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(54) Title: 5-LIPOXYGENASE INHIBITORS

(57) Abstract: The present invention relates to sulfonamides derivatives as 5-lipoxygenase (5-LO) inhibitors and a process for their synthesis. The present invention also relates to pharmacological compositions containing these sulfonamides derivatives, as well as methods of treating bronchial asthma, chronic obstructive pulmonary disease, rheumatoid arthritis, multiple sclerosis, Type I diabetes, psoriasis, allograft rejection, inflammatory bowel disease, ulcerative colitis, acne, atherosclerosis, cancer, pruritis, allergic rhinitis and other inflammatory and/or autoimmune disorders.

# 5-LIPOXYGENASE INHIBITORS

## Field of the Invention

The present invention relates to sulfonamides derivatives as 5-lipoxygenase (5-LO) inhibitors and process for their synthesis. The present invention also relates to pharmacological compositions containing these sulfonamides derivatives, as well as methods of treating bronchial asthma, chronic obstructive pulmonary disease, rheumatoid arthritis, multiple sclerosis, Type I diabetes, psoriasis, allograft rejection, inflammatory bowel disease, ulcerative colitis, acne, atherosclerosis, cancer, pruritis, allergic rhinitis and other inflammatory and/or autoimmune disorders.

## Background of the Invention

5-Lipoxygenase (5-LO) is a key enzyme that oxidizes arachidonic acid into biologically active leukotrienes, namely cysteinyl leukotrienes and leukotriene B4 (*Clin. Exp. Allergy Rev.*, 1, p. 196 (2001)). Leukotrienes play important role in the pathophysiology of inflammatory/allergic diseases including bronchial asthma (*Clin. Exp. Allergy Rev.*, 1, p. 264 (2001)), allergic rhinitis (*Clin. Exp. Allergy Rev.*, 1, p. 235 ( 2001)), urticaria, atopic dermatitis (*Clin. Exp. Allergy Rev.* 1, p. 305, (2001)), chronic obstructive pulmonary disease (COPD) (*Eur. Respir. J.*, 22, p. 926 (2003)) etc. Incidence of allergic/inflammatory diseases are on the rise globally (*Emerging Therapeutic Targets,* 3, p. 229 (1999)); *Expert Opin. Investigational Drugs*, 10, p. 1361 (2000)).

A variety of stimuli, namely antigen-antibody reaction, cold or hyperosmotic shock etc., that elevates intracellular calcium level, can evoke arachidonic acid release from cell membrane under the influence of cytosolic phospholipase A2. Arachidonic acid is transferred to nuclear membrane by 5-LO binding protein (FLAP) and acted upon by 5-LO enzyme to generate 5-hydroperoxyeicosatetraenoic acid (HPETE). HPETE is converted to LTA4 by 5-LO. Depending upon cell type, LTA4 is converted to either cysteinyl leukotrienes and/or leukotriene B4 (*Clin. Exp. Allergy Rev.*, 1, p. 196 (2001); *Curr. Drug Targets – Inflammation & Allergy,* 1, p. 23 (2002); *Drug Safety*, 26, p. 484 (2003)).

Leukotrienes are generated by a variety of inflammatory cell types. Neutrophils and monocytes generate LTB4, whereas mast cells, basophils, eosinophils and bronchial epithelial cells produce cysteinyl leukotrienes. LTB4 acts as a chemoattractant for neutrophils through specific cell surface receptors. Cysteinyl leukotrienes, which include LTC4, LTD4 and LTE4, act on CysLT1 and CysLT2 receptors and increase bronchial smooth

muscle contractility, promote mucosal secretion, increase vascular permeability and encourage eosinophil recruitment. (*Am. J. Respir. Critic Care Med.*, 157, S210 (1998); *Thorax,* 55, S32 (2000); *Clin. Exp. Allergy Rev.*, 1, p. 196 (2001); *Clin. Exp. Allergy Rev.*, 1, p. 220 (2001); *Drug Safety*, 26, p. 484 (2003)).

There is evidence suggesting that cysteinyl leukotrienes can increase airway smooth muscle contractility in preclinical (*Am. J. Respir. Crit. Care Med.*, 157, S214 (1998)) and clinical studies (*Clin. Exp. Allergy Rev.*, 1, p. 220 (2001)). Inhalation of leukotrienes also increases influx of inflammatory cells in the airway of animals (*Clin. Exp. Allergy Rev.*, 1, p. 220 (2001)) and humans (*Am. J. Respir Crit. Care Med.*, 157, S210 (1998)). Efficacy of leukotriene biosynthesis inhibitors and leukotriene receptor antagonists has been tested in numerous trials involving asthma patients (*Clin. Exp. Aller. Review* 1, p. 254 (2001); *Drug Safety,* 26, p. 483 (2003); *NEJM*, 340, p. 197 (1999); *Am. J. Respir. Crit. Care Med.*, 157, S233 (1998)). Similarly, evidence is emerging based on animal and human data that leukotriene pathway modulators can play a role in arthritis (*J. Pharmacol. Exp. Ther.*, 285, p. 946 (1998)) allergic rhinitis and urticaria (*Clin. Exp. Aller. Review,* 1, p. 23 (2001)), but this needs to be explored further.

5-LO inhibitors can be classified according to the mechanism of enzyme inhibition. Redox inhibitors like phenidone, AA-861, L-656,224 or BW-755C reduce the active site iron of the enzyme into the ferrous form and keep the enzyme in its inactive state. However, they interact with other biological redox system, which lead to side effects like methaemoglobin formation (*J. Med. Chem.*, 35, p. 1299-1318 (1992)). Iron ligand inhibtors represent a class of drugs that inhibit leukotriene synthesis by chelating the iron at the catalytic center of 5-LO. Most of the compounds of this class are hydroxamic acid or *N*-hydroxyurea derivatives, such as the orally active compound zileuton and BWA4C (*Br. J. Pharmacol.*, 94, p. 528-539 (1988)). *N*-hydroxyurea and hydroxamates are weak redox active compounds and it is presumed that the 5-LO inhibitory action of these drugs might be related in part to these properties (*Biochem. J.*, 274, p. 287–292 (1991)). In order to avoid the drawbacks associated with redox and iron chelators, efforts towards the non-redox inhibitor class is essential. Non-redox type inhibitors compete with arachidonic acid or lipid hydroperoxide (LOOH) for binding to 5-LO without redox properties. A sequence of methoxyalkylthiazoles and

methoxytetrahydropyrans has been identified as potent 5-LO inhibitors acting in non-redox fashion. (*Expert Opin. Ther. Pat.*, 120, p. 355-75 (2010)).

Several leukotriene receptor antagonists, montelukast, zafirlukast, and pranlukast, and one 5-LO inhibitor, zileuton, have already been launched in the market for bronchial asthma after both categories of molecules showed efficacy in clinical trials. Zileuton, a redox and iron chelator 5-LO inhibitor, and leukotriene receptor antagonists are presently used in the long term treatment of asthma. Recent data implicate 5-LO pathway in pain signalling. Recently, 5-LO expression in the central nervous system (CNS) and in pain efficacy of a new class of non-redox, non iron chelating 5-LO inhibitor is reported. CJ-13610, 4-(3-(4-(2-methyl-1*H*-imidazol-1-yl)phenylthio)phenyl)-tetrahydro-2*H*-pyran-4-carboxamide, demonstrated antihyperalgesic activity in inflammatory pain models including the acute carrageenan model and the chronic inflammatory model using complete Freund's adjuvant (*J. Pharm.*, 617(1-3), p. 59-67 (2009)). Recently, 2-amino-5-hydroxy-1*H*-indoles have been found to be efficient 5-LO inhibitors in cell-based and cell-free assays. Structural optimization led to novel benzo[*g*]indole-3-carboxylates exemplified by ethyl 2-(3-chlorobenzyl)-5-hydroxy-1*H*-benzo[*g*]indole-3-carboxylate which inhibits 5-LO activity in human neutrophils and recombinant human 5-LO with $IC_{50}$ values of 0.23 and 0.086 μM, respectively. It efficiently blocks 5-LO product formation in human whole blood assays ($IC_{50}$ = 0.83-1.6 μM) and significantly prevented leukotriene B4 production in pleural exudates of carrageenan-treated rats, associated with reduced severity of pleurisy. Together, on the basis of their high potency against 5-LO and the marked efficacy in biological systems, these novel and straightforward benzo[g]indole-3-carboxylates may have potential as anti-inflammatory therapeutics (*J. Med. Chem.*, 52(11), p. 3474 (2009)). ZLJ-6 potently inhibited 5-LO and cyclooxygenase, and blocked the production of LTB4, TXB2 and PGE2. Thus ZLJ-6 is an ideal substitute for classical non-steroidal anti-inflammatory therapy (*Eur. J. Pharm.* 607(1-3), p. 244-250 (2009)). Recently, it was reported by Merck, a series of novel 5-LO inhibitors that are potent, selective and orally bioavailable. Their major focus was to preserve the 5-LO potency while reducing the affinity for the hERG potassium channel. This work culminated in the identification of 4-(4-fluorophenyl)-7-[({5-[(2*S*)-1,1,1-trifluoro-2-hydroxybutan-2-yl]-1,3,4-oxadiazol-2-yl}amino)methyl]-2*H*-chromen-2-one MK-0633 (setileuton) was selected for clinical development for the treatment of respiratory diseases (*Med. Chem.*

*Lett.*, 2010, 1(4), p. 170–174).

In case of COPD, the leukotriene antagonists have exhibited only symptomatic relief. Inhibitors of 5-LO are expected to have a greater potential to exhibit efficacy in COPD because of their inhibitory effect on LTB4 mediated processes along with inhibition of cysteinyl leukotriene release. However, zileuton, the commercially available 5-LO inhibitor, is associated with poor pharmacokinetic properties and adverse events, like elevation of hepatic transaminase levels. This has prompted the search for novel inhibitors of 5-LO with improved pharmacokinetic profiles and reduced adverse effects.

U.S. Patent Application No. 2003/0232859 discloses new cannabinoid receptor ligands, useful for the treatment of diseases caused by inflammation and immunomodulatory irregularities, *e.g.*, rheumatoid arthritis, multiple sclerosis, glaucoma, diabetes or sepsis. U.S. Patent Application No. 2002/0193596 discloses new substituted phenyl derivatives are protein isoprenyl transferase inhibitors, useful in the treatment of cancer and restenosis. WO 2007/015871 discloses new salt of 4-methyl-N-(3-(4-methyl-imidazol-1-yl)-5-trifluoromethyl-phenyl)-3-(4-pyridin-3-yl-pyrimidin-2-ylamino)-benzamide, is useful for treating a disease, which responds to an inhibition of protein kinase activity. WO 2004/071447 discloses azoles which may be useful as inhibitors of protein tyrosine phosphatases (PTPases). U.S.Patent Application No. 2007/0037789 discloses new fluoro substituted 2-oxo-azepan derivatives useful for treating, *e.g.*, Alzheimer's disease and common cancers including cervical carcinomas and breast carcinomas. U.S. Patent Application No. 2008/0312231 discloses new substituted sulfonamide derivatives are human bradykinin-1 receptor modulators useful to treat, *e.g.*, pain, depression, diarrhea, pruritus, migraine, diabetes, neurological diseases, skin inflammation, rheumatic diseases and adiposis. U.S. Patent No. 7,183,297 discloses new biphenyl derivatives are p38 kinase inhibitors. U.S. Patent Application No. 2005/0153980 discloses new aminoalkyl-substituted indole or indoline derivatives useful, *e.g.*, for treating neurodegenerative diseases, depression or cerebral ischemia are excitatory aminoacid antagonists.

In view of the above, there remains a need for novel derivatives as 5-LO inhibitors having anti-inflammatory activity.

## Summary of the Invention

The present invention relates to sulfonamides derivatives which act as 5-LO inhibitors. Also provided are processes for synthesizing such compounds. Pharmaceutical compositions containing such compounds are provided together with the pharmaceutically acceptable carriers or diluents, which can be useful as 5-LO inhibitors. These pharmaceutical compositions may be administered or co-administered by a wide variety of routes including, for example, oral, topical, rectal, intranasal, or by parenteral route. The composition may also be administered or co-administered in slow release dosage forms.

The sulfonamides derivatives of the present invention and the pharmaceutical compositions containing these derivatives relate to 5-LO inhibitors useful for inhibition and prevention of inflammation and associated pathologies, including inflammatory and autoimmune diseases, for example, bronchial asthma, chronic obstructive pulmonary disease, rheumatoid arthritis, Type I diabetes, multiple sclerosis, allograft rejection, psoriasis, inflammatory bowel disease, ulcerative colitis, acne, atherosclerosis, cancer, pruritis, allergic rhinitis and other inflammatory and/or autoimmune disorders.

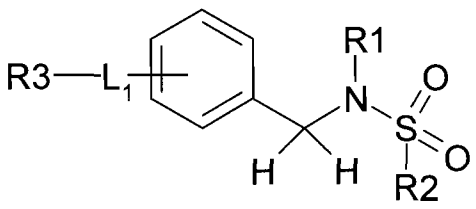
Pharmaceutically acceptable salts or solvates of such compounds are also provided as well as pharmaceutical compositions comprising such compounds, and their pharmaceutically acceptable salts or solvates.

Therapeutically effective amounts of one or more compounds of the present invention can be used in combination with one or more other therapeutic agents, for example, COX inhibitors, BLTR antagonists, FLAP inhibitors, muscarinic receptor antagonists, β2-agonists, p38 MAP Kinase inhibitors, PDE-IV inhibitors or corticosteroids.

Other objects will be set forth in accompanying description and in the part will be apparent from the description or may be learnt by the practice of the invention.

## Detailed Description of the Invention

The present invention relates to compounds having the structure of Formula 1 as 5-LO inhibitor



**Formula 1**

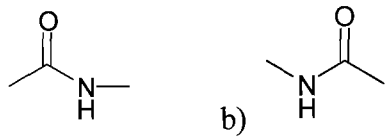
pharmaceutically acceptable salts, pharmaceutically acceptable solvates, prodrugs, metabolites, or *N*-oxide thereof,

wherein

**$R_1$** is phenyl, pyrazole, pyrazine, pyrimidine, or $C_{6-12}$heterocyclyl substituted with one or more substitutents selected from $R_4$;

**$R_2$** is selected from $C_{1-6}$alkyl, phenyl, cyclopropyl, or 1-methyl-1*H*-imidazole;

**$L_1$** is



a) b)

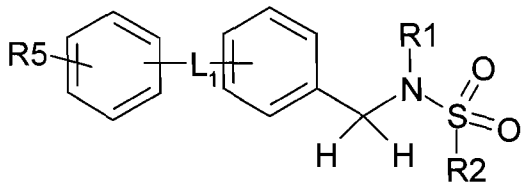
**$R_3$** is phenyl, pyridine, pyrazine, pyrimidine, triazine, tetrazole, thiazole, imidazole, oxazole 2,3-dihydro-1*H*-indene, or 1,3-benzodioxole, substituted with one or more substitutents selected from $R_5$;

**$R_4$** is indpendently hydrogen, $C_{1-6}$alkyl, halogen, nitro, cyano, $-CF_3$, $-OCF_3$, $-OCHF_2$, alkoxy, -Oaryl, thioalkyl, $-NR_fR_q$, $-CONR_fR_q$, $-COOR_f$, $-OR_d$, or $-COR_f$;

**$R_5$** is independently hydrogen, $C_{1-6}$alkyl, halogen, nitro, cyano, $-CF_3$, $-OCF_3$, $-OCHF_2$, $-NR_fR_q$, phenyl, $-SR_d$, thiophenyl, $-CONR_fR_q$, $-COOR_f$, $-OR_d$, $-COR_f$ wherein $R_d$ is hydrogen, aryl, alkylaryl, $C_{1-5}$alkyl, $C_{1-3}$alkyl$COOR_f$, or $C_{1-3}$alkylOH;

$R_f$ and $R_q$ are independently hydrogen, alkyl, or alkenyl.

In another embodiment, the current invention provides a compound of Formula 1A:




**Formula 1A**

wherein

$R_1$, $R_2$, $R_5$ and $L_1$ are same as defined earlier.

The following definitions apply to terms as used herein:

The term "*alkyl*" refers to a straight or branched fully saturated hydrocarbon chain which is optionally substituted by one or more halo atoms, and which has 1 to 20 carbon atoms, unless otherwise specified. This term is exemplified by groups such as methyl, ethyl, *n*-propyl, *iso*-propyl, *n*-butyl, *iso*-butyl, *t*-butyl, *n*-hexyl, *n*-decyl, *n*-tetradecyl, trifluoromethyl, chloroethyl, and the like.

