₃), 4.38 (s, 2H, CH₂), 6.82 (d, 2H J=8.9Hz, ArH), 6.89 (s, 1H, CH), 7.23 (d, 2H J=9.0Hz, ArH), 7.32 (d, 2H J=8.14Hz, ArH), 8.01 (d, 2H J=7.7Hz, ArH)

25

Step 5: Methyl 4-[3-(3-methoxy phenylsulfenyl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 4-[2-bromomethyl-3-(3-methoxy phenylsulfenyl) propenyl]-benzoate to obtain the title compound (24%).

30

¹H NMR (200 MHz, CDCl₃), σ 3.70 (s, 3H, CH₃), 3.83 (s, 2H, CH₂), 3.91 (s, 3H, OCH₃), 4.18 (d, 2H J=5.1Hz, CH₂), 4.37 (m, 1H, NH), 6.71-6.89 (m, 4H, CH, ArH), 7.07-7.39 (m, 4H, ArH), 7.44 (m, 2H, ArH), 7.60 (m, 1H, ArH), 7.95 (m, 3H, ArH), 8.49 (m, 1H, ArH)

5

Step 6: 4-[3-(3-Methoxy phenylsulfenyl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoic acid

The procedure of Step 6 Example 39 was repeated except for using methyl 4-[3-(3-methoxy phenylsulfenyl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoate to obtain the title compound (94%).

10

¹H NMR (200 MHz, CDCl₃), σ 3.70 (s, 3H, CH₃), 3.82 (s, 2H, CH₂), 4.18 (d, 2H J=5.1Hz, CH₂), 6.71-6.89 (m, 4H, CH, ArH), 7.07-7.39 (m, 4H, ArH), 7.44 (m, 2H, ArH), 7.60 (m, 1H, ArH), 7.95 (m, 3H, ArH), 8.49(m, 1H, ArH)

15

Step 7: 4-[3-(3-Methoxy phenylsulfenyl)-2-(quinoline-3-ylaminomethyl)-propenyl]-N-hydroxy-benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[3-(3-methoxy phenylsulfenyl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoic acid to obtain the title compound (9%).

20

¹H NMR (200 MHz, CDCl₃), σ 3.71 (s, 3H, CH₃), 3.84 (s, 2H, CH₂), 4.16 (s, 2H, CH₂), 6.71-6.89 (m, 4H, CH, ArH), 7.07-7.39 (m, 4H, ArH), 7.44 (m, 2H, ArH), 7.60 (m, 1H, ArH), 7.95 (m, 3H, ArH), 8.49 (m, 1H, ArH)

25

Example 103: 4-[3-(1,3-Dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-propenyl]-benzoate

30

Methyl 4-(1-acetoxy-2-*tert*-butoxycarbonyl-allyl)-benzoate (IV) (1.67 g, 5 mM) was dissolved in N,N-dimethylformamide (8 mL), to which 3a,4,7,7a-tetrahydro-isoindole-1,3-dione (831 mg, 5.5 mM) and potassium carbonate (829 mg, 6 mM) were added, followed by stirring the mixture at

room temperature for 24 hours. After completing the reaction, the reaction mixture was cooled and concentrated under a reduced pressure. The resulting residue was purified by silica gel column chromatography to obtain the title compound (58 %).

¹H NMR (200 MHz, CDCl₃), σ 1.51 (s, 9H, 3CH₃), 2.18 (m, 2H, CH₂), 2.52 (m, 2H, CH₂), 2.88 (m, 2H, CH₂), 3.93 (s, 3H, OCH₃), 4.47 (s, 2H, CH₂), 5.82 (m, 2H, ArH), 7.46 (d, 2H J=8.9Hz, ArH), 7.77 (s, 1H, CH), 8.04 (d, 2H J=7.7Hz, ArH)

Step 2: Methyl 4-[2-carboxy-3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-propenyl]-benzoate

The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-propenyl]-benzoate to obtain the title compound (99%).

¹H NMR (200 MHz, CDCl₃), σ 2.18 (m, 2H, CH₂), 2.51 (m, 2H, CH₂), 2.86 (m, 2H, CH₂), 3.91 (s, 3H, OCH₃), 4.45 (s, 2H, CH₂), 5.82 (m, 2H, ArH), 7.46 (d, 2H J=8.9Hz, ArH), 7.77 (s, 1H, CH), 8.04 (d, 2H J=7.7Hz, ArH)

Step 3: Methyl 4-[3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-2-hydroxymethyl-propenyl]-benzoate

The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-propenyl]-benzoate to obtain the title compound (69%).

¹H NMR (200 MHz, CDCl₃), σ 2.20 (m, 2H, CH₂), 2.56 (m, 2H, CH₂), 3.05 (m, 2H, CH₂), 3.92 (s, 3H, OCH₃), 4.03 (s, 2H, CH₂), 4.44 (s, 2H, CH₂), 5.89 (m, 2H, ArH), 6.71 (s, 1H, CH), 7.46 (d, 2H J=8.9Hz, ArH), 8.02 (d, 2H J=7.7Hz, ArH)

Step 4: Methyl 4-[2-Bromomethyl-3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-propenyl]-benzoate

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-2-hydroxymethyl-propenyl]-benzoate to obtain the title compound (97%).

5 ¹H NMR (200 MHz, CDCl₃), σ 2.15 (m, 2H, CH₂), 2.59 (m, 2H, CH₂), 3.03 (m, 2H, CH₂), 3.91 (s, 3H, OCH₃), 3.99 (s, 2H, CH₂), 4.47 (s, 2H, CH₂), 5.89 (m, 2H, ArH), 6.87 (s, 1H, CH), 7.44 (d, 2H J=8.9Hz, ArH), 8.02 (d, 2H J=7.7Hz, ArH)

10 **Step 5: Methyl 4-[3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoate**

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-propenyl]-benzoate to obtain the title compound (53%).

15 ¹H NMR (200 MHz, CDCl₃), σ 2.17 (m, 2H, CH₂), 2.55 (m, 2H, CH₂), 2.95 (m, 2H, CH₂), 3.81 (d, 2H J=5.7 Hz, CH₂), 3.89 (s, 3H, OCH₃), 4.37 (s, 2H, CH₂), 5.81 (m, 2H, ArH), 6.81 (s, 1H, CH), 7.02 (m, 1H, ArH), 7.42 (m, 5H, ArH), 7.58 (m, 2H, ArH), 7.97 (m, 3H, ArH), 8.49 (m, 1H, ArH)

20 **Step 6: 4-[3-(1,3-Dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoic acid**

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoate to obtain the title compound (65%).

25 ¹H NMR (200 MHz, CDCl₃), σ 2.17 (m, 2H, CH₂), 2.55 (m, 2H, CH₂), 2.95 (m, 2H, CH₂), 3.94 (s, 2H, CH₂), 4.38 (s, 2H, CH₂), 5.81 (m, 2H, ArH), 6.81 (s, 1H, CH), 7.02 (m, 1H, ArH), 7.42 (m, 5H, ArH), 7.58 (m, 2H, ArH), 7.97 (m, 3H, ArH), 8.49 (m, 1H, ArH)

30 **Step 7: 4-[3-(1,3-Dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-N-hydroxy benzamide**

The procedure of Step 7 of Example 39 was repeated except for using 4-[3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoic acid to obtain the title compound (32%).