The term "*alkenyl*", unless otherwise specified, refers to a branched or unbranched unsaturated hydrocarbon group containing at least one double bond with *cis* or *trans* geometry and preferably having 2 to 20 carbon atoms. Examples of alkenyl group include ethenyl, 2-propenyl and isopropenyl.

The term "*cycloalkyl*" refers to a non aromatic cyclic group having 3 to 20 ring carbon atoms and form one to three rings and may optionally contain one or more olefinic bonds. Polycyclic ring systems may be a spiro, fused or bridged arrangement. Cycloalkyl groups include, by way of example cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl, cyclopentenyl, cyclohexenyl, adamantlyl, bicyclo[*2.2.1*]heptanyl, bicyclo[*2.2.2*]octane, tricycle[*3.3.1.1*]decane, and the like.

The term "*aryl*" refers to an aromatic system having from 6 to 14 carbon atoms and up to three rings which may be fused or directly joined. Representative examples of such aryl group include, but are not limited to, phenyl, biphenyl, naphthyl, phenanthrene, anthracenyl, azulenyl, and indanyl. Aryl group may also comprise one or more rings which are not fully aromatic and examples of such system are indane, indene, 2, 3 dihydrobenzofuran and 1,2,3,4-tetrahydronaphthalene

The term "*aryloxy*" denotes the group O-aryl, wherein aryl is as defined above.

The term "*heteroaryl*" refers to an aromatic system having from 5 to 14 membered carbon atoms and up to three rings, which may be fused or directly joined, and containing from one to eight heteroatoms selected from N, O and S. Examples of heteroaryl groups are quinolinyl, pyrrolyl, thiophenyl, oxadiazolyl, benzoimidazolyl, thiadiazolyl, pyridazinyl, isoxazolyl, triazinyl, furanyl, benzofuranyl, indolyl, benzothiazolyl, benzoxazolyl, and the like.

The term "*heterocyclyl*" refers to a non-aromatic monocyclic or polycyclic ring system, which may be fused, spiro or bridged having 3 to 12 ring atoms and up to eight heteroatoms selected from N, O and S. Examples of a heterocyclyl ring system include piperidine, morpholine, piperazine, isoquinoline, oxazolidine, tetrahydrofuran,

dihydrofuran, dihydropyridine, dihydroisoxazole, dihydrobenzofuran, azabicyclohexane, dihydroindole, tetrahydroquinoline, pyrrolidine, azepine, azetidine, aziridine, tetrahydropyridine, benzthiazine, benzoxazinyl, isoindoline, azabicycle[*3.1.0*]hexyl, phenoxazine, tetrahydropyran, 1,4-dioxane, and the like.

The terms "*cycloalkylalkyl*", "*arylalkyl*", "*heteroarylalkyl*", "*heterocyclylalkyl*" refer respectively to cycloalkyl, aryl, heteroaryl or heterocyclyl group linked the remainder of the molecule *via* an alkyl group.

The term *"amino"* refers to $-NH_2$.

The term "*halogen*" refers to -F, -Cl, -Br, and –I.

The term "*protecting group*" is used herein to refer to known moieties which have the desirable property of preventing specific chemical reaction at a site on the molecule undergoing chemical modification intended to be left unaffected by the particular chemical modification. Also the term "protecting group", unless otherwise specified, may be used with groups such as hydroxy, amino, and carboxy. The examples of such groups are found in T.W. Greene and P.G.M. Wuts, "Protective Groups in Organic Synthesis", 3rd edition, John Wiley and Sons Inc., New York, (1999).

The term "*pharmaceutically acceptable salts*" refers to the inorganic and organic base or acid addition salts of compounds of present invention. These salts can be prepared *in situ* during the final isolation and purification of the compounds or by separately reacting the purified compound in its free form with a suitable organic or inorganic base or acid and isolating the salt thus obtained. Representative salts include, but are not limited to, trifluoroacetate, hydrochloride, acetate, fumarate, phosphate, tosylate, hydrobromide, sulfate, bisulfate, nitrate, oxalate, valerate, oleate, palmitate, stearate, laurate, borate, benzoate, lactate, citrate, maleate, succinate, tartrate, naphthylate, mesylate, glucoheptonate, lactobionate, laurylsulfonate, and the like. Where the compounds carry acidic moiety, the salts derived from inorganic bases include, but are not limited to, lithium, sodium, potassium, calcium, magnesium, zinc, aluminium, as well as, non-toxic ammonium, quaternary ammonium and amine cations, including, but not limited to ammonium, tetramethylammonium, tetraethylammonium, methylamine, triethylamine, ethylamine, diethylamine, and the like. The salts derived from organic bases include, but are not limited to, salts of natural or synthetic amino acids, betaine, caffeine, 2-diethylaminoethanol, *N*-ethylmorpholine, glucosamine, dibenzylethylene-diamine,

chloroprocaine, choline, diethanolamine, ethylenediamine, piperazine, procaine, purine, tromethamine, and the like. The free base form may be regenerated by contacting the salt form with a base. While the free base form may differ from the salt form in terms of physical properties, such as solubility, the salts are equivalent to their respective free bases for the purposes of the present invention.

The term "*pharmaceutically acceptable solvates*" refers to solvates with water (*i.e.*, hydrates) or pharmaceutically acceptable solvents, for example, solvates with ethanol, and the like.

The disclosed compounds may be metabolised *in vivo* and these metabolites are also encompassed within the scope of the invention.

The term "*polymorphs*" includes all crystalline forms, as well as amorphous forms for compounds described herein, and as such are included in the scope of the present invention.

In another embodiment, the invention encompasses compounds of present invention which may include but are not limited to the following, for example,

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-(4-methylphenyl)acetamide (Compound No. 1);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 2);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 3);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 4);

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 5);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 6);

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 7);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 8);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-(trifluoromethyl)benzamide (Compound No. 9);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxy benzamide (Compound No. 10);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3,4-dimethoxybenzamide (Compound No. 11);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 12);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,4-difluorobenzamide (Compound No. 13);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 14);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 15);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-difluorobenzamide (Compound No. 16);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluoro benzamide (Compound No. 17);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-fluoro-3-methyl benzamide (Compound No. 18);

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-6-fluoro benzamide (Compound No. 19);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethoxy)benzamide (Compound No. 20);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethyl)benzamide (Compound No. 21);

2,5-Dichloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 22);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxy benzamide (Compound No. 23);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3,5-dimethoxybenzamide (Compound No. 24);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methoxy-4-methyl benzamide (Compound No. 25);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,3-dimethylbenzamide (Compound No. 26);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3,5-dimethylbenzamide (Compound No. 27);

3-(Dimethylamino)-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 28);

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 29);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-propylbenzamide (Compound No. 30);

4-*tert*-Butyl-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 31);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 32);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,4,6-trifluorobenzamide (Compound No. 33);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl)benzamide (Compound No. 34);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 35);

*N*-(2,5-Diethoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 36);

*N*-(2,5-Difluorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 37);

*N*-(2,5-Dimethoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 38);

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 39);

*N*-[2-(Benzyloxy)phenyl]-4-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 40);

*N*-(2-Chloro-5-methoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 41);

*N*-(2-Chlorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 42);

*N*-[2-(Difluoromethoxy)phenyl]-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 43);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl) benzamide (Compound No. 44);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluoro-5-methylphenyl)benzamide (Compound No. 45);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluoro-5-nitrophenyl)benzamide (Compound No. 46);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-fluoro-5-(trifluoromethyl)phenyl]benzamide (Compound No. 47);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluorophenyl) benzamide (Compound No. 48);

*N*-(5-*tert*-Butyl-2-methoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 49);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-methoxy-5-(trifluoromethyl)phenyl]benzamide (Compound No. 50);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-phenoxyphenyl)benzamide (Compound No. 51);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(propan-2-yl)phenyl]benzamide (Compound No. 52);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(2-methylpropyl)phenyl]benzamide (Compound No. 53);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(trifluoromethoxy)phenyl]benzamide (Compound No. 54);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(trifluoromethyl)phenyl]benzamide (Compound No. 55);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methyl benzamide (Compound No. 56);

*N*-(5-Chloro-2-methoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 57);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-methoxy-2-methylphenyl)benzamide (Compound No. 58);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methylphenyl) benzamide (Compound No. 59);

*N*-(Biphenyl-2-yl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 60);

*N*-(2-Bromophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 61);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(methylsulfanyl) phenyl]benzamide (Compound No. 62);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(phenylsulfanyl) phenyl]benzamide (Compound No. 63);

*N*-(5-Chloro-2-fluorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 64);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-fluoro-2-methylphenyl)benzamide (Compound No. 65);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(4-methoxybiphenyl-3-yl)benzamide (Compound No. 66);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methyl benzamide (Compound No. 67);

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl) benzamide (Compound No. 68);

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 69);

*N*-(5-Chloro-2-methylphenyl)-4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino] methyl}benzamide (Compound No. 70);

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl)benzamide (Compound No. 71);

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino] methyl}benzamide (Compound No. 72);

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl) benzamide (Compound No. 73);

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 74);

*N*-(5-Chloro-2-methylphenyl)-4-{[(3,4-dimethylphenyl)(propylsulfonyl)amino] methyl}benzamide (Compound No. 75);

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl) benzamide (Compound No. 76);

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(propylsulfonyl) amino]methyl}benzamide (Compound No. 77);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl) benzamide (Compound No. 78);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 79);

*N*-(2,5-Diethoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 80);

*N*-(2,5-Difluorophenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 81);

*N*-(2,5-Dimethoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 82);

*N*-(2,5-Dimethylphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 83);

*N*-[2-(Benzyloxy)phenyl]-3-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 84);

*N*-(2-Chloro-5-methoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 85);

*N*-(2-Chlorophenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 86);

*N*-[2-(Difluoromethoxy)phenyl]-3-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 87);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl)benzamide (Compound No. 88);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluoro-5-methylphenyl)benzamide (Compound No. 89);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluorophenyl) benzamide (Compound No. 90);

*N*-(5-*tert*-Butyl-2-methoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 91);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-methoxy-5-(trifluoromethyl)phenyl]benzamide (Compound No. 92);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-phenoxyphenyl)benzamide (Compound No. 93);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(2-methylpropyl)phenyl]benzamide (Compound No. 94);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-propylphenyl)benzamide (Compound No. 95);

*N*-(Biphenyl-2-yl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 96);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(methylsulfanyl)phenyl]benzamide (Compound No. 97);

*N*-(5-Chloro-2-methoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 98);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-fluoro-2-methylphenyl)benzamide (Compound No. 99);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-methoxy-2-methylphenyl)benzamide (Compound No. 100);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methylphenyl) benzamide (Compound No. 101);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(4-methoxybiphenyl-3-yl)benzamide (Compound No. 102);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 103);

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 104);

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 105);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 106);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 107);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 108);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 109);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethoxy)benzamide (Compound No. 110);

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 111);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 112);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 113);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-methylbenzamide (Compound No. 114);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 115);

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 116);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethoxy)benzamide (Compound No. 117);

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 118);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 119);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 120);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 121);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 122);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-5-fluoro-2-methoxybenzamide (Compound No. 123);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 124);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 125);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 126);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 127);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 128);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 129);

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 130);

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 131);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 132);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 133);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 134);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 135);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethoxy)benzamide (Compound No. 136);

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 137);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 138);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 139);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-methylbenzamide (Compound No. 140);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 141);

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 142);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethoxy)benzamide (Compound No. 143);

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 144);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 145);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 146);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 147);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-5-fluoro-2-methoxybenzamide (Compound No. 148);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 149);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 150);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 151);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-5-fluoro-2-methoxybenzamide (Compound No. 152);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 153);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 154);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 155);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 156);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 157);

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 158);

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 159);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 160);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 161);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 162);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 163);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethoxy)benzamide (Compound No. 164);

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 165);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino] methyl}phenyl)-2-methylbenzamide (Compound No. 166);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-4-methylbenzamide (Compound No. 167);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 168);

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 169);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethoxy)benzamide (Compound No. 170);

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 171);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 172);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[4-(trifluoromethoxy) phenyl]benzamide (Compound No. 173);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(3-fluorophenyl) benzamide (Compound No. 174);

*N*-(4-*tert*-Butylphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 175);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-phenylbenzamide (Compound No. 176);

*N*-(4-Bromophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 177);

*N*-(3-Bromophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 178);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(3-methoxyphenyl) benzamide (Compound No. 179);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(4-methoxyphenyl) benzamide (Compound No. 180);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(3-methylphenyl)benzamide (Compound No. 181);

*N*-(3-Chlorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 182);

*N*-(4-Chlorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 183);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 184);

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 185);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-phenoxybenzamide (Compound No. 186);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 187);

3-Bromo-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 188);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethoxy)benzamide (Compound No. 189);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 190);

4-Bromo-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 191);

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 192);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethyl)benzamide (Compound No. 193);

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl) benzamide (Compound No. 194);

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl) benzamide (Compound No. 195);

*N*-(2,3-Dihydro-1*H*-inden-1-yl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 196);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-difluorobenzamide (Compound No. 197);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,3-dimethoxybenzamide (Compound No. 198);

2,5-Dichloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 199);

3-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 200);

5-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 201);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 202);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 203);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 204);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 205);

2-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 206);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 207);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 208);

2-Cyano-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 209);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 210);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-ethoxybenzamide (Compound No. 211);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 212);

3-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 213);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-dimethylbenzamide (Compound No. 214);

5-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 215);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-(trifluoromethoxy)benzamide (Compound No. 216);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 217);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl) benzamide (Compound No. 218);

*N*-(3,4-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 219);

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino} methyl)phenyl]-2-ethoxybenzamide (Compound No. 220);

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino} methyl)phenyl]-2-fluorobenzamide (Compound No. 221);

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino} methyl)phenyl]-2,5-dimethoxybenzamide (Compound No. 222);

3-Chloro-*N*-[4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl] amino}methyl)phenyl]-4-methoxybenzamide (Compound No. 223);

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino} methyl)phenyl]-2-methoxybenzamide (Compound No. 224);

5-Chloro-*N*-[4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)phenyl]-2-methoxybenzamide (Compound No. 225);

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 226);

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 227);

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 228);

3-Chloro-*N*-(4-{[(cyclopropylsulfonyl)(3,4-dimethylphenyl)amino] methyl}phenyl)-4-methoxybenzamide (Compound No. 229);

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 230);

5-Chloro-*N*-(4-{[(cyclopropylsulfonyl)(3,4-dimethylphenyl)amino] methyl}phenyl)-2-methoxybenzamide (Compound No. 231);

*N*-(4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 232);

*N*-(4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 233);

*N*-(4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 234);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 235);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 236);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl) benzamide (Compound No. 237);

4-{[2,3-Dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}-*N*-(2,5-dimethoxyphenyl)benzamide (Compound No. 238);

*N*-(2,5-Diethoxyphenyl)-4-{[2,3-dihydro-1*H*-inden-5-yl(methylsulfonyl) amino]methyl}benzamide (Compound No. 239);

4-{[2,3-Dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}-*N*-[2-(trifluoromethoxy)phenyl]benzamide (Compound No. 240);

*N*-(5-Chloro-2-methoxyphenyl)-4-{[2,3-dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}benzamide (Compound No. 241);

4-{[2,3-Dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl)benzamide (Compound No. 242);

*N*-(2-Chlorophenyl)-4-{[2,3-dihydro-1*H*-inden-5-yl(methylsulfonyl) amino]methyl}benzamide (Compound No. 243);

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl)benzamide (Compound No. 244);

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-ethoxyphenyl)benzamide (Compound No. 245);

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-methoxyphenyl)benzamide (Compound No. 246);

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 247);

*N*-(5-Chloro-2-methylphenyl)-4-{[(cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}benzamide (Compound No. 248);

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2,5-dimethylphenyl)benzamide (Compound No. 249);

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-ethylphenyl)benzamide (Compound No. 250);

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl)benzamide (Compound No. 251);

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 252);

*N*-(5-Chloro-2-methylphenyl)-4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino] methyl}benzamide (Compound No. 253);

4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)-*N*-(2-methoxy phenyl)benzamide (Compound No. 254);

4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 255);

*N*-(5-Chloro-2-methylphenyl)-4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl] amino}methyl)benzamide (Compound No. 256);

4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)-*N*-(2-ethylphenyl)benzamide (Compound No. 257);

*N*-(2,5-Dimethylphenyl)-4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)benzamide (Compound No. 258);

*N*-(2,3-Dihydro-1*H*-inden-5-yl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 259);

*N*-(2,3-Dihydro-1*H*-inden-1-yl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 260);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-1,3-benzodioxole-5-carboxamide (Compound No. 261);

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl) benzamide (Compound No. 262);

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino] methyl}benzamide (Compound No. 263);

*N*-(2,3-Dihydro-1*H*-inden-5-yl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 264)

or its pharmaceutically acceptable salts or solvates.

The compound of general Formula 1 will usually be provided as a pharmaceutical composition and therefore in a further embodiment of the invention there is provided a pharmaceutical composition comprising therapeutically effective amounts of one or more compounds of general Formula 1 together with one or more pharmaceutically acceptable carriers, excipients, or diluents.

In another embodiment, provided herein, are methods for treating or preventing conditions caused by inflammation and associated pathologies, where the disease or conditions aer mediated through 5-LO comprising administering to a mammal in need thereof a therapeutically effective amount of one or more compounds of Formula 1 and their pharmaceutical compositions.

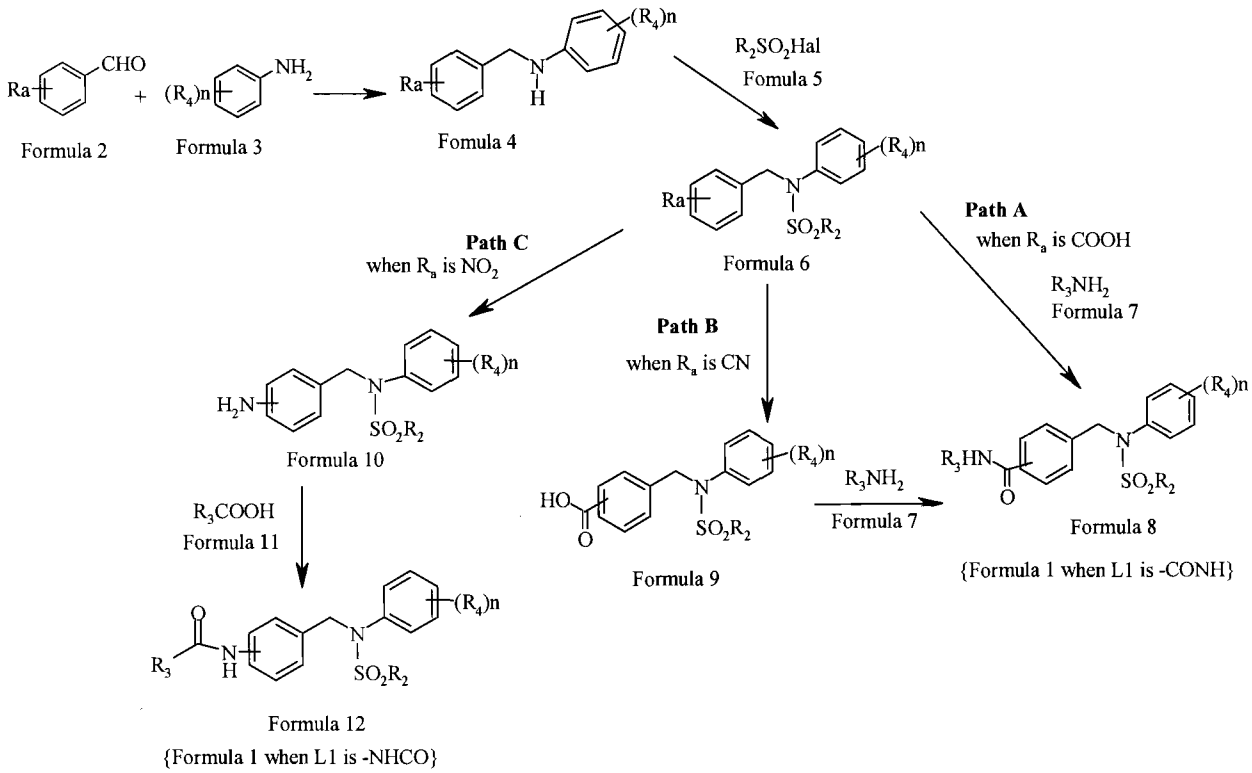
In one embodiment, the diseases or conditions of inflammation and associated pathologies are selected from bronchial asthma, chronic obstructive pulmonary disease, rheumatoid arthritis, Type I diabetes, multiple sclerosis, allograft rejection, psoriasis, inflammatory bowel disease, ulcerative colitis, acne, atherosclerosis, cancer, pruritis, allergic rhinitis and other inflammatory and/or autoimmune disorders.

In yet another embodiment, provided herein, are pharmaceutical compositions comprising one or more compound having the structure of Formula 1, as defined above, in combination with at least one or more other therapeutic agent selected from COX

inhibitors, BLTR antagonists, FLAP inhibitors, muscarinic receptor antagonists, β2-agonists, p38 MAP Kinase inhibitors, PDE-IV inhibitors or corticosteroids.

Compounds disclosed herein, may be prepared, for example, by techniques well known in organic synthesis and familiar to a practitioner ordinarily skilled in the art of this invention. In addition, the processes described herein may enable the synthesis of compounds of the present invention. However, these may not be the only means by which the compounds described in the invention may be synthesized. Further, the various synthetic steps described herein may be prepared in alternate sequences in order to furnish the desired compounds.

**Scheme I**




The compound of Formula 8 (Path A or Path B) and Formula 12 (Path C) can be prepared according to Scheme I. The reductive amination of a compound of Formula 2 (wherein Ra can be $NO_2$, COOH or CN) with a compound of Formula 3 (wherein $R_4$ is same as defined earlier and n is 1-3) gives a compound of Formula 4. The reaction of a compound of Formula 4 with a compound of Formula 5 (wherein Hal is F, Cl, Br, or I and $R_2$ is same as defined earlier) gives a compound of Formula 6. The compound of Formula

6 can react in three ways to give a compound of Formula 8 and a compound of Formula 12.

**Path A (wherein Ra is COOH)**: The coupling of a compound of Formula 6 with a compound of Formula 7 to give a compound of Formula 8.

**Path B (wherein Ra is CN)**: The reduction of a compound of Formula 6 gives a compound of Formula 9 which upon coupling with a compound of Formula 7 gives a compound of Formula 8.

**Path C (wherein Ra is $NO_2$)**: The reduction of a compound of Formula 6 gives a compound of Formula 10 which upon coupling with a compound of Formula 11 gives a compound of Formula 12.

The reductive amination of a compound of Formula 2 with a compound of Formula 3 to give a compound of Formula 4 can be carried out using reducing agents, for example, sodium cyanoborohydride ($NaCNBH_3$) in acetic acid, sodium triacetoxyborohydride ($NaBH(OCOCH_3)_3$) in acetic acid, $\alpha$-picoline-borane in acetic acid, sodium borohydride in acetic acid/trifluoroacetic acid/sulfuric acid, Zn in acetic acid, or Pd in formic acid, in one or more solvents selected from methanol, ethanol, tetrahydrofuran, or water.

The reaction of a compound of Formula 4 with a compound of Formula 5 to give a compound of Formula 6 can be carried out using organic base selected from, for example, trimethylamine, triethylamine, tributylamine, pyridine, *N*-ethyldiisopropylamine, 4-*N*,*N*'-dimethylaminopyridine, *N*-methylmorpholine or 2,6-lutidine.

The coupling of a compound of Formula 6 with a compound of Formula 7 to give a compound of Formula 8 (Path A) can be carried out using base selected from triethylamine, *N*,*N*-dimethylaminopyridine, 2,6-lutidine, 1-methylpiperidine, *N*-ethyldiisopropylamine, *N*,*N*-diisopropylethylamine or *N*-methylmorpholine, in the presence of additives, for example, hydroxybenzotriazole, 3-hydroxy-3,4-dihydro-4-oxo-1,2,3-benzotriazine, 2-hydroxypyridine, *N*-hydroxysuccinimide or 1-hydroxy-7-azabenzotriazole, with a suitable condensing agent, for example, dicyclohexyl carbodiimide, 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride, chlorotripyrrolidinophosphonium hexafluorophosphate or (benzotriazol-1-yloxy)*tris*-(dimethylamino)phosphonium hexafluorophosphate.

The hydrolysis of a compound of Formula 6 (Path B) to give a compound of Formula 9 can be carried out in the presence of base selected from sodium hydroxide,

potassium hydroxide using hydrogen peroxide, or in the presence of acid selected from sulphuric acid, formic acid, hydrochloric acid, or hydrobromic acid in one or more solvents selected from methanol, ethanol, propanol, or butanol.

The coupling of a compound of Formula 9 with a compound of Formula 7 to give a compound of Formula 8 can be carried out under similar conditions as described for the compounds of Formula 6 with a compound of Formula 7 to give a compound of Formula 8.

The reduction of a compound of Formula 6 to give a compound of Formula 10 can be carried out in the presence of one or more solvents selected from methanol, ethanol, propanol, or isopropanol, using a reducing agent, for example, Pd/C in the presence of hydrogen, lithium aluminium hydride, Raney Nickel in hydrazine hydrate or zinc, tin or iron, in the presence of hydrochloric acid.

The coupling of a compound of Formula 10 with a compound of Formula 11 to give a compound of Formula 12 (Path C) can be carried out under similar conditions as described for the compound of Formula 6 with a compound of Formula 7 to give a compound of Formula 8.

In the above scheme, where specific reagents, for example, bases, solvents, coupling agents, activating agents, etc., are disclosed, it is to be understood that other reagents, *e.g.*, bases, solvents, coupling agents, activating agents, etc., known to one of ordinary skill in the art may be used. Similarly, reaction temperatures and durations may be adjusted according to the desired needs without undue experimentation and well within the abilities of one of ordinary skill in the art. All the epimers, unless otherwise specified in the above scheme, are also encompassed within the scope of the invention.

The compounds described herein may be administered to an animal for treatment orally, topically, rectally, internasally, or by parenteral route. Pharmaceutical compositions disclosed herein comprise pharmaceutically effective amounts of compounds described herein formulated together with one or more pharmaceutically acceptable carriers, excipients or diluents.

Solid form preparations for oral administration include capsules, tablet, pills, powder, granules, lozenges, troches, and cachets. For solid form preparations, active compounds can be mixed with one or more inert, pharmaceutically acceptable excipients or carriers, for example, sodium citrate, dicalcium phosphate and/or fillers or extenders (for example,

starches, lactose, sucrose, glucose, mannitol, silicic acid or mixtures thereof); binders, for example, carboxymethylcellulose, alginates, gelatins, polyvinylpyrrolidinone, sucrose, acacia or mixtures thereof; disintegrating agents, for example, agar-agar, calcium carbonate, potato starch, alginic acid, certain silicates, sodium carbonate or mixtures thereof; absorption acceletors, for example, quaternary ammonium compounds; wetting agents, for example, cetyl alcohol, glycerol mono stearate or mixtures thereof; adsorbants, for example, Kaolin; lubricants, for example, talc, calcium stearate, magnesium stearate, solid polyethyleneglycol, sodium lauaryl sulfate or mixtures thereof.

Capsules, tablets or pills may also comprise buffering agents. Tablets, capsules, pills or granules can be prepared using one or more coatings or shells to modulate the release of active ingredients, for example, enteric coatings or other coatings known to one of ordinary skill in the art.

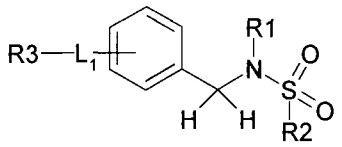
Liquid form preparations for oral administration include pharmaceutically acceptable emulsions, solutions, suspensions, syrups or elixirs. In such liquid form preparations, active compounds can be mixed with water or one or more non-toxic solvents, solubilizing agents or emulsifiers, for example, water, ethyl alcohol, isopropyl alcohol, ethyl carbonate, ethyl acetate, benzyl alcohol, benzyl benzoate, propylene glycol, 1,3-butylene glycol, dimethylformamide, oils, for example, cottonseed, groundnut, corn, germ, olive, castor and sesame oil, glycerol, fatty acid esters of sorbitan, or mixtures thereof. Oral compositions can also include one or more adjuvants, for example, wetting agents, emulsifying agents, suspending agents, sweetening agents, flavoring agents, perfuming agents, or mixtures thereof.

Injectable preparations, for example, sterile injections and aqueous suspensions, may be formulated according to methods known to one of ordinary skill in the art, and in particular, using one or more suitable dispersing or wetting and suspending agents. Acceptable vehicles and solvents that may be employed include one or more of water, Ringer's solution, isotonic sodium chloride, or mixtures thereof.

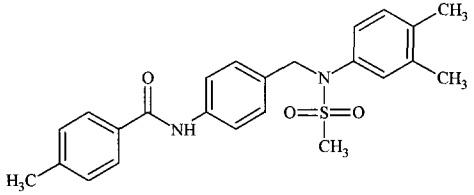
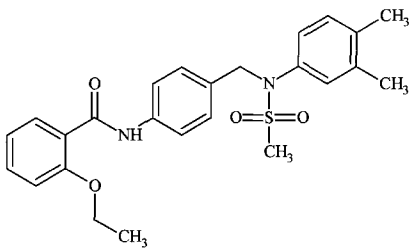
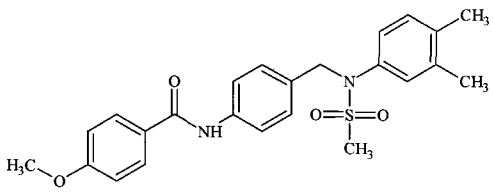
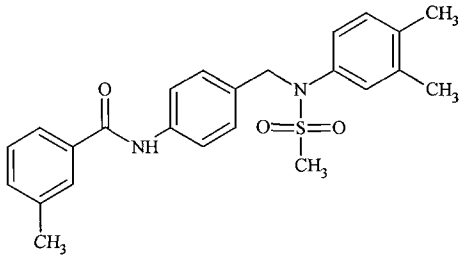
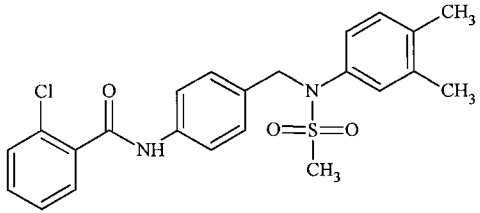
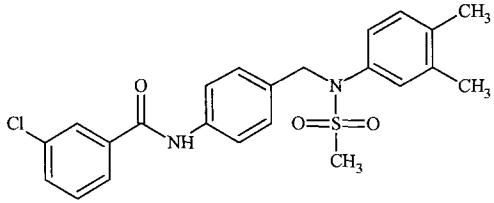
Suppositories for rectal administration of the compound of this invention can be prepared by mixing the drug with suitable nonirritating excipients, such as, cocoa butter and polyethylene glycols, which are solid at ordinary temperatures but liquid at body temperature and which, therefore, melt in the rectum and release the drug.

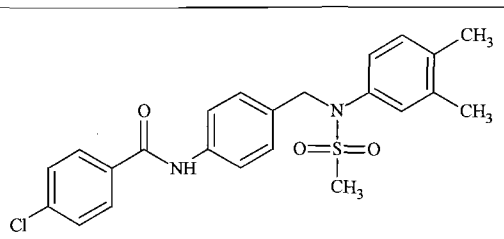
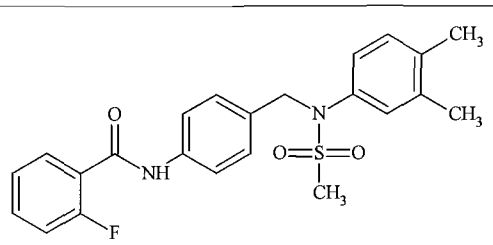
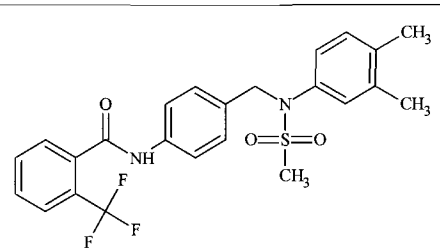
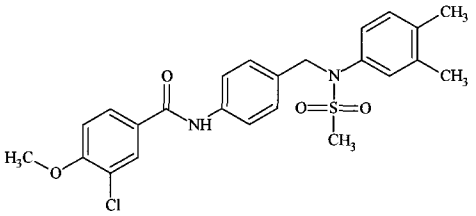
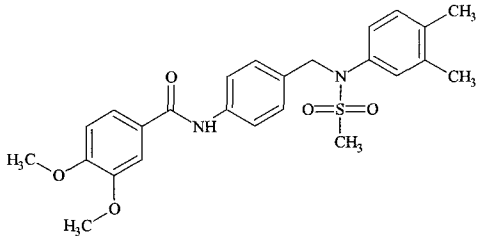
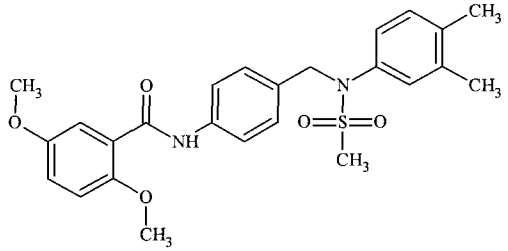
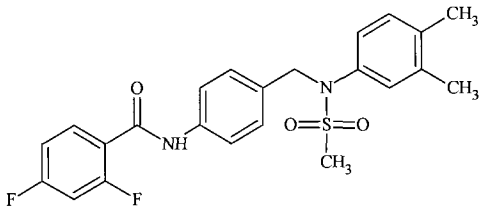
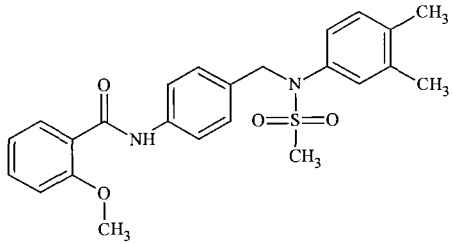
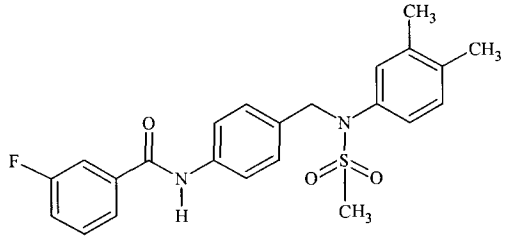
Dosage forms for topical or transdermal administration of a compound of the present invention include ointments, pastes, creams, lotions, gels, powders, solutions, sprays, inhalants or patches. Active compounds can be admixed under sterile condition with one or more pharmaceutically acceptable carriers and optionally any preservatives or buffers as may be required. Ophthalmic formulations, eardrops, eye ointments, powders and solutions are also encompassed within the scope of this invention.