5 ¹H NMR (200 MHz, CDCl₃), σ 2.17 (m, 2H, CH₂), 2.51 (m, 2H, CH₂), 2.95 (m, 2H, CH₂), 3.97 (s, 2H, CH₂), 4.41 (s, 2H, CH₂), 5.67 (m, 2H, ArH), 6.81 (s, 1H, CH), 7.02 (m, 1H, ArH), 7.45 (m, 5H, ArH), 7.61 (m, 2H, ArH), 7.97 (m, 3H, ArH), 8.45 (m, 1H, ArH)

10 **Example 104: 4-[3-(2-Oxo-pyrrolidine-1-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-N-hydroxy benzamide**

Step 1: Methyl 4-[2-*tert*-butoxycarbonyl-3-(2-oxo-pyrrolidine-1-yl)-propenyl]-benzoate

15 The procedure of Step 1 of Example 102 was repeated except for using 2-oxo-pyrrolidine as the starting material to obtain the title compound (26%).

20 ¹H NMR (200 MHz, CDCl₃), σ 1.94 (s, 9H, CH₃), 2.03 (dd, 2H J=7.5 1.2 Hz, CH₂), 2.41 (t, 2H, CH₂), 3.15 (t, 2H, CH₂), 3.91 (s, 3H, OCH₃), 4.09 (s, 2H, CH₂), 6.75 (s, 1H, CH), 7.26 (d, 2H J=8.1 Hz, ArH), 8.04 (d, 2H J=8.2 Hz, ArH)

Step 2: Methyl 4-[2-carboxy-3-(2-oxo-pyrrolidine-1-yl)-propenyl]-benzoate

25 The procedure of Step 2 of Example 39 was repeated except for using methyl 4-[2-*tert*-butoxycarbonyl-3-(2-oxo-pyrrolidine-1-yl)-propenyl]-benzoate to obtain the title compound (99%).

30 ¹H NMR (200 MHz, CDCl₃), σ 2.03 (m, 2H, CH₂), 2.41 (t, 2H, CH₂), 3.15 (t, 2H, CH₂), 3.91 (s, 3H, OCH₃), 4.09 (s, 2H, CH₂), 6.75 (s, 1H, CH), 7.26 (d, 2H J=8.1 Hz, ArH), 8.04 (d, 2H J=8.2 Hz, ArH)

Step 3: Methyl 4-[2-hydroxymethyl-3-(2-oxo-pyrrolidine-1-yl)-propenyl]-

benzoate

The procedure of Step 3 of Example 39 was repeated except for using methyl 4-[2-carboxy-3-(2-oxo-pyrrolidine-1-yl)-propenyl]-benzoate to obtain the title compound (55%).

¹H NMR (200 MHz, CDCl₃), σ 2.01 (dd, 2H J=7.5 1.2 Hz, CH₂), 2.42 (t, 2H, CH₂), 3.17 (t, 2H, CH₂), 3.93 (s, 3H, OCH₃), 4.09 (s, 2H, CH₂), 4.16 (s, 2H, CH₂), 6.75 (s, 1H, CH), 7.26 (d, 2H J=8.1 Hz, ArH), 8.04 (d, 2H J=8.2 Hz, ArH)

Step 4: Methyl 4-[2-bromomethyl-3-(2-oxo-pyrrolidine-1-yl)-propenyl]-benzoate

The procedure of Step 4B of Example 39 was repeated except for using methyl 4-[2-hydroxymethyl-3-(2-oxo-pyrrolidine-1-yl)-propenyl]-benzoate to obtain the title compound (49%).

¹H NMR (200 MHz, CDCl₃), σ 1.91 (m, 2H, CH₂), 2.29 (t, 2H, CH₂), 3.22 (t, 2H, CH₂), 3.92 (s, 3H, OCH₃), 4.09 (s, 2H, CH₂), 4.25 (s, 2H, CH₂), 6.94 (s, 1H, CH), 7.31 (d, 2H J=8.1 Hz, ArH), 8.02 (d, 2H J=8.2 Hz, ArH)

Step 5: Methyl 4-[3-(2-oxo-pyrrolidine-1-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using methyl 4-[2-bromomethyl-3-(2-oxo-pyrrolidine-1-yl)-propenyl]-benzoate to obtain the title compound (30%).

¹H NMR (200 MHz, CDCl₃), σ 1.88 (m, 2H, CH₂), 2.37 (t, 2H, CH₂), 3.11 (t, 2H, CH₂), 3.93 (d, 2H j=4.9 Hz, CH₂), 3.90 (s, 3H, OCH₃), 4.11 (s, 2H, CH₂), 5.19 (m, 1H, NH), 6.93 (s, 1H, CH), 7.07 (m, 1H, ArH), 7.20 (d, 2H J=8.1 Hz, ArH), 7.40 (m, 2H, ArH), 7.58 (m, 1H, ArH), 7.96 (m, 3H, ArH), 8.54 (m, 1H, ArH)

Step 6: 4-[3-(2-Oxo-pyrrolidine-1-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using

methyl 4-[3-(2-oxo-pyrrolidine-1-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoate to obtain the title compound (90%).

¹H NMR (200 MHz, CDCl₃), σ 1.88 (m, 2H, CH₂), 2.37 (t, 2H, CH₂), 3.11 (t, 2H, CH₂), 3.91 (s, 2H, CH₂), 4.11 (s, 2H, CH₂), 5.19 (m, 1H, NH), 6.93 (s, 1H, CH), 7.07 (m, 1H, ArH), 7.20 (d, 2H J=8.1 Hz, ArH), 7.40 (m, 2H, ArH), 7.58 (m, 1H, ArH), 7.96 (m, 3H, ArH), 8.54 (m, 1H, ArH)

Step 7: 4-[3-(2-Oxo-pyrrolidine-1-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-N-hydroxy benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[3-(2-oxo-pyrrolidine-1-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-benzoic acid to obtain the title compound (45%).

¹H NMR (200 MHz, CDCl₃), σ 1.88 (m, 2H, CH₂), 2.37 (t, 2H, CH₂), 3.16 (t, 2H, CH₂), 3.94 (s, 2H, CH₂), 4.11 (s, 2H, CH₂), 5.19 (m, 1H, NH), 6.99 (s, 1H, CH), 7.07 (m, 1H, ArH), 7.20 (d, 2H J=8.1 Hz, ArH), 7.40 (m, 2H, ArH), 7.62 (m, 4H, ArH), 8.54 (m, 1H, ArH)

Example 105: 4-[3-(6-Dimethylaminomethyl-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy benzamide

Step 1: Methyl 4-[3-(6-dimethylaminomethyl-quinoline-3-ylamino)-2-methyl-propenyl]-benzoate

The procedure of Step 1 of Example 1 was repeated except for using 6-dimethylaminomethyl-quinoline-3-ylamine as the starting material to obtain the title compound (56%).

¹H NMR (200 MHz, CDCl₃) δ 8.49 (d, J=2.8 Hz, 1H), 7.86-8.07 (m, 3H), 7.28-7.55 (m, 4H), 7.04 (d, J=3.0 Hz, 1H), 6.62 (s, 1H), 4.43 (brs, 1H), 3.98 (d, J=5.8 Hz, 2H), 3.92 (s, 3H), 3.57 (s, 2H), 2.30 (s, 6H), 1.99 (s, 3H)

Step 2: 4-[3-(6-Dimethylaminomethyl-quinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(6-dimethylaminomethyl-quinoline-3-ylamino)-2-methyl-propenyl]-benzoate to obtain the title compound (98%).