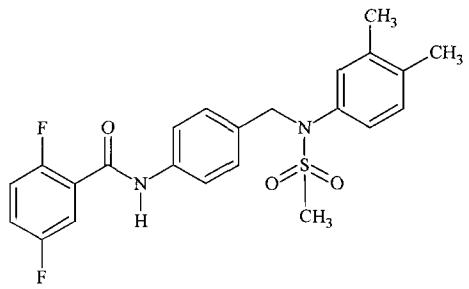
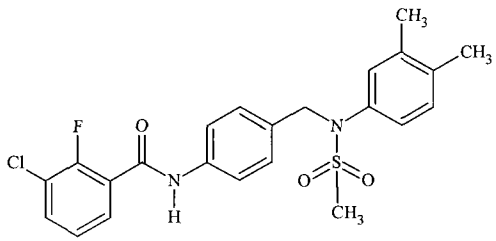
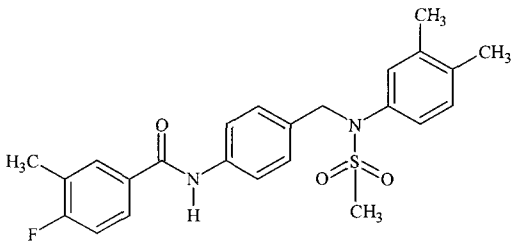
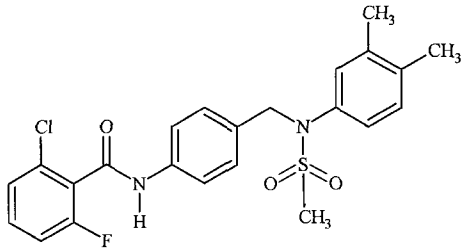
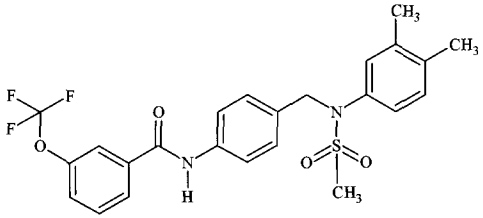
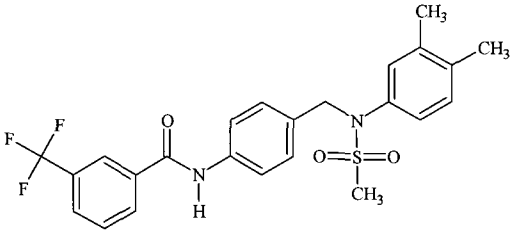
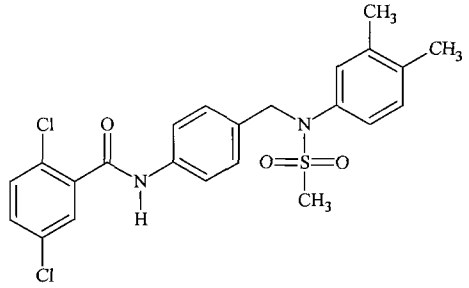
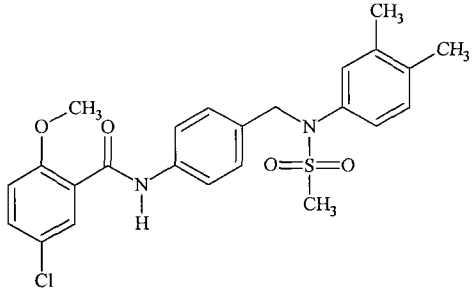
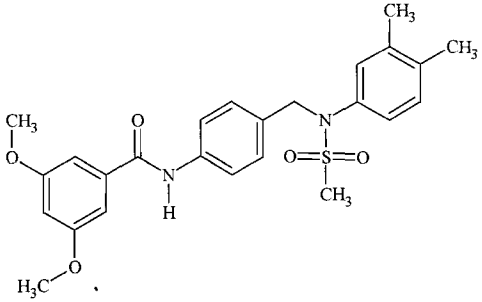
Pharmaceutical preparations may be in unit dosage form. In unit dosage form, the preparations can be subdivided into unit doses containing appropriate quantities of active components. Unit dosage forms can be packaged preparations containing discrete capsules, powders, in vials or ampoules, ointments, capsules, sachets, tablets, gels, creams or any combination and number of such packaged forms.

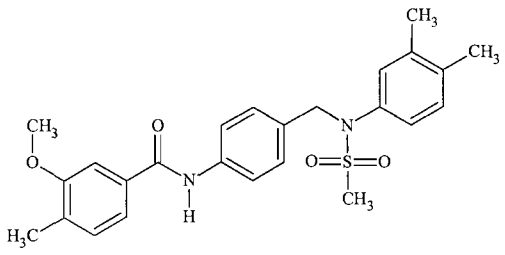
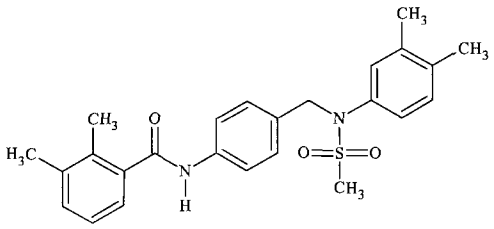
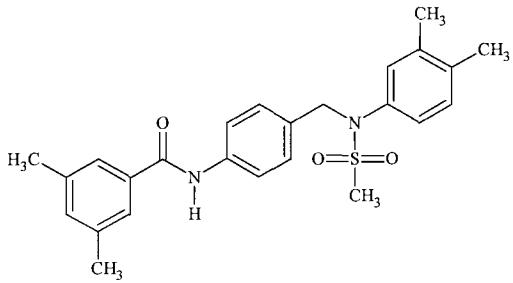
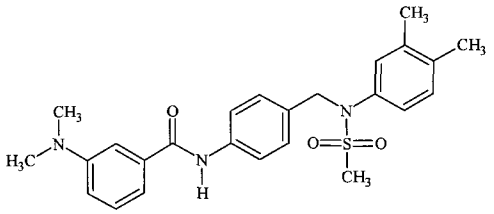
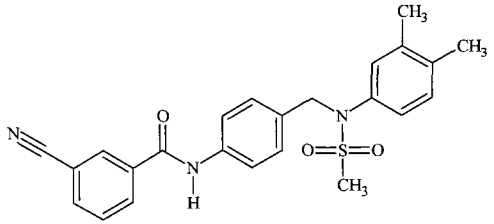
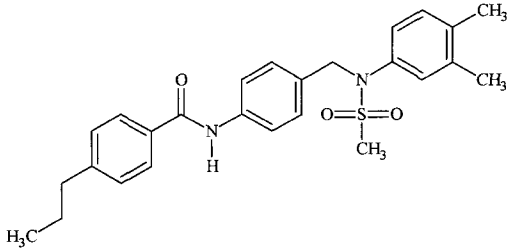
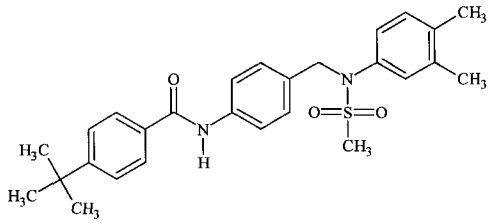
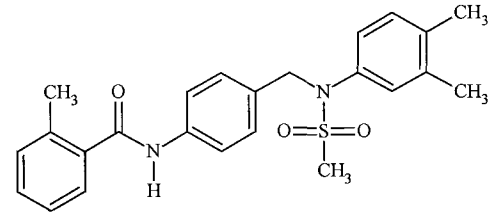
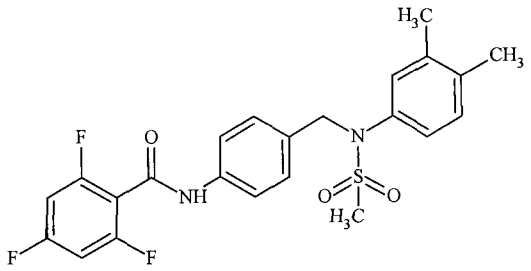


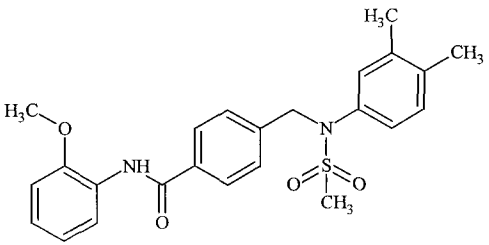
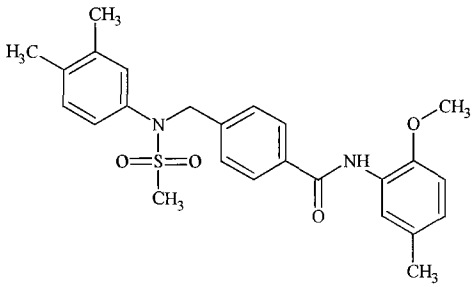
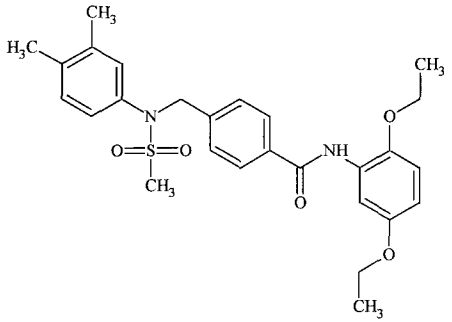
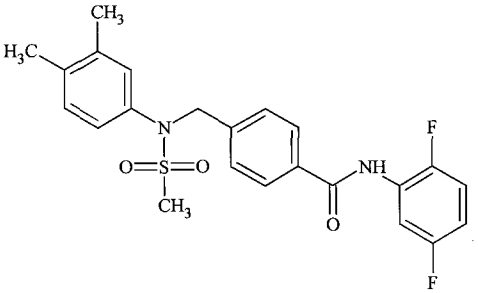
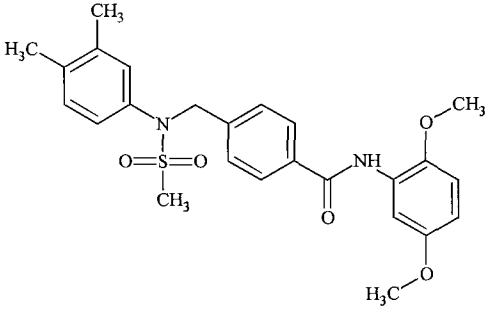
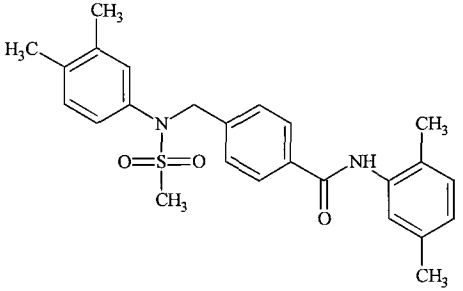