5 ¹H NMR (200 MHz, CD₃OD) δ 8.58 (s, 1H), 7.87-8.08 (m, 4H), 7.22-7.62 (m, 4H), 6.66 (s, 1H), 4.44 (d, J=2.6 Hz, 2H), 4.03 (s, 2H), 2.90 (s, 6H), 2.00 (s, 3H)

10 **Step 3: 4-[3-(6-Dimethylaminomethyl-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy benzamide**

The procedure of Step 3 of Example 1 was repeated except for using 4-[3-(6-dimethylaminomethyl-quinoline-3-ylamino)-2-methyl-propenyl]-benzoic acid to obtain the title compound (48%).

15 ¹H NMR (200 MHz, DMSO-d₆) δ 11.22 (s, 1H), 9.02 (brs, 1H), 8.55 (s, 1H), 7.55-8.1 (m, 3H), 7.31-7.41 (m, 3H), 6.57-7.14 (m, 3H), 3.91 (d, J=5.2 Hz, 2H), 3.76 (s, 2H), 2.51 (s, 3H), 2.34 (s, 6H)

20 **Example 106: 4-[3-(6-Dimethylaminomethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy benzamide**

Step 1: Methyl 4-[3-(6-dimethylaminomethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

25 The procedure of Step 5B of Example 39 was repeated except for using 6-dimethylaminomethyl-quinoline-3-ylamine as the starting material to obtain the title compound (20%).

¹H NMR (200 MHz, CDCl₃) δ 7.76-8.45 (m, 6H), 7.18-7.56 (m, 8H), 6.68-7.18 (m, 3H), 4.91 (s, 2H), 4.63 (brs, 1H), 4.31 (d, J=4.8 Hz, 2H), 3.91 (s, 3H), 3.55 (s, 2H), 2.29 (s, 6H)

30

Step 2: 4-[3-(6-Dimethylaminomethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using

methyl 4-[3-(6-dimethylaminomethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (86%).

¹H NMR (200 MHz, CD₃OD) δ 7.76-8.51 (m, 6H), 7.22-7.53 (m, 8H), 6.64-7.14 (m, 3H), 4.92 (s, 2H), 4.27 (d, J=7.4 Hz, 2H), 4.13 (s, 2H), 2.67 (s, 6H)

Step 3: 4-[3-(6-Dimethylaminomethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy benzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-[3-(6-dimethylaminomethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (56%).

¹H NMR (200 MHz, DMSO-d₆) δ 11.12 (s, 1H), 9.02 (brs, 1H), 8.18-8.53 (m, 2H), 7.29-7.89 (m, 11H), 6.80-7.111 (m, 4H), 5.02 (s, 2H), 4.18 (d, J=10.6 Hz, 2H), 3.44 (s, 2H), 2.52 (s, 6H)

Example 107: 4-[3-(6-Pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[3-(6-pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-methyl-propenyl]-benzoate

The procedure of Step 1 of Example 1 was repeated except for using 6-pyrrolidine-1-ylmethyl-quinoline-3-ylamine as the starting material to obtain the title compound (34%).

¹H NMR (200 MHz, CDCl₃) δ 8.50 (d, J=3.0 Hz, 1H), 7.58-8.06 (m, 3H), 7.66 (s, 1H), 7.28-7.49 (m, 3H), 7.04 (d, J=3.0 Hz, 1H), 6.60 (s, 1H), 4.53 (t, J=6.6 Hz, 1H), 3.95 (d, J=6.6 Hz, 2H), 3.91 (s, 3H), 3.85 (s, 2H), 2.70 (brs, 4H), 1.98 (s, 3H), 1.87 (brs, 4H)

Step 2: 4-[2-Methyl-3-(6-pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-propenyl]-benzoic acid

The procedure of Step 2 of Example 1 was repeated except for using methyl 4-[3-(6-pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-methyl-

propenyl]-benzoate to obtain the title compound (72%).

¹H NMR (200 MHz, CD₃OD) δ 8.55 (s, 1H), 7.82-8.05 (m, 4H), 7.16-7.55 (m, 4H), 6.63 (s, 1H), 4.47 (s, 2H), 3.99 (s, 2H), 3.33 (brs, 4H), 2.11 (brs, 4H), 1.98 (s, 3H)

Step 3: 4-[3-(6-Pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxybenzamide

The procedure of Step 3 of Example 1 was repeated except for using 4-[2-methyl-3-(6-pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-propenyl]-benzoic acid to obtain the title compound.

¹H NMR (200 MHz, DMSO-d₆) δ 11.21 (s, 1H), 9.02 (s, 1H), 8.52 (s, 1H), 7.31-7.79 (m, 6H), 7.03 (s, 1H), 6.78 (s, 1H), 6.57 (s, 1H), 3.90 (d, J=4.8 Hz, 2H), 3.77 (s, 2H), 2.57 (brs, 4H), 1.93 (s, 3H), 1.73 (brs, 4H)

Example 108: 4-[3-(6-Pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide

Step 1: Methyl 4-[3-(6-pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoate

The procedure of Step 5B of Example 39 was repeated except for using 6-pyrrolidine-1-ylmethyl-quinoline-3-ylamine as the starting material to obtain the title compound (25%).

¹H NMR (200 MHz, CDCl₃) δ 7.78-8.42 (m, 6H), 7.28-7.57 (m, 8H), 6.65-7.07 (m, 3H), 4.88 (s, 2H), 4.24 (d, J=12.4 Hz, 2H), 3.90 (s, 3H), 3.78 (s, 2H), 2.64 (brs, 4H), 1.83 (brs, 4H)

Step 2: 4-[3-(6-Pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid

The procedure of Step 6 of Example 39 was repeated except for using methyl 4-[3-(6-pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoate to obtain the title compound (98%).

¹H NMR (200 MHz, CD₃OD) δ 7.81-8.53 (m, 7H), 6.64-7.61 (m, 10H), 4.94 (s, 2H), 4.42 (s, 2H), 4.29 (d, J=7.4 Hz, 2H), 3.30 (brs, 4H), 1.99 (brs, 4H)

5 **Step 3: 4-[3-(6-Pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide**

The procedure of Step 7 of Example 39 was repeated except for using 4-[3-(6-pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-benzoic acid to obtain the title compound (39%).

10

¹H NMR (200 MHz, DMSO-d₆) δ 11.21 (s, 1H), 9.02 (s, 1H), 7.33-8.54 (m, 13H), 6.72-7.14 (m, 4H), 4.94 (s, 2H), 4.20 (d, J=18.6 Hz, 2H), 3.81 (s, 2H), 3.35 (brs, 4H), 1.77 (brs, 4H)

15 **Example 109: 4-{3-[6-(4-Methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-methyl-propenyl}-N-hydroxybenzamide**

Step 1: Methyl 4-{3-[6-(4-methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-methyl-propenyl}-benzoate

20 The procedure of Step 1 of Example 1 was repeated except for using 4-methyl-piperazine as the starting material to obtain the title compound (79%).