**Formula I**

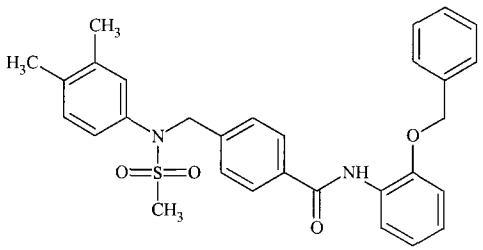
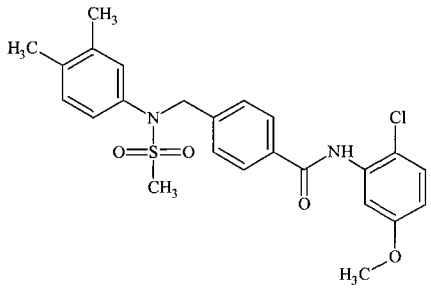
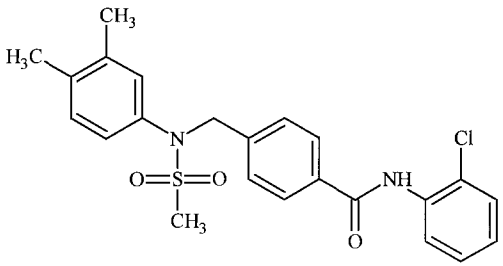
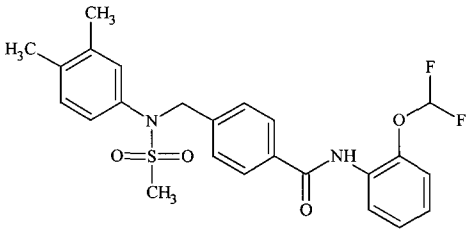
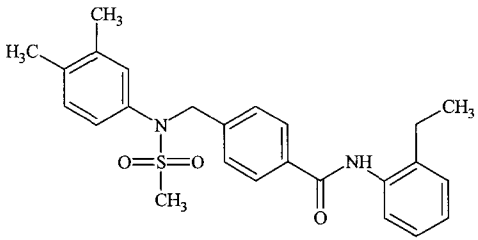
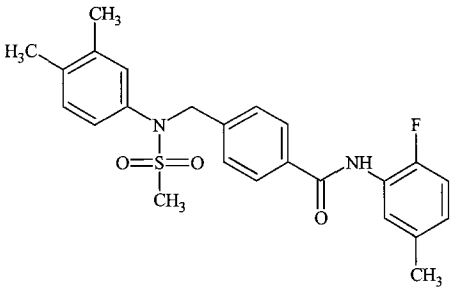
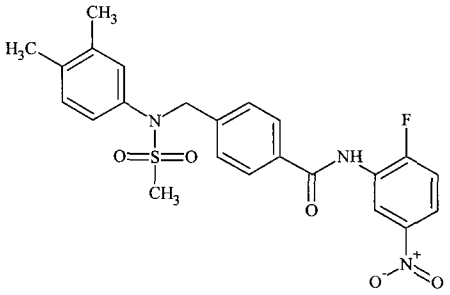
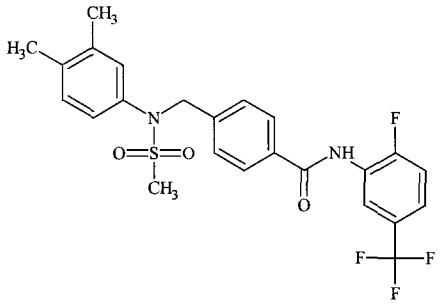
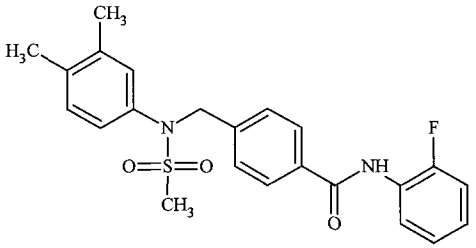
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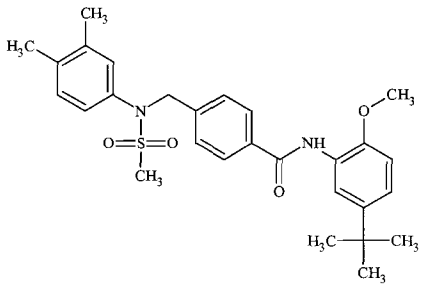
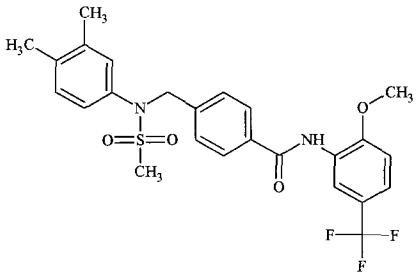
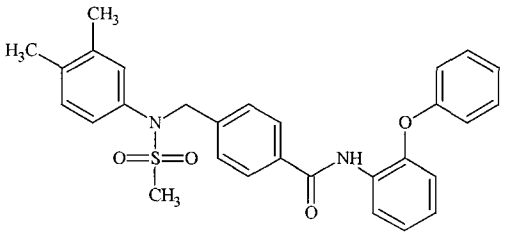
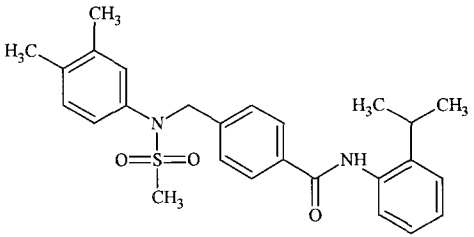
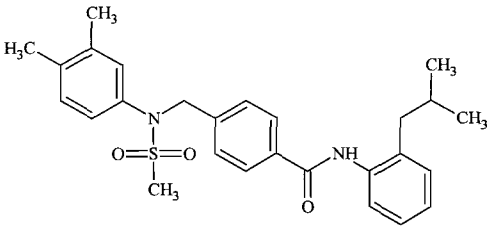
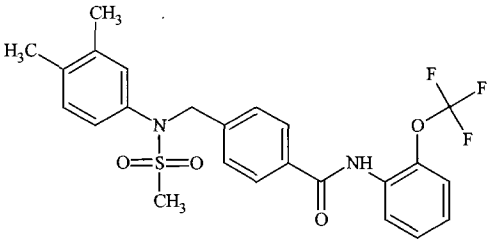
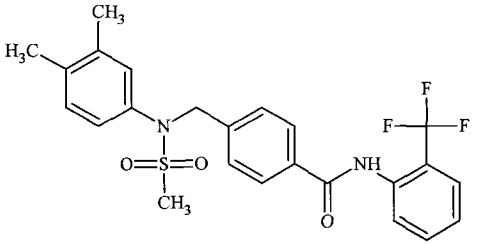
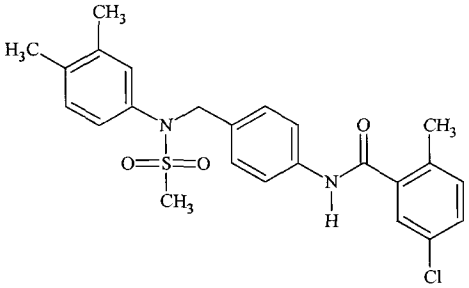
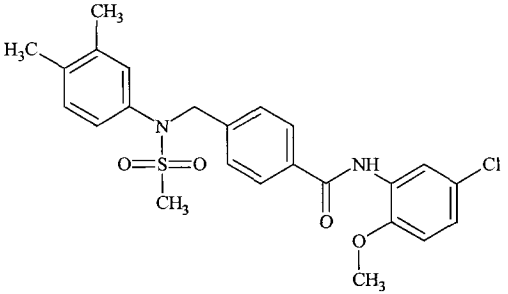
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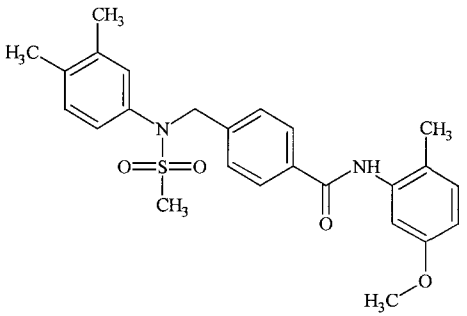
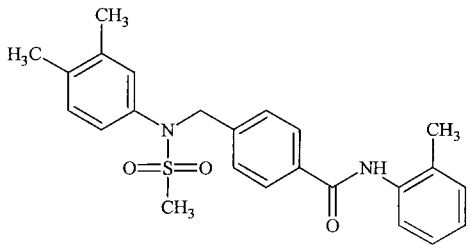
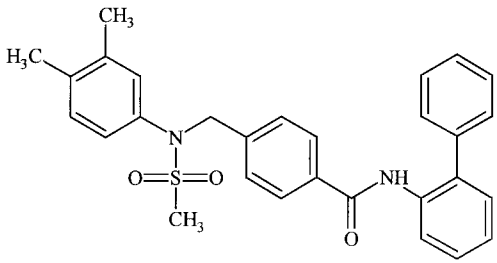
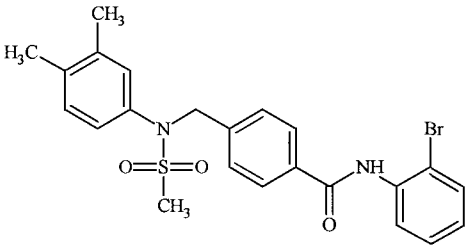
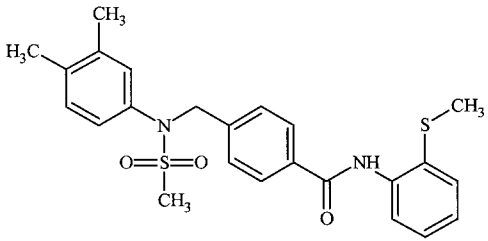
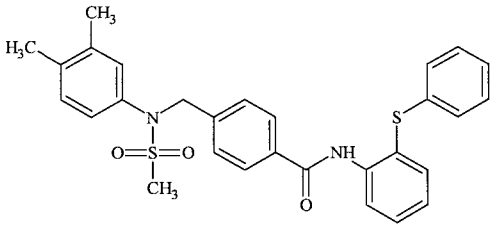
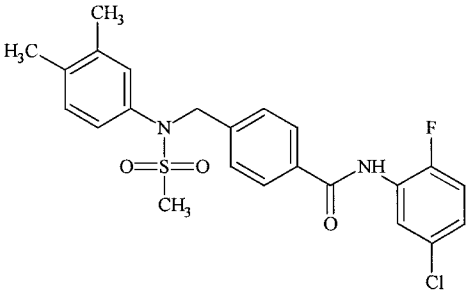
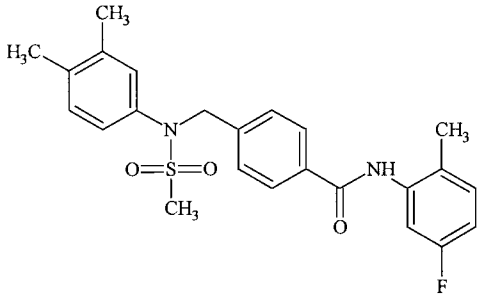
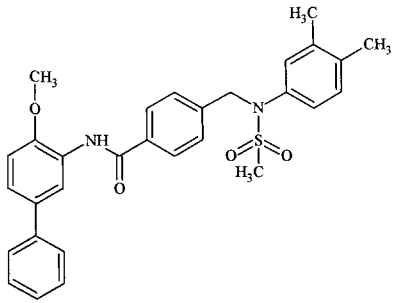
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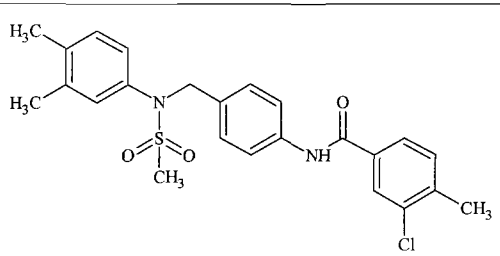
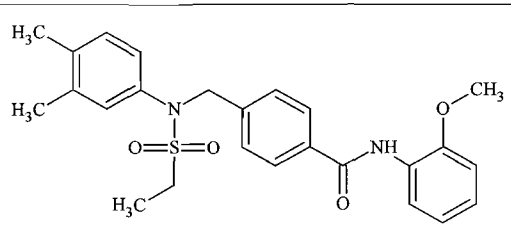
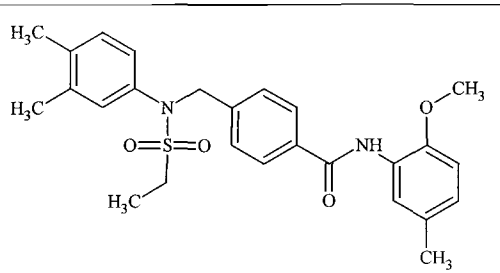
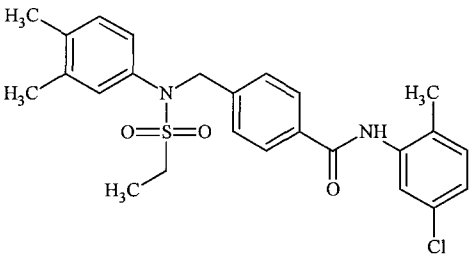
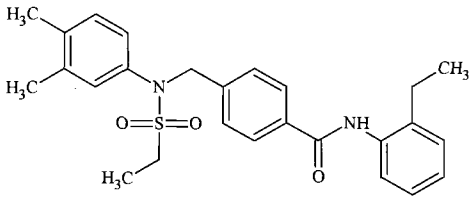
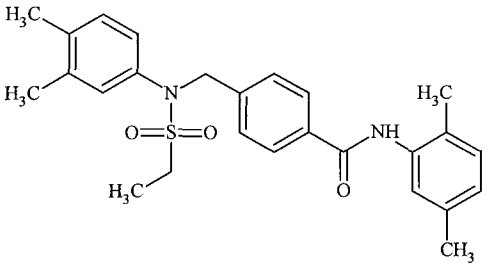
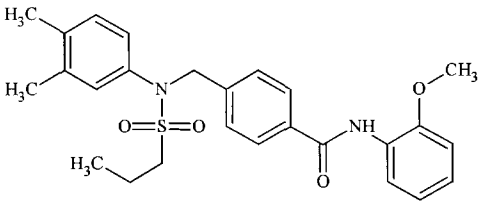
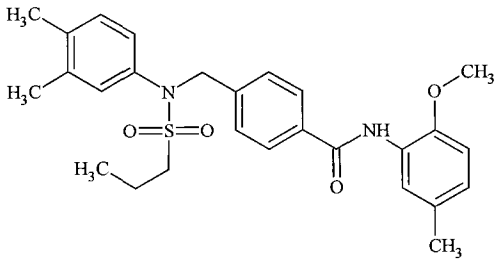
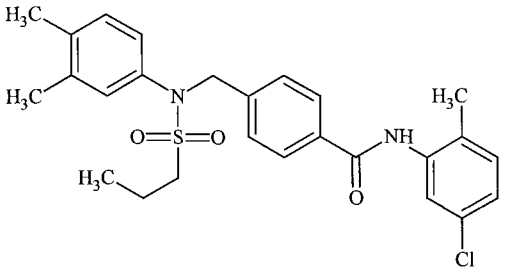
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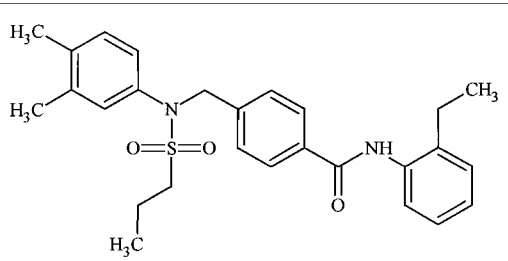
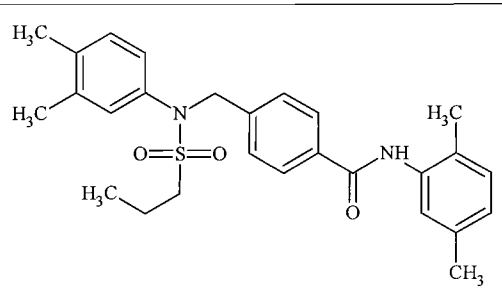
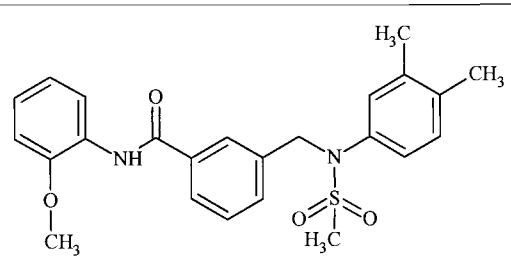
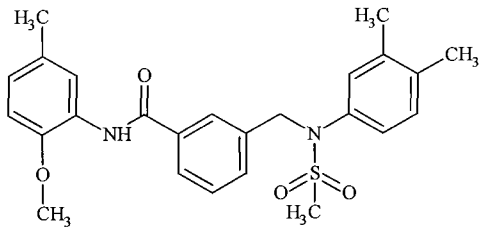
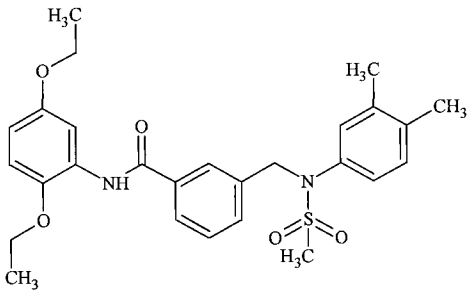
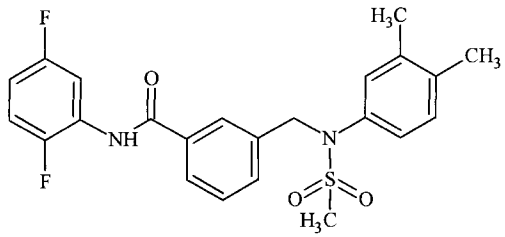
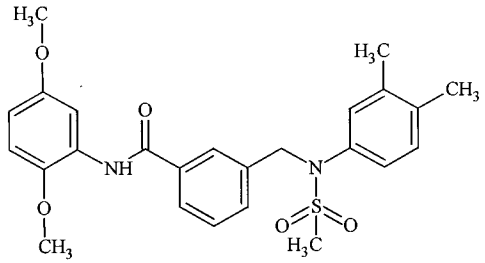
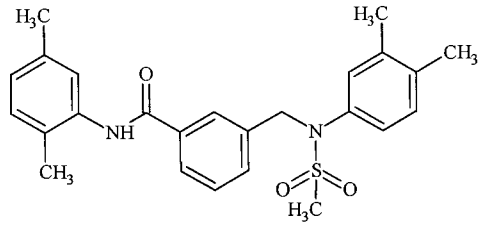
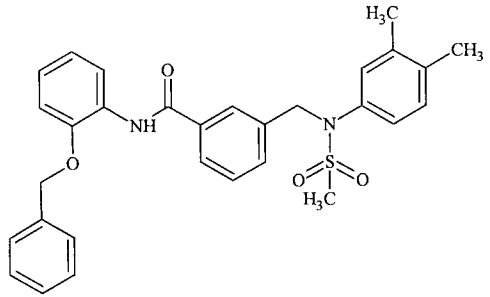
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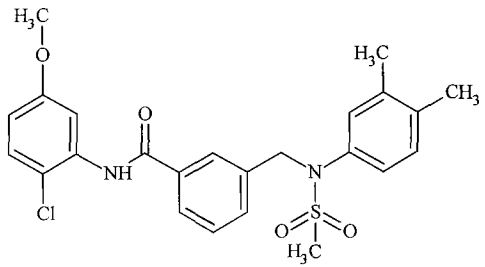
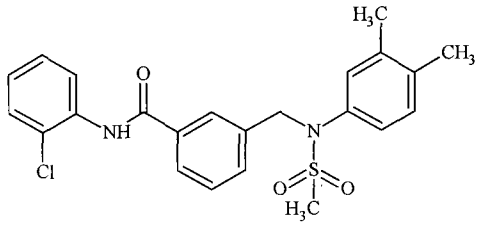
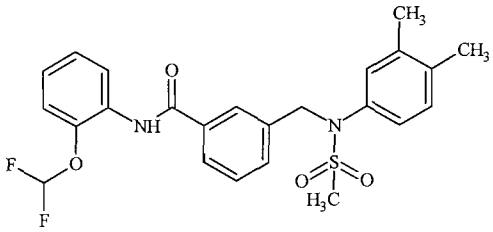
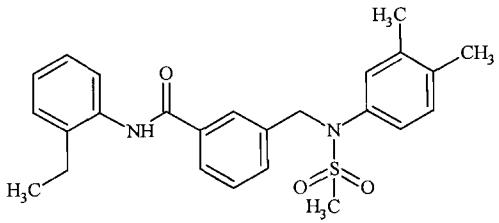
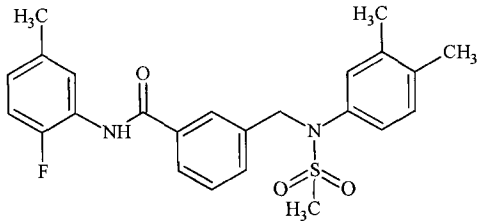
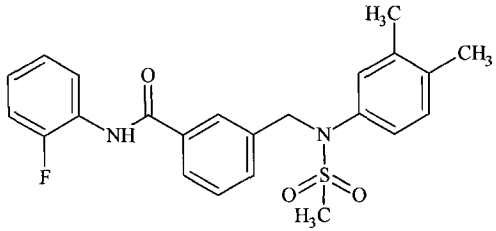
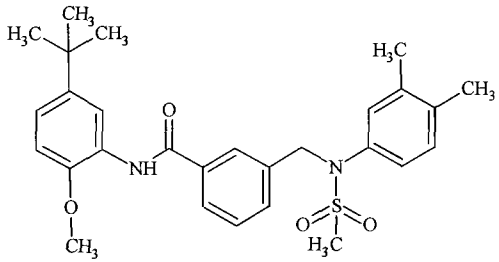
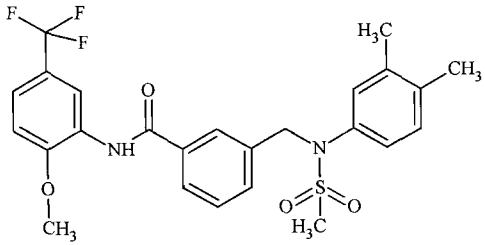
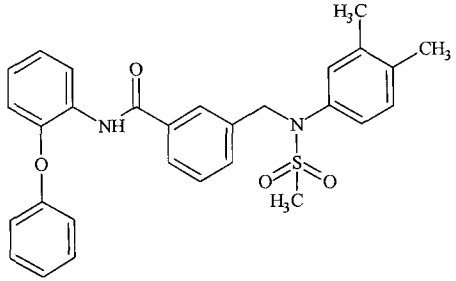
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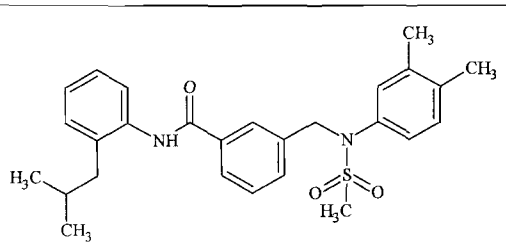
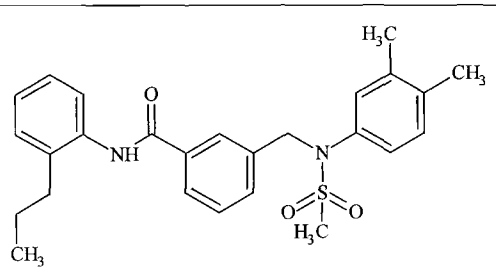
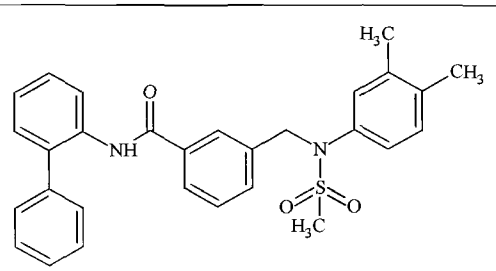
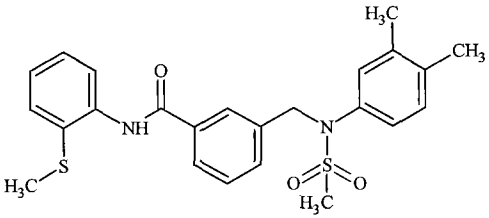
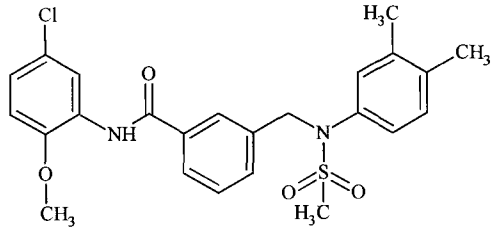
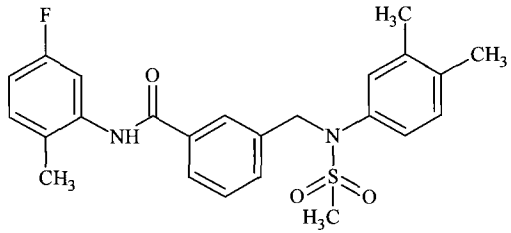
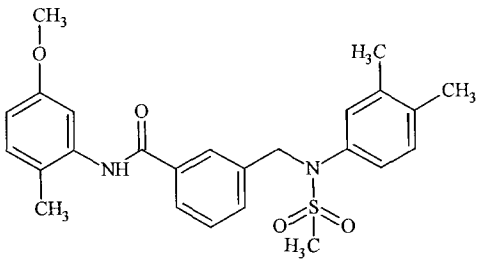
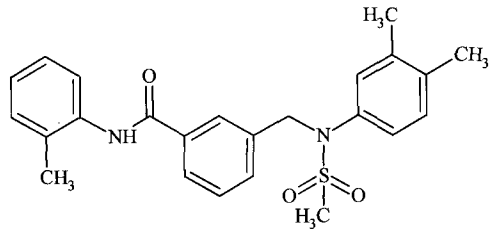
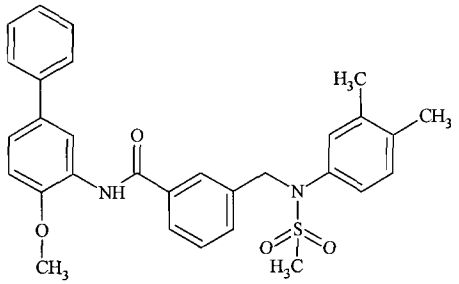
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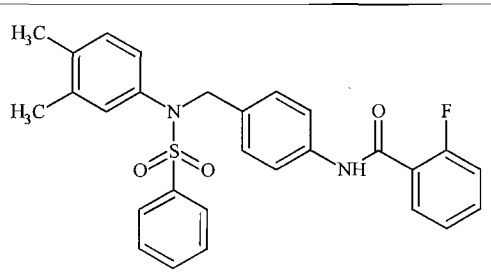
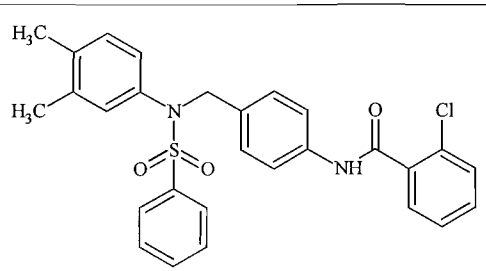
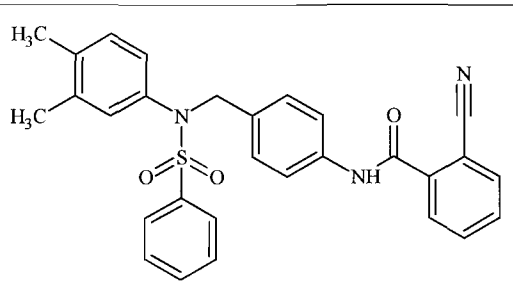
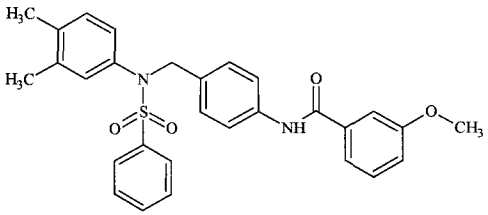
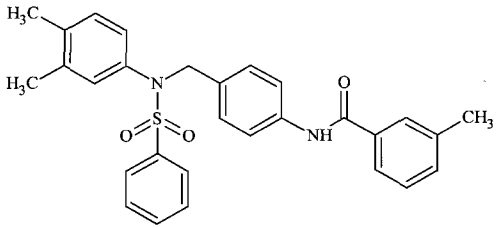
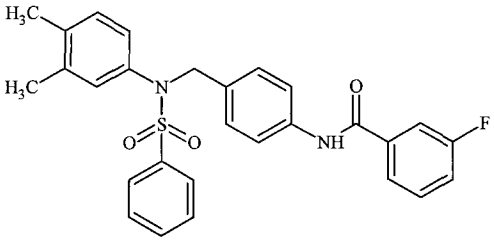
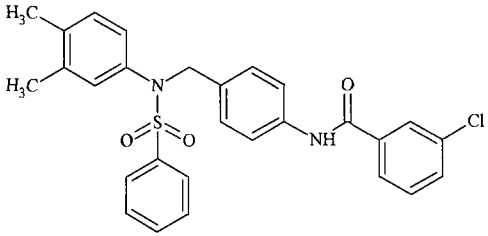
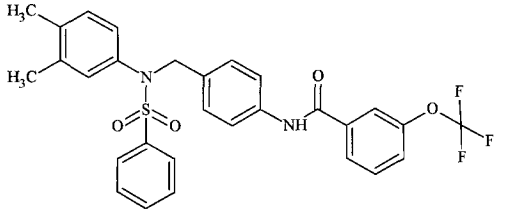
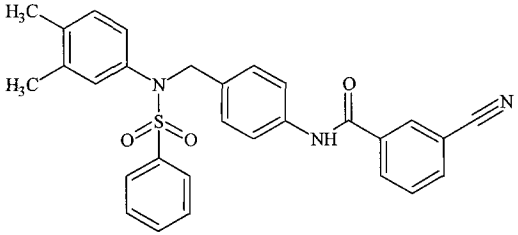
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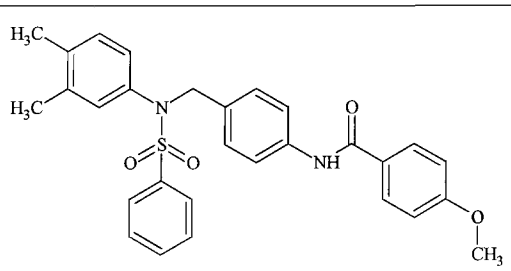
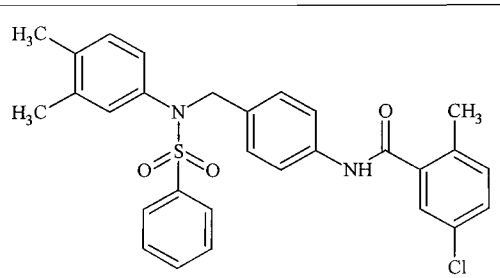
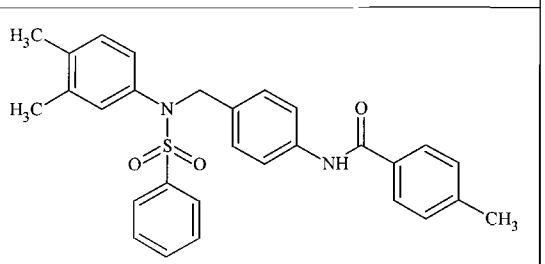
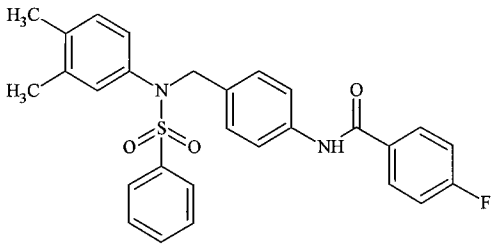
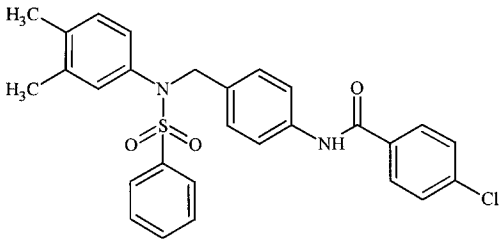
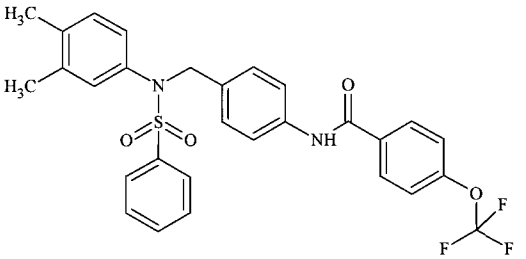
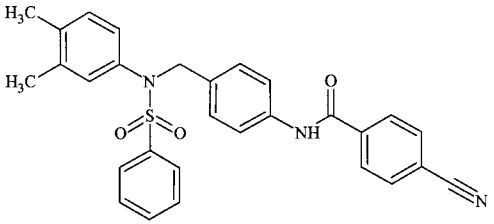
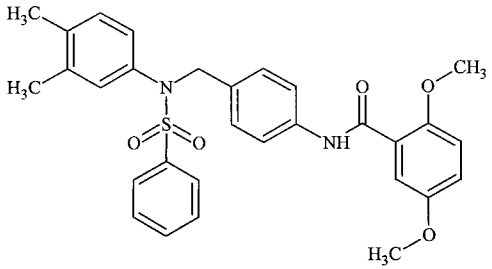
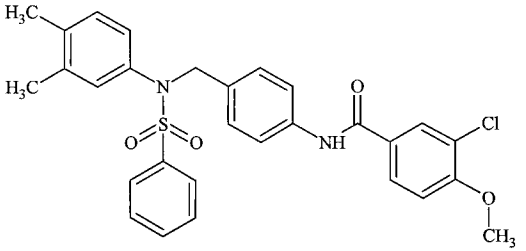
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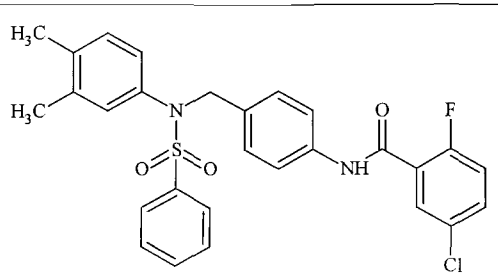
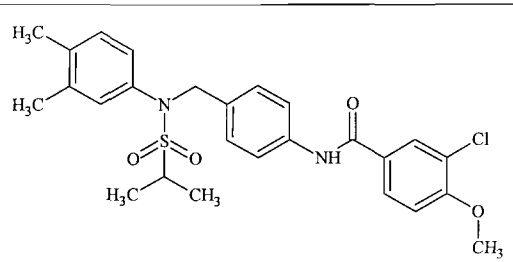
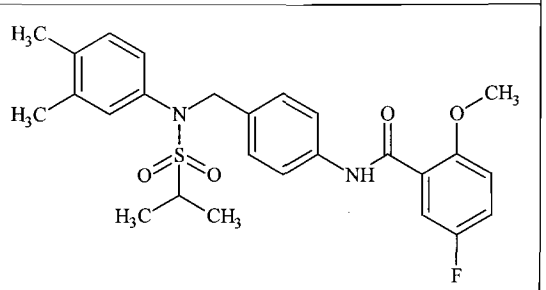
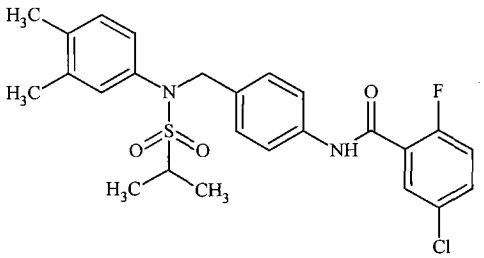
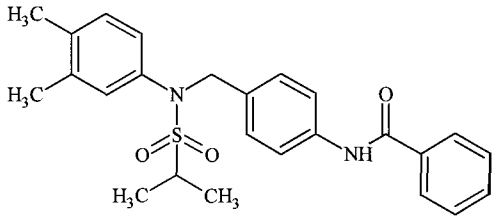