25 ¹H NMR (200 MHz, CDCl₃) δ 8.48 (d, J=3.0 Hz, 1H), 7.86-8.08 (m, 3H), 7.28-7.53 (m, 4H), 7.05 (d, J=3.0 Hz, 1H), 6.62 (s, 1H), 4.04 (t, J=5.8 Hz, 1H), 3.98 (d, J=5.8 Hz, 2H), 3.93 (s, 3H), 3.64 (s, 2H), 2.54 (brs, 8H), 2.33 (s, 3H), 2.00 (s, 3H)

Step 2: 4-{3-[6-(4-Methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-methyl-propenyl}-benzoic acid

30 The procedure of Step 2 of Example 1 was repeated except for using methyl 4-3-[6-(4-methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-methyl-propenyl-benzoate to obtain the title compound (97%).

¹H NMR (200 MHz, CD₃OD) δ 8.49 (d, J=2.6 Hz, 1H), 7.32-8.08 (m, 7H), 7.15 (d, J=2.2 Hz, 1H), 6.64 (s, 1H), 3.99 (s, 2H), 3.77 (s, 2H), 3.23 (brs, 4H), 2.83 (s, 3H), 2.79 (brs, 4H), 1.98 (s, 3H)

5 **Step 3: 4-{3-[6-(4-Methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-methyl-propenyl}-N-hydroxybenzamide**

The procedure of Step 3 of Example 1 was repeated except for using 4-3-[6-(4-methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-methyl-propenyl-benzoic acid to obtain the title compound (67%).

10

¹H NMR (200 MHz, DMSO-d₆) δ 11.19 (s, 1H), 9.01 (s, 1H), 8.51 (d, J=3.0 Hz, 1H), 7.24-7.80 (m, 6H), 7.03 (d, J=2.6 Hz, 1H), 6.57-6.75 (m, 2H), 3.90 (d, J=4.4 Hz, 1H), 3.53 (s, 2H), 2.32 (brs, 3H), 2.15 (brs, 3H), 1.93 (s, 3H)

15 **Example 110: 4-{3-[6-(4-Methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-(naphthalene-1-yloxymethyl)-propenyl}-N-hydroxybenzamide**

Step 1: Methyl 4-{3-[6-(4-methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-(naphthalene-1-yloxymethyl)-propenyl}-benzoate

20 The procedure of Step 5B of Example 39 was repeated except for using 4-methyl-piperazine as the starting material to obtain the title compound (42%).

25 ¹H NMR (200 MHz, CDCl₃) δ 7.78-8.45 (m, 6H), 6.69-7.56 (m, 11H), 4.86 (s, 2H), 4.43 (brs, 1H), 3.95 (s, 2H), 3.91 (s, 3H), 3.60 (s, 2H), 2.59 (brs, 8H), 2.36 (s, 3H)

Step 2: 4-{3-[6-(4-methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-(naphthalene-1-yloxymethyl)-propenyl}-benzoic acid

30 The procedure of Step 6 of Example 39 was repeated except for using methyl 4-{3-[6-(4-methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-(naphthalene-1-yloxymethyl)-propenyl}-benzoate to obtain the title compound (95%).

¹H NMR (200 MHz, CD₃OD) δ 7.71-8.45 (m, 6H), 6.72-7.56 (m, 11H), 4.95 (s, 2H), 4.30 (d, J=4.8 Hz, 2H), 3.68 (s, 2H), 3.24 (brs, 4H), 2.84 (s, 3H), 2.76 (brs, 4H)

5

Step 3: 4-{3-[6-(4-methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-(naphthalene-1-yloxymethyl)-propenyl}-N-hydroxybenzamide

The procedure of Step 7 of Example 39 was repeated except for using 4-{3-[6-(4-methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-(naphthalene-1-yloxymethyl)-propenyl}-benzoic acid to obtain the title compound (72%).

10

¹H NMR (200 MHz, DMSO-d₆) δ 11.20 (s, 1H), 9.02 (s, 1H), 8.53 (d, J=2.6 Hz, 1H), 8.21 (d, J=7.6 Hz, 1H), 7.57-7.94 (m, 4H), 6.77-7.49 (m, 11H), 4.94 (s, 2H), 4.23 (d, J=5.8 Hz, 2H), 3.56 (s, 2H), 2.75 (brs, 4H), 2.50 (brs, 4H), 2.44 (s, 3H)

15

Test Example 1

HDAC activity was analyzed using BIOMOL QuantizymeTM Assay system which comprised two steps of 1) enzyme reaction between HDAC and an HDAC inhibitor and 2) determination of the level of HDAC inhibitory activity. In step 1), 42 μl of a buffer solution (25 mM Tris-HCl [pH 8.0], 137 mM NaCl, 2.7 mM KCl, 1 mM MgCl₂) and 5 μl of 250 μM Fluor de LysTM substrate were added to each well of a 96-well plate, to which 2.5 μl of a test compound was added. 0.5 μl of HeLa nuclear extract (10 μM) (a source of HDAC enzymes) was then added thereto to a final concentration of 100nM. The enzyme reaction was carried out for 1 hour. Subsequently, in step 2), 2 μM tricostatin A was added to 50 μl of Flour de LysTM developer, followed by allowing the mixture to react at room temperature for 15 minutes. The light excited at 355 nm and emitted at 460 nm from the fluorophore was measured with a fluorometric plate reader. The intensity of the fluorescence increased as the enzyme activity became higher. The

20

25

30

HDAC inhibitory activity of each of the test compounds was determined and compared with that of the control.

The HDAC inhibitory concentrations of the compounds according to the present invention are shown in Table 1.

5

Table 1

HDAC Inhibitory Concentration (IC ₅₀ , $\mu\text{M}/\text{m}\ell$)			
Compound	Inhibitory Concentration ($\mu\text{M}/\text{m}\ell$)	Compound	Inhibitory Concentration ($\mu\text{M}/\text{m}\ell$)
SAHA	0.190	Ex. 40	0.094
Ex. 1	0.022	Ex. 41	0.038
Ex. 2	0.029	Ex. 45	0.089
Ex. 4	0.063	Ex. 46	0.077
Ex. 10	0.072	Ex. 51	0.098
Ex. 12	0.089	Ex. 53	0.005
Ex. 19	0.017	Ex. 66	0.061
Ex. 23	0.008	Ex. 71	0.029
Ex. 24	0.026	Ex. 75	0.086
Ex. 28	0.032	Ex. 86	0.007
Ex. 29	0.026	Ex. 88	0.095
Ex. 33	0.022	Ex. 97	0.010
Ex. 34	0.022	Ex. 98	0.017
Ex. 35	0.045	Ex. 99	0.031
Ex. 39	0.018	Ex. 100	0.085

As shown in Table 1, each of the inventive arylaminomethyl propenyl benzhydroxyamide derivatives of formula (I) has a markedly higher inhibitory activity against HDAC.

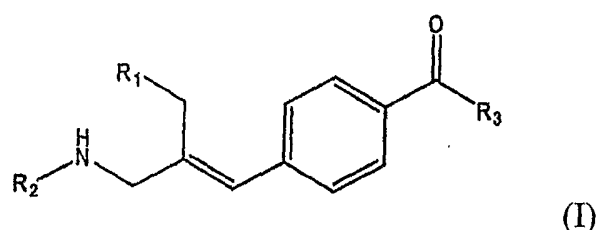
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While the invention has been described with respect to the above specific embodiments, it should be recognized that various modifications and

changes may be made and also fall within the scope of the invention as defined by the claims that follow.

WHAT IS CLAIMED IS:

1. A compound of formula (I) or a pharmaceutically acceptable salt thereof:



wherein,

R₁ is hydrogen, aryloxy, arylthio, arylimido, C₁₋₅ alkylimido, arylamido, C₁₋₅ alkylamido or arylsulfonamido, in which the aryl is phenyl, naphthyl or carbazole, each being optionally substituted with one or more substituents selected from the group consisting of hydroxy, C₁₋₅ alkyloxy, C₁₋₅ alkyl, aryl, C₁₋₅ alkylamino, cyano, cyanophenyl, C₁₋₅ alkylthio and nitro;

R₂ is phenyl which is optionally substituted with one or more substituents selected from the group consisting of hydroxy, C₁₋₅ alkyloxy, C₁₋₅ alkyl, C₁₋₅ alkylamino, cyano, cyanophenyl and mercaptoalkyl; or heteroaryl selected from the group consisting of piperazine, triazole, thiazole, benzothiazole, dibenzofurane, pyridine, quinoline and isoquinoline, the heteroaryl being optionally substituted with one or more substituents selected from the group consisting of halogen, C₁₋₅ alkyloxy, amino C₁₋₅ alkyloxy, C₁₋₅ alkyl, amino C₁₋₅ alkyl, C₁₋₅ alkylamino, aryl C₁₋₅ alkylamino and aryloxy C₁₋₅ alkylamino; and

R₃ is hydroxyamino.

2. The compound of claim 1, which is selected from the group consisting of:

4-[3-(quinoline-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(3-benzyloxy-phenylamino)-2-methylpropenyl]-N-hydroxy benzamide;

4-[3-(3,4-dihydro-1H-isoquinoline-2-yl)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(quinoline-8-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(4-phenyloxy-phenylamino)-2-methylpropenyl]-N-hydroxy
5 benzamide;
4-[3-(4-dimethylamino-phenylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(quinoline-5-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(quinoline-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
10 4-[3-(5-hydroxy-naphthalene-1-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(benzo[1,2,5]thiadiazol-4-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(anthracene-1-ylamino)-2-methylpropenyl]-N-hydroxy
15 benzamide;
4-[3-(4,6-dihydropyrene-1-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(4-methyl-2H-chromene-7-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
20 4-[3-(3-benzoyloxypyridine-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(9-ethyl-9H-carbazol-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(5-methyl-1H-pyrazol-3-ylamino)-2-methylpropenyl]-N-hydroxy
25 benzamide;
4-[3-(5-methylsulfenyl-1H-[1,2,4]triazol-3-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(3-methoxy phenylamino)-2-methylpropenyl]-N-hydroxy benzamide;
30 4-[3-(naphthalene-1-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(naphthalene-2-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;

4-[3-(biphenyl-4-ylamino)-2-methylpropenyl]-N-hydroxy benzamide;
4-[3-(6-nitrobenzothiazol-2-ylamino)-2-methylpropenyl]-N-hydroxy
benzamide;
4-[3-(6-methoxybenzothiazol-2-ylamino)-2-methylpropenyl]-N-
5 hydroxy benzamide;
4-[3-(2-methoxydibenzofuran-3-ylamino)-2-methylpropenyl]-N-
hydroxy benzamide;
4-[3-(6-methoxypyridine-3-ylamino)-2-methylpropenyl]-N-hydroxy
benzamide;
10 4-[3-(2-chloropyridine-3-ylamino)-2-methylpropenyl]-N-hydroxy
benzamide;
4-[3-(6-morpholine-4-ylmethylquinoline-3-ylamino)-2-methyl-
propenyl]-N-hydroxy benzamide;
4-[3-(4'-cyanobiphenyl-4-ylamino)-2-methylpropenyl]-N-hydroxy
15 benzamide;
4-[2-methyl-3-(4-pyridine-2-ylpiperazine-1-yl)-propenyl]-N-hydroxy-
benzamide;
4-[2-methyl-3-(4-phenyl-piperazine-1-yl)-propenyl]-N-hydroxy-
benzamide;
20 4-[3-(benzyl-methylamino)-2-methyl-propenyl]-N-hydroxy-
benzamide;
4-[2-methyl-3-(2-phenoxy-ethylamino)-propenyl]-N-hydroxy-
benzamide;
4-[3-(8-bromoquinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy-
25 benzamide;
4-[3-(6-methoxyquinoline-3-ylamino)-2-methyl-propenyl]-N-
hydroxy-benzamide;
4-[3-(6-hydroxy-quinoline-3-ylamino)-2-methyl-propenyl]-N-
hydroxy-benzamide;
30 4-[2-methyl-3-(propyl-quinoline-3-ylamino)-propenyl]-N-hydroxy-
benzamide;
4-{2-methyl-3-[(2-hydroxy-ethyl)-quinoline-3-ylamino]-propenyl}-N-
hydroxy-benzamide;

4-[2-methyl-3-(formyl-quinoline-3-ylamino)-propenyl]-N-hydroxybenzamide;

4-[2-(quinoline-3-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl]-N-hydroxybenzamide;

5 4-[2-(quinoline-3-ylaminomethyl)-3-(4-cyano-phenoxy)-propenyl]-N-hydroxy benzamide;

4-[2-(quinoline-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-N-hydroxybenzamide;

10 4-[2-(quinoline-3-ylaminomethyl)-3-(4-benzyloxy-phenoxy)-propenyl]-N-hydroxybenzamide;

4-[2-(quinoline-3-ylaminomethyl)-3-(4-fluoro-phenoxy)-propenyl]-N-hydroxybenzamide;

4-[2-(quinoline-3-ylaminomethyl)-3-(4-acetylamino-phenoxy)-propenyl]-N-hydroxybenzamide;

15 4-[2-(quinoline-3-ylaminomethyl)-3-(4-methylsulfenyl-phenoxy)-propenyl]-N-hydroxybenzamide;

4-[2-(quinoline-3-ylaminomethyl)-3-phenoxy-propenyl]-N-hydroxybenzamide;

20 4-[2-(quinoline-3-ylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl]-N-hydroxybenzamide;

4-[2-(3,4-dimethoxyphenylaminomethyl)-3-(4-chloro-naphthalene-1-yloxy)-propenyl]-N-hydroxybenzamide;

4-[2-(quinoline-3-ylaminomethyl)-3-(3-methoxy-phenylsulfenyl)-propenyl]-N-hydroxybenzamide;

25 4-[2-(quinoline-3-ylaminomethyl)-3-(3-methoxy-phenylsulfenyl)-propenyl]-N-hydroxybenzamide;

4-[2-(quinoline-3-ylaminomethyl)-3-(2-nitro-naphthalene-1-yloxy)-propenyl]-N-hydroxybenzamide;

30 4-[2-(3,4-dimethoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide;

4-[2-(quinoline-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide;

4-[2-hydroxymethyl-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide;

4-[2-(pyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide;

5 4-[2-(6-methoxypyridine-3-ylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide;

4-[2-(4-methoxyphenylaminomethyl)-3-(9H-carbazol-1-yloxy)-propenyl]-N-hydroxybenzamide;

10 4-[2-(quinoline-3-ylaminomethyl)-3-(biphenyl-4-yloxy)-propenyl]-N-hydroxybenzamide;

4-[2-(quinoline-3-ylaminomethyl)-3-(benzothiazol-2-yloxy)-propenyl]-N-hydroxy-benzamide;