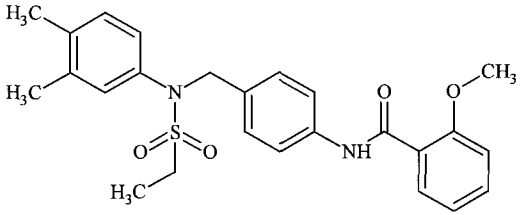
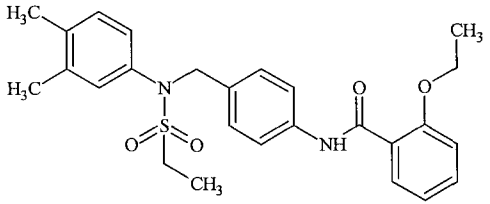
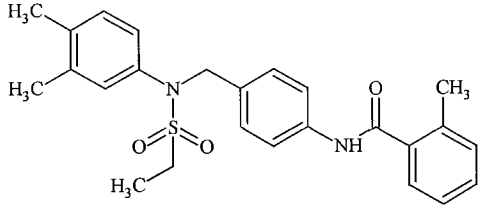
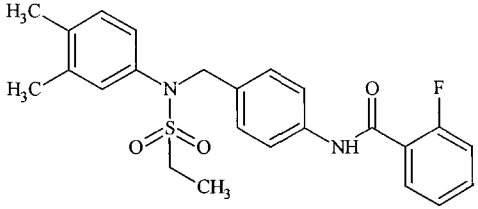
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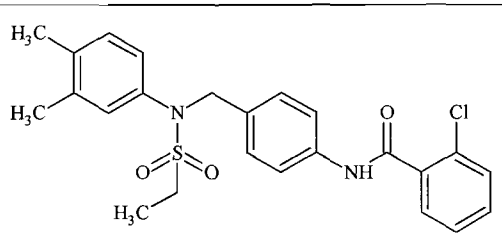
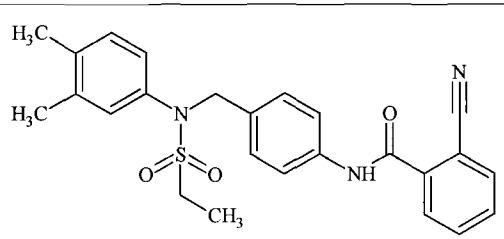
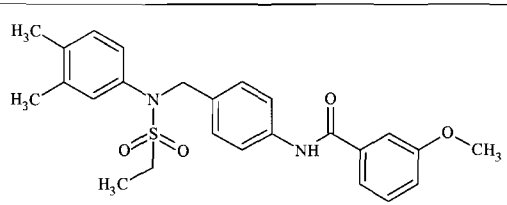
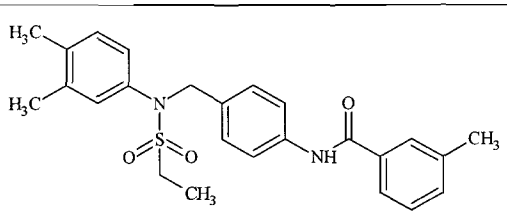
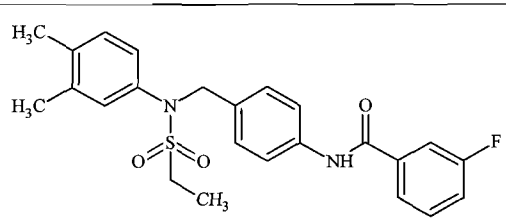
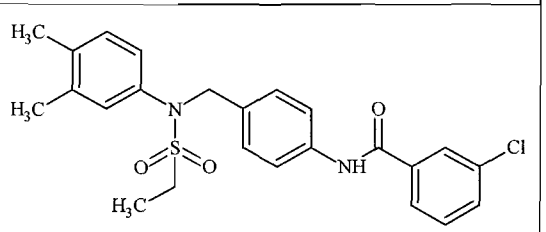
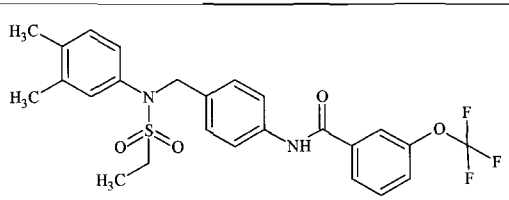
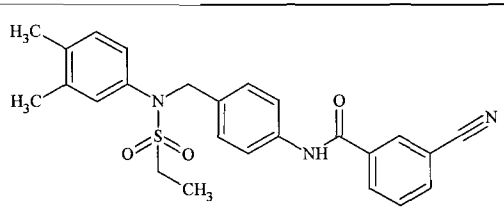
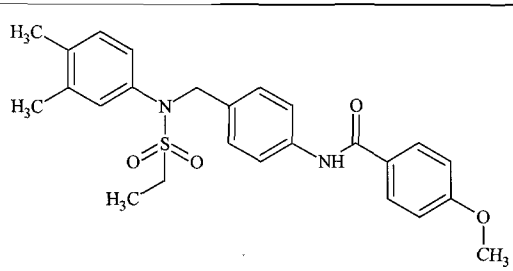
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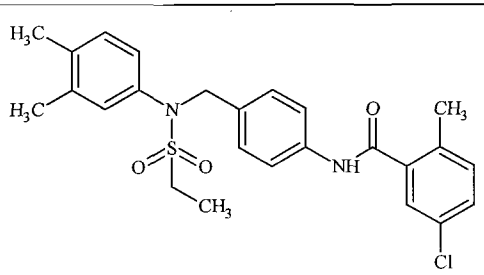
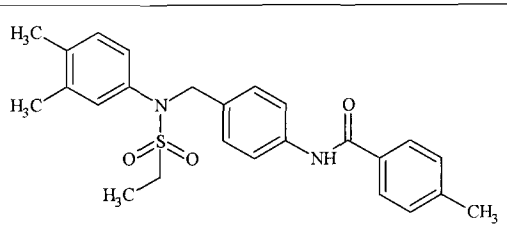
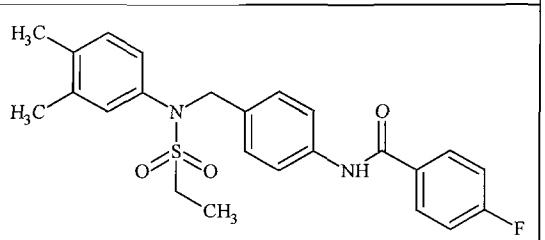
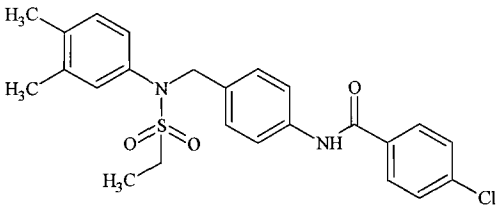
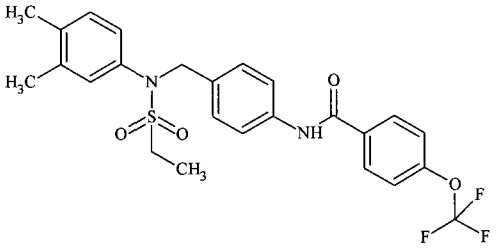
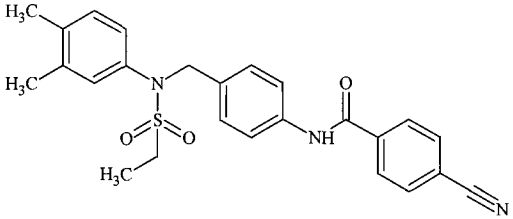
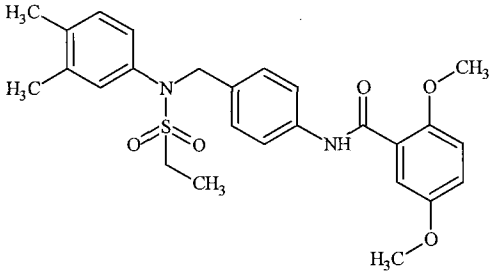
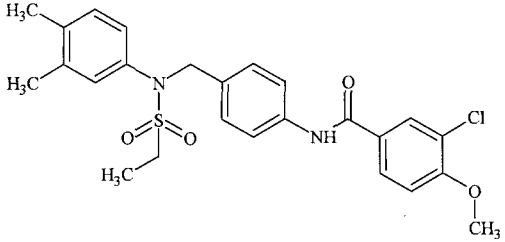
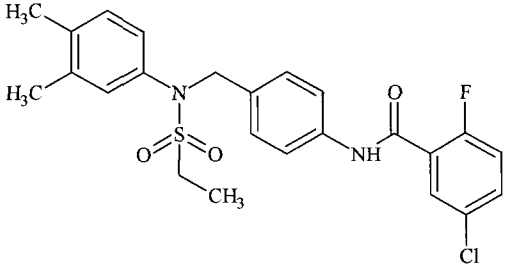
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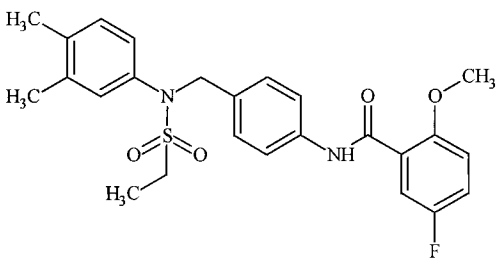
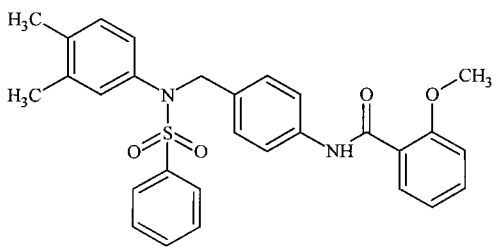
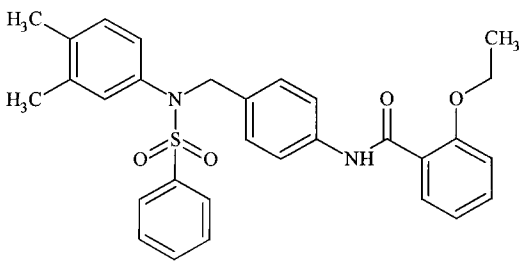
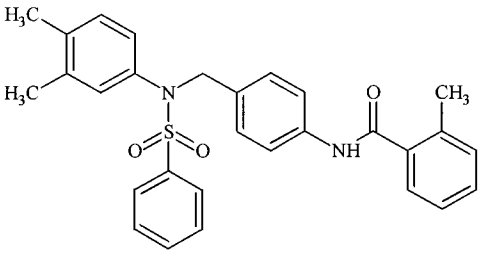
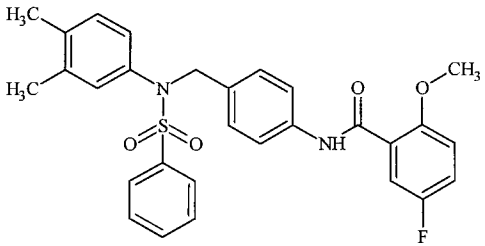
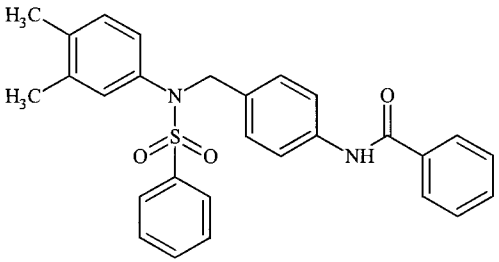
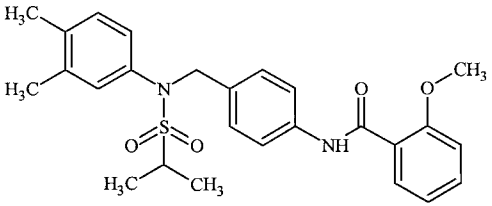
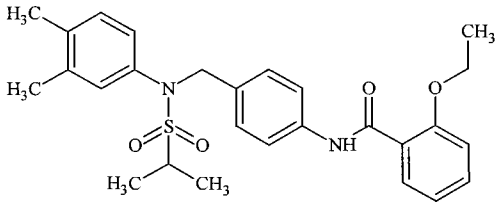
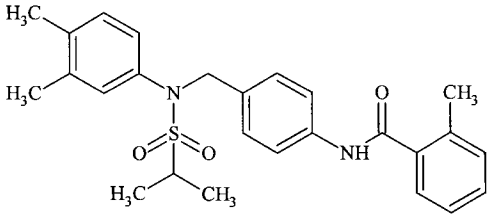
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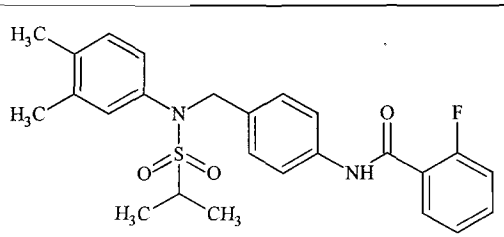
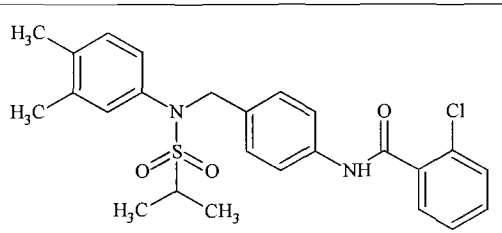
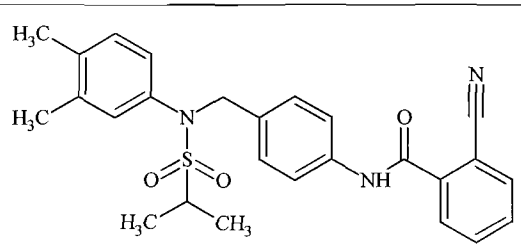
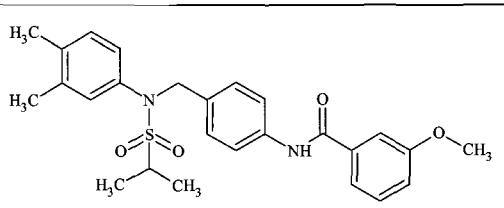
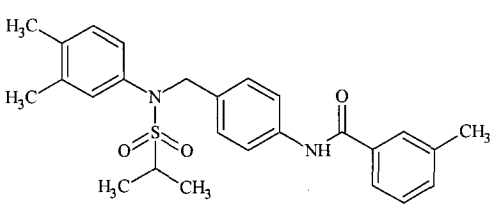
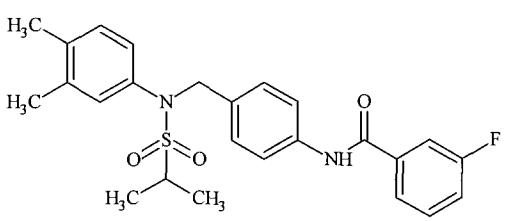
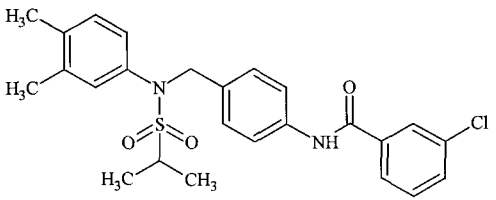
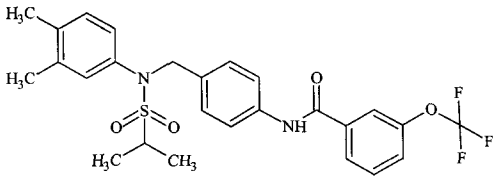
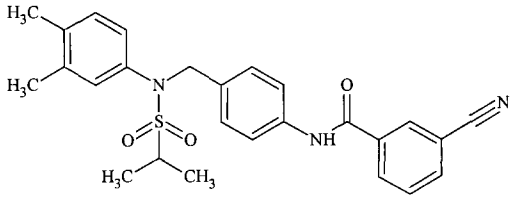
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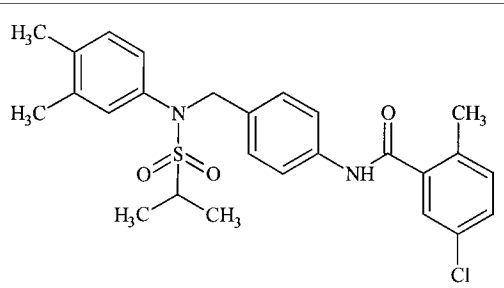
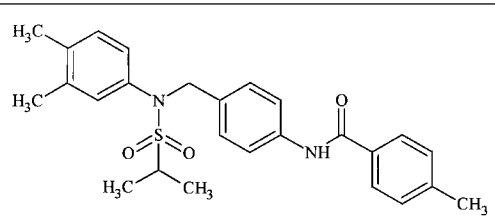