4-{2-[(3,4-dimethoxy-phenylamino)-methyl]-3-(benzothiazol-2-yloxy)-propenyl}-N-hydroxy-benzamide;

15 4-[2-(quinoline-3-ylaminomethyl)-3-(1,3-dioxo-1,3-dihydro-isoindole-2-yl)-propenyl]-N-hydroxy-benzamide;

4-[2-(indan-2-ylaminomethyl)-3-(naphthalene-1-yloxy)-propenyl]-N-hydroxy-benzamide;

20 4-[3-(naphthalene-1-yloxy)-2-(4-pyridine-2-yl-piperazine-1-ylmethyl)-propenyl]-N-hydroxy-benzamide;

4-{3-(naphthalene-1-yloxy)-2-[(2-phenoxy-ethylamino)-methyl]-propenyl}-N-hydroxy-benzamide;

4-{2-[(benzyl-methyl-amino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxy-benzamide;

25 4-[3-(6-methoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

4-[3-(8-bromoquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

30 4-[3-(5,6-dimethoxyquinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

4-[2-phenylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(3,4-dihydro-1H-isoquinoline-2-ylmethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(2-methoxy-dibenzofuran-3-ylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

5 4-[2-(naphthalene-1-ylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(quinoline-8-ylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

10 4-[2-(6-methoxy-pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(1,1-dioxo-1H-116-naphtho[1,8-cd]isothiazol-2-ylmethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(4-methoxy-phenylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

15 4-[2-(thiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(9-ethyl-9H-carbazol-3-ylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

20 4-[2-(6-methoxy-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(naphthalene-2-ylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(6-nitro-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

25 4-[2-(4-methyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(5,6-dimethyl-benzothiazol-2-ylaminomethyl)-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

30 4-[2-pyrrolidine-1-ylmethyl-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

4-[2-cyclopentylaminomethyl-3-(naphthalene-1-yloxy-methyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(1,3-dioxo-1,3-dihydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

4-[2-dimethylaminomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

5 4-[2-azidomethyl-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(2,5-dioxo-2,5-dihydro-pyrrol-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

10 4-[2-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(2-oxo-pyrrolidine-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(2-oxo-2,3-dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

15 4-[2-(2,3-dioxo-2,3-dihydro-indole-1-ylmethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy-benzamide;

4-[2-(pyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide;

20 4-[2-(2-chloropyridine-3-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide;

4-[2-(3-methoxyphenylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide;

4-[2-(biphenyl-4-ylaminomethyl)-3-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide;

25 4-{2-[(3,4-dimethoxy-phenylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxybenzamide;

4-{2-[(7-morpholine-4-yl-naphthalene-2-ylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxybenzamide;

30 4-{2-[(7-methoxynaphthalene-2-ylamino)-methyl]-3-(naphthalene-1-yloxy)-propenyl}-N-hydroxybenzamide;

4-[2-(pyridine-3-ylaminomethyl)-3-(3,5-dimethoxy-phenoxy)-propenyl]-N-hydroxybenzamide;

4-[3-(3-methoxy phenylsulfenyl)-2-(quinoline-3-ylaminomethyl)-propenyl]-N-hydroxy-benzamide;

4-[3-(1,3-dioxo-1,3,3a,4,7,7a-hexahydro-isoindole-2-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-N-hydroxy benzamide;

5 4-[3-(2-oxo-pyrrolidine-1-yl)-2-(quinoline-3-ylaminomethyl)-propenyl]-N-hydroxy benzamide;

4-[3-(6-dimethylaminomethyl-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxy benzamide;

10 4-[3-(6-dimethylaminomethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxy benzamide;

4-[3-(6-pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-methyl-propenyl]-N-hydroxybenzamide;

4-[3-(6-pyrrolidine-1-ylmethyl-quinoline-3-ylamino)-2-(naphthalene-1-yloxymethyl)-propenyl]-N-hydroxybenzamide;

15 4-{3-[6-(4-methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-methyl-propenyl}-N-hydroxybenzamide; and

4-{3-[6-(4-methyl-piperazine-1-ylmethyl)-quinoline-3-ylamino]-2-(naphthalene-1-yloxymethyl)-propenyl}-N-hydroxybenzamide.

20 3. A method for preparing the compound of formula (I), which comprises the steps of:

1) reacting the compound of formula (II) with *tert*-buthyl acrylate in the presence of 1,4-diazabicyclo[2.2.2]octane (DABCO) to obtain the Baylis-Hillman compound of formula (III);

25 2) reacting the compound of formula (III) with acetylchloride (AcCl) in the presence of pyridine to obtain the compound of formula (IV);

3) treating the compound of formula (IV) with sodium borohydride (NaBH₄) in *tert*-butanol to obtain the compound of formula (V);

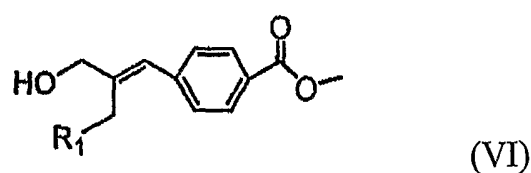
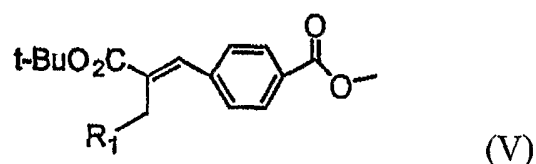
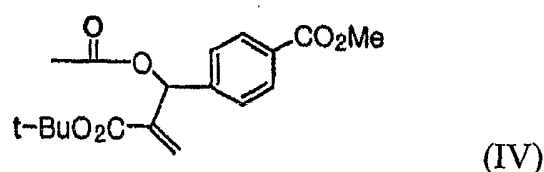
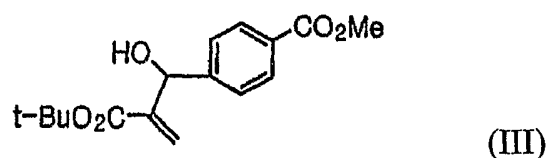
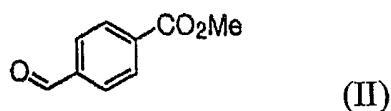
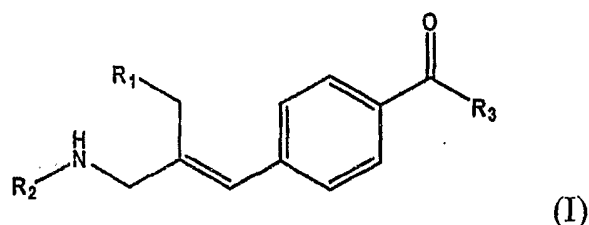
30 4) hydrolyzing the compound of formula (V) in trifluoroacetic acid (TFA) to form methyl carboxypropenylbenzoate, which is then treated with ethyl chloroformate (ECC) and reduced with sodium borohydride (NaBH₄) to obtain the compound of formula (VI);

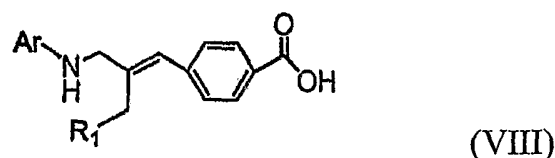
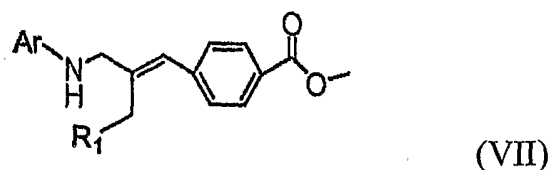
5) reacting the compound of formula (VI) with tetrabromomethane

(CBr₄) in the presence of triphenylphosphine (PPh₃) to form methyl bromomethylpropenylbenzoate, which is refluxed together with an arylamine (ArNH₂) to obtain the compound of formula (VII);

6) hydrolyzing the compound of formula (VII) of formula with an inorganic base to obtain the compound of formula (VIII); and

7) acylating the compound of formula (VIII) with *tert*-butyldimethylsilyloxyamine (NH₂OTBS) in an organic solvent in the presence of N-hydroxy-6-trifluoro benzotriazole (FOBT) and 1-(3-diethylaminopropyl)-3-ethylcarbodiimide hydrochloride (EDC·HCl) and removing the *tert*-butyldimethylsilyl group from the resulting product with a water-soluble inorganic acid to obtain the compound of formula (I):





wherein,

R_1 is hydrogen;

5 R_2 is phenyl which is optionally substituted with one or more substituents selected from the group consisting of hydroxy, C_{1-5} alkyloxy, C_{1-5} alkyl, C_{1-5} alkylamino, cyano, cyanophenyl and mercaptoalkyl; or heteroaryl selected from the group consisting of piperazine, triazole, thiazole, benzothiazole, dibenzofurane, pyridine, quinoline and isoquinoline, the
10 heteroaryl being optionally substituted with one or more substituents selected from the group consisting of halogen, C_{1-5} alkyloxy, amino C_{1-5} alkyloxy, C_{1-5} alkyl, amino C_{1-5} alkyl, C_{1-5} alkylamino, aryl C_{1-5} alkylamino and aryloxy C_{1-5} alkylamino; and

R_3 is hydroxyamino.

15

4. The method of claim 3, wherein the ECC treatment in step 4) is carried out in tetrahydrofuran over an ice bath.

5. The method of claim 3, wherein the reaction with arylamine in step 5)
20 is carried out in acetone or acetonitrile in the presence of potassium carbonate.

6. The method of claim 3, wherein step 6) is carried out in an aqueous alcohol solution in the presence of tetrahydrofuran, and the inorganic base is
25 lithium hydroxide ($LiOH \cdot H_2O$) or sodium hydroxide.

7. The method of claim 3, wherein step 7) is carried out in N,N -dimethylformamide, and the water-soluble inorganic acid is hydrochloric acid

or sulfuric acid.

8. A method for preparing the compound of formula (I), which comprises the steps of:

1) reacting the compound of formula (III) with tribromophosphine (PBr_3) in ethyl ether to obtain the compound of formula (IX);

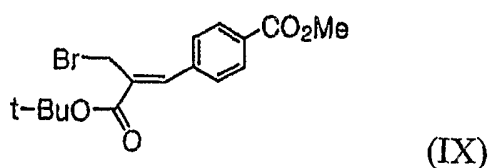
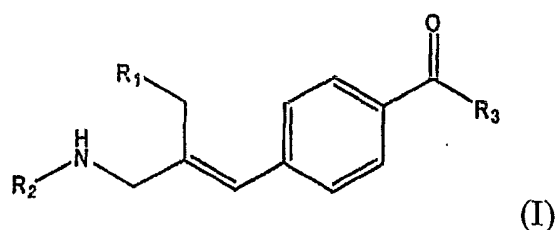
2) reacting the compound of formula (IX) with a nucleophilic agent (R_1H) to obtain a compound of formula (X);

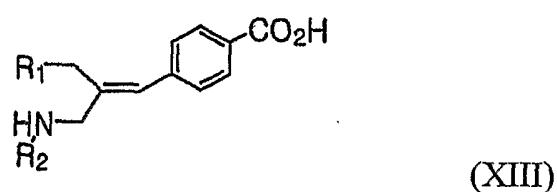
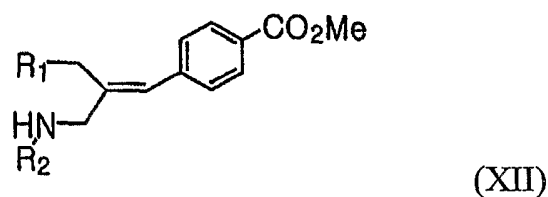
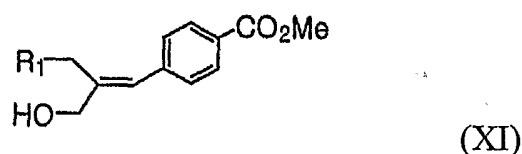
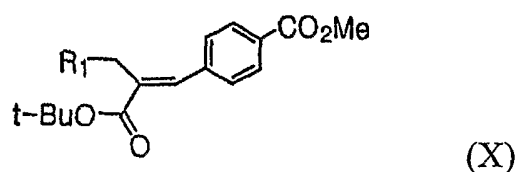
3) hydrolyzing the compound of formula (X) in trifluoroacetic acid (TFA) to form a methyl carboxypropenylbenzoate, which is then treated with ethyl chloroformate (ECC) and is reduced with sodium borohydride (NaBH_4) to obtain a compound of formula (XI);

4) refluxing the compound of formula (XI) with manganese dioxide (MnO_2) in dichloromethane to form an aldehyde, which is then reacted with an arylamine (ArNH_2) or arylalkylamine in the presence of dibutyldichlorotin (Bu_2SnCl_2) and diphenylsilane (Ph_2SiH_2) to obtain a compound of formula (XII);

5) treating the compound of formula (XII) with an inorganic base to obtain a compound of formula (XIII); and

6) acylating the compound of formula (XIII) with *tert*-butyldimethylsilyloxyamine (NH_2OTBS) and removing the *tert*-butyldimethylsilyl group from the resulting product with a water-soluble inorganic acid to obtain the compound of formula (I):





5 wherein,

R₁ is aryloxy or arylmercapto;

10 R₂ is phenyl which is optionally substituted with one or more substituents selected from the group consisting of hydroxy, C₁₋₅ alkyloxy, C₁₋₅ alkyl, C₁₋₅ alkylamino, cyano, cyanophenyl and mercaptoalkyl; or heteroaryl selected from the group consisting of piperazine, triazole, thiazole, benzothiazole, dibenzofurane, pyridine, quinoline and isoquinoline, the heteroaryl being optionally substituted with one or more substituents selected from the group consisting of halogen, C₁₋₅ alkyloxy, amino C₁₋₅ alkyloxy, C₁₋₅ alkyl, amino C₁₋₅ alkyl, C₁₋₅ alkylamino, aryl C₁₋₅ alkylamino and aryloxy C₁₋₅ alkylamino; and

15 R₃ is hydroxyamino.

9. The method of claim 8, wherein step 2) is carried out in acetone solvent in the presence of an organic or inorganic base, and the nucleophilic agent is arylalcohol or arylmercaptan.

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10. The method of claim 8, wherein the ECC treatment in step 3) is carried out in tetrahydrofuran over an ice bath.

11. The method of claim 8, wherein step 5) is carried out in an aqueous alcohol solution, and the inorganic base is lithium hydroxide or sodium hydroxide.

12. The method of claim 8, wherein step 6) is carried out in N,N-dimethylformamide solvent in the presence of N-methanesulfonyloxy-6-trifluoro benzotriazole, and the water-soluble inorganic acid is hydrochloric acid or sulfuric acid.

13. The method of claim 8, wherein the compound of formula (XII) is obtained in step 4) by reacting the compound of formula (XI) with tetrabromomethane (CBr_4) in the presence of triphenylphosphine (PPh_3) to form methyl bromomethylpropenylbenzoate and refluxing the resulting product together with an arylamine or arylalkylamine.

14. The method of claim 13, wherein the amine reaction is carried out in acetone or acetonitrile in the presence of potassium carbonate.

15. A method for preparing the compound of formula (I), which comprises the steps of:

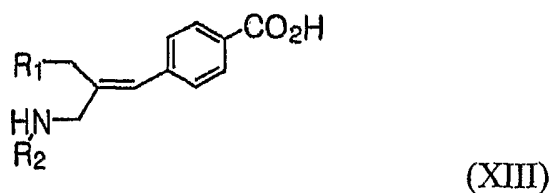
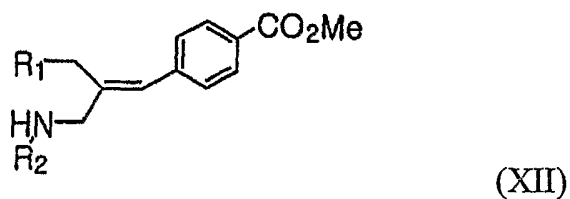
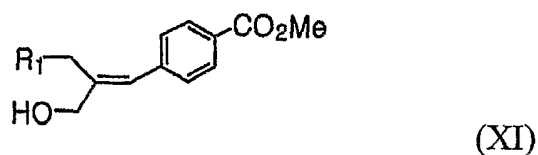
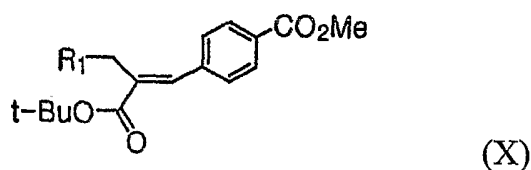
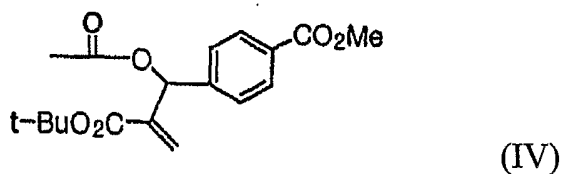
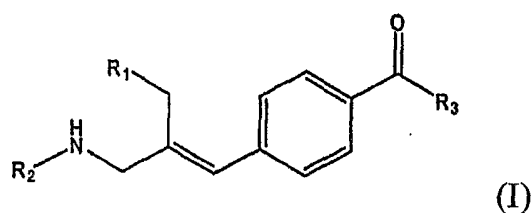
1) reacting the compound of formula (IV) with a nucleophilic agent (R_1H) to obtain a compound of formula (X);

2) hydrolyzing the compound of formula (X) in trifluoroacetic acid (TFA) to form a methyl carboxypropenylbenzoate, which is then treated with ethyl chloroformate (ECC) and reduced with sodium borohydride (NaBH_4) to obtain a compound of formula (XI);

3) reacting the compound of formula (XI) with tetrabromomethane (CBr_4) in the presence of triphenylphosphine (PPh_3) to form a methyl bromomethylpropenylbenzoate, which is refluxed together with an arylamine or arylalkylamine to obtain a compound of formula (XII);

4) treating the compound of formula (XII) with an inorganic base to obtain a compound of formula (XIII); and

5) acylating the compound of formula (XIII) with *tert*-butyldimethylsilyloxyamine (NH₂OTBS) and removing the *tert*-butyldimethylsilyl group from the resulting product with a water-soluble inorganic acid to obtain the compound of formula (I):



wherein,

R₁ is arylimido, alkylimido, arylamido, alkylamido or arylsulfonamido;

R₂ is phenyl which is optionally substituted with one or more

substituents selected from the group consisting of hydroxy, C₁₋₅ alkyloxy, C₁₋₅ alkyl, C₁₋₅ alkylamino, cyano, cyanophenyl and mercaptoalkyl; or heteroaryl selected from the group consisting of piperazine, triazole, thiazole, benzothiazole, dibenzofurane, pyridine, quinoline and isoquinoline, the heteroaryl being optionally substituted with one or more substituents selected from the group consisting of halogen, C₁₋₅ alkyloxy, amino C₁₋₅ alkyloxy, C₁₋₅ alkyl, amino C₁₋₅ alkyl, C₁₋₅ alkylamino, aryl C₁₋₅ alkylamino and aryloxy C₁₋₅ alkylamino; and

R₃ is hydroxyamino.

16. The method of claim 15, wherein step 1) is carried out using an organic or inorganic base, and the nucleophilic agent is selected from the group consisting of alkylamide, arylamide, alkylimide, arylimide or arylsulfonamide.

17. The method of claim 15, wherein step 2) is carried out in tetrahydrofuran over an ice bath

18. The method of claim 15, wherein the amine reaction in step 3) is carried out in acetone or acetonitrile in the presence of potassium carbonate.

19. The method of claim 15, wherein step 4) is carried out in an aqueous alcohol solution, and the inorganic base is lithium hydroxide or sodium hydroxide.

20. The method of claim 15, wherein step 5) is carried out in N,N-dimethylformamide in the presence of N-methanesulfonyloxy-6-trifluorobenzotriazole, and the water-soluble inorganic acid is hydrochloric acid or sulfuric acid.

21. An anti-cancer composition comprising the compound of formula (I) of claim 1 as an active ingredient and a pharmaceutically acceptable carrier.

22. A pharmaceutical composition for preventing or treating a disease caused by excessive histone deacetylase activity, comprising the compound of formula (I) of claim 1 as an active ingredient and a pharmaceutically acceptable carrier.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2005/002864

A. CLASSIFICATION OF SUBJECT MATTER**IPC7 C07C 239/14**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C07C, C07D, A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Patents and Applications for Inventions since 1975Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
CAS on-line(REGISTRY, CAplus)**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 04/64727 (GEORGETOWN UNIV.) 5 AUGUST 2004 See the whole document	1-22
A	JANINE ARTS et al., 'Histone deacetylase inhibitor: from chromatin remodeling to experimental cancer therapeutics', Current Medicinal Chemistry, 2003, 10, pp. 2343-2350 See the whole document	1-22
A	MINORU YOSHIDA et al., 'From discovery to the coming generation of histone deacetylase inhibitors', Current Medicinal Chemistry, 2003, 10, pp. 2351-2358 See the whole document	1-22
A	GILIANE BOUCHAINE et al., 'Novel hydroxamate and anilide derivatives as potent histone deacetylase inhibitor: synthesis and antiproliferative evaluation', Current Medicinal Chemistry, 2003, 10, pp. 2359-2372 See the whole document -----End of documents-----	1-22



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

02 DECEMBER 2005 (02.12.2005)

Date of mailing of the international search report

02 DECEMBER 2005 (02.12.2005)

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Telephone No. 82-42-481-8148



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2005/002864

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 04/64727 A2	05.08.2004	US 2005222013 A1	06.10.2005