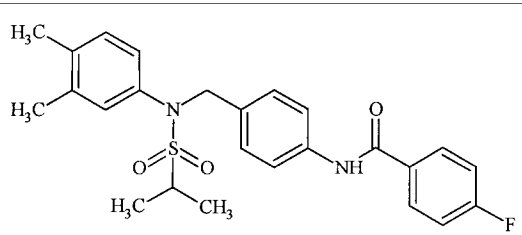
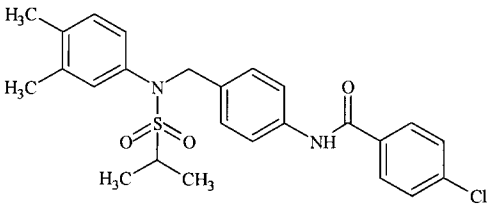
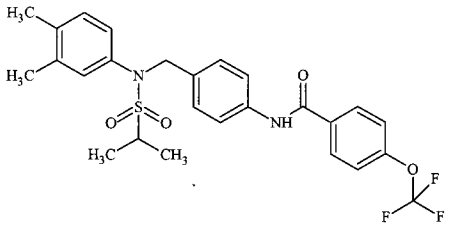
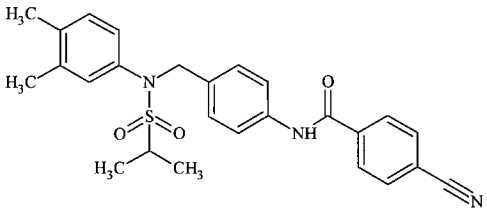
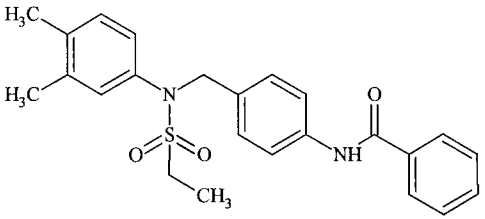
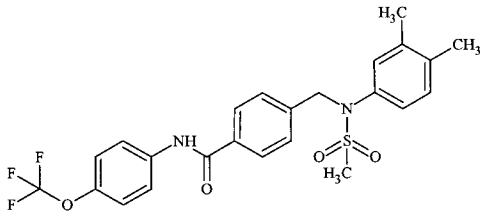
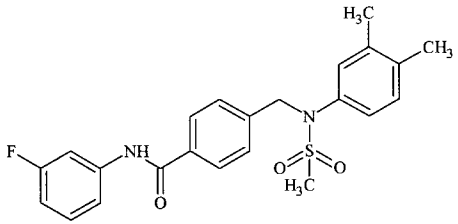
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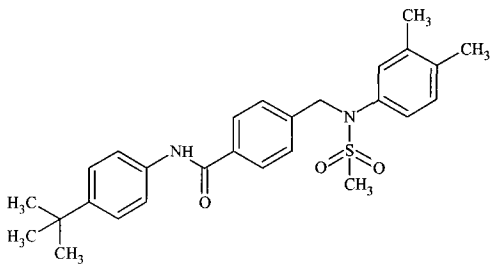
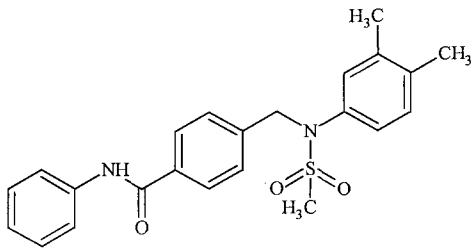
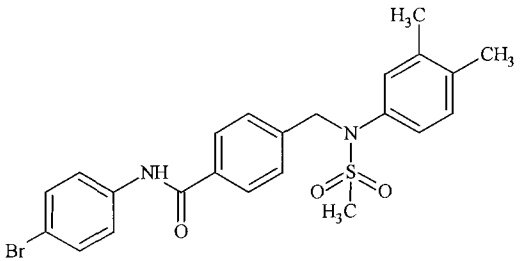
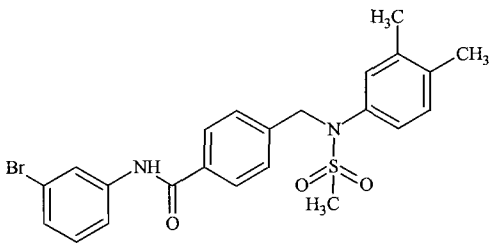
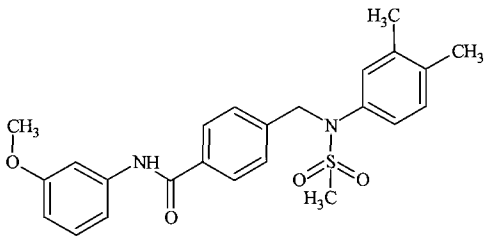
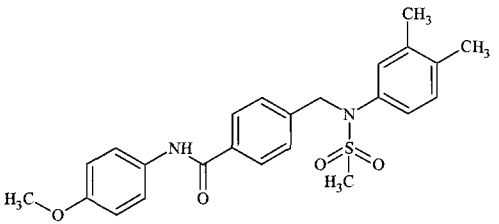
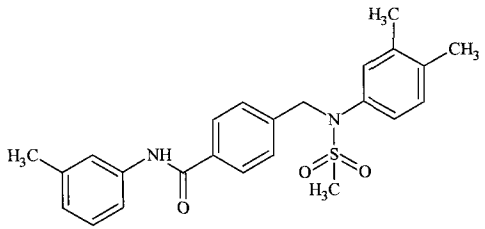
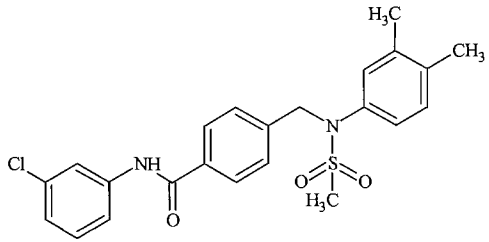
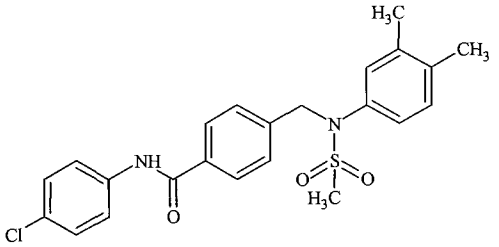
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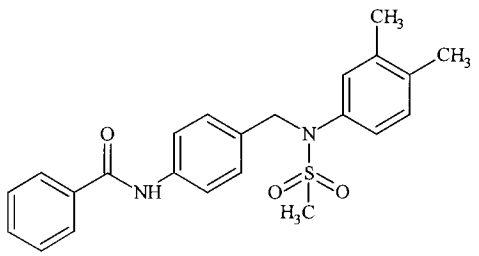
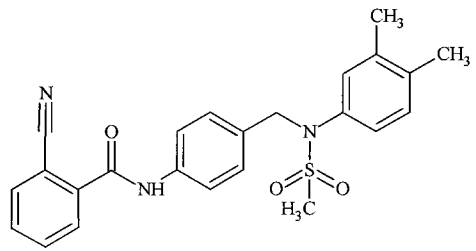
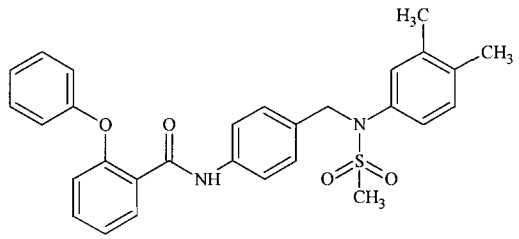
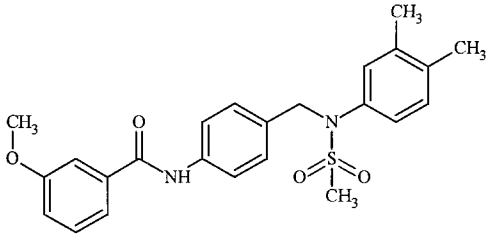
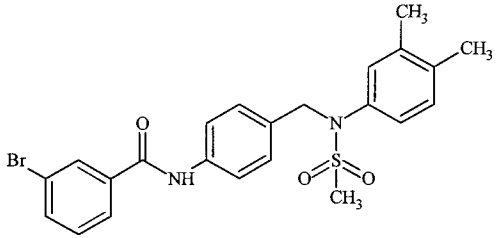
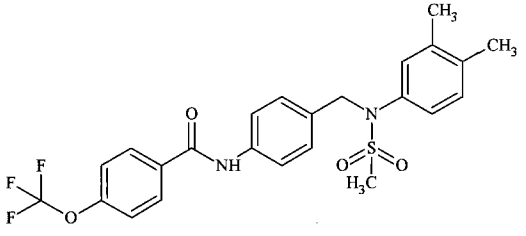
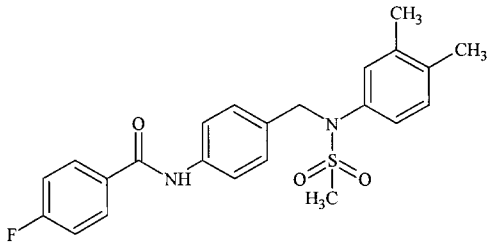
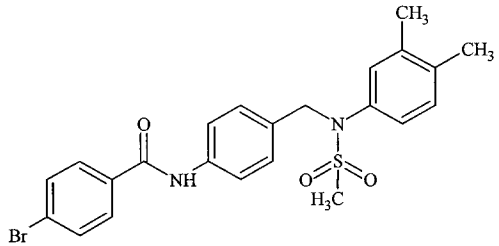
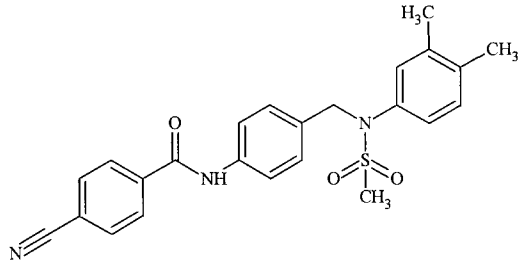
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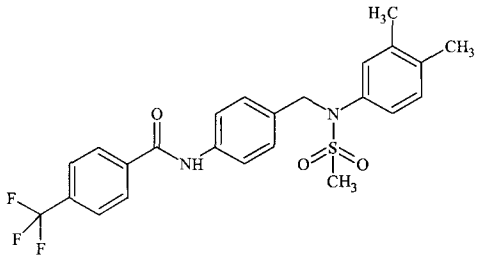
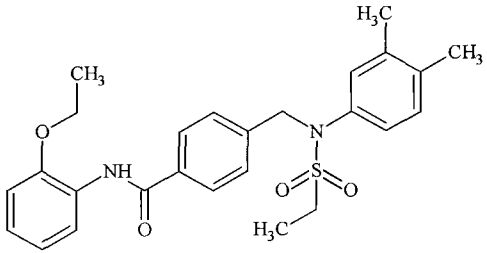
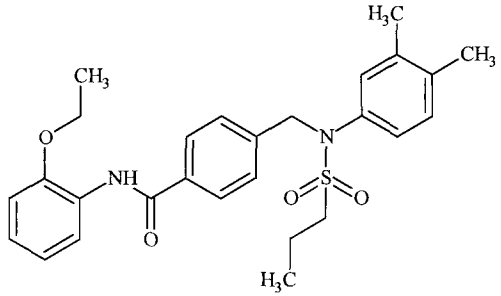
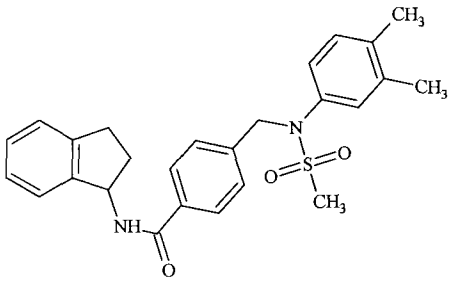
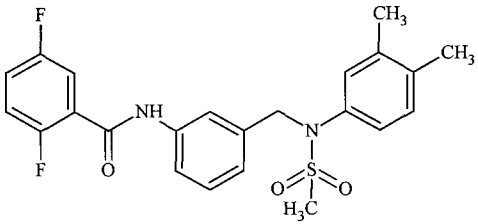
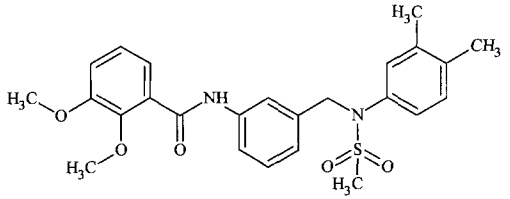
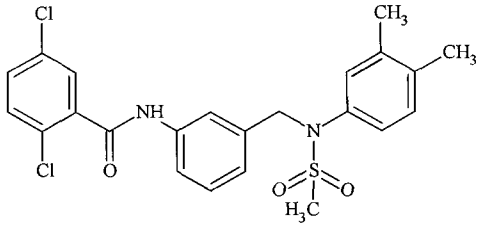
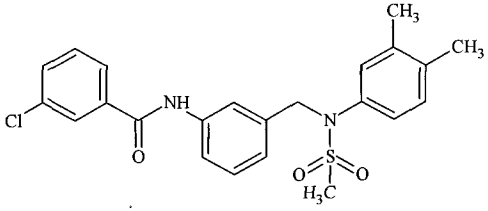
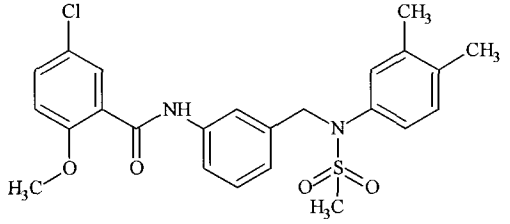
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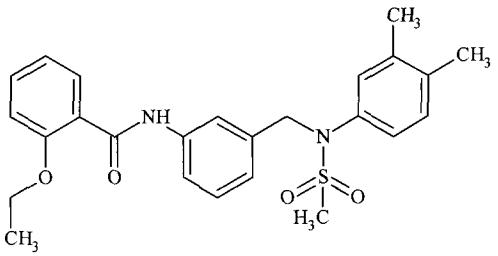
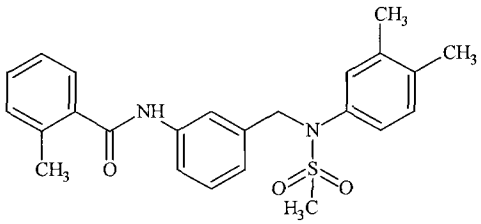
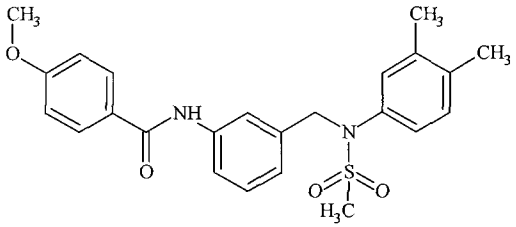
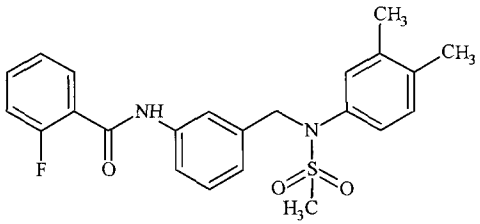
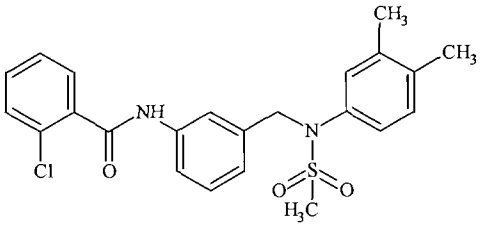
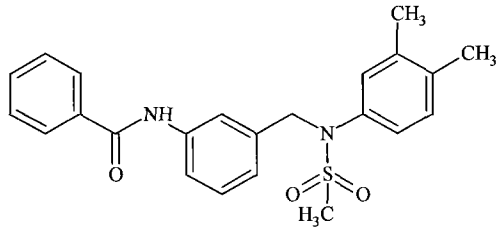
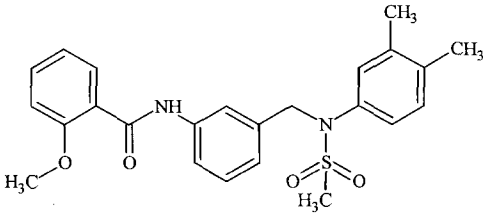
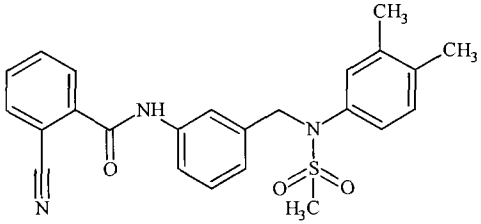
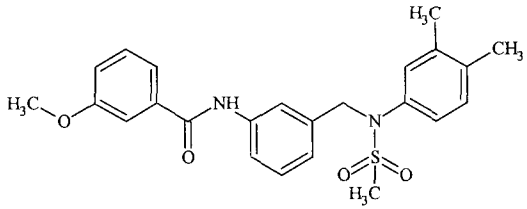
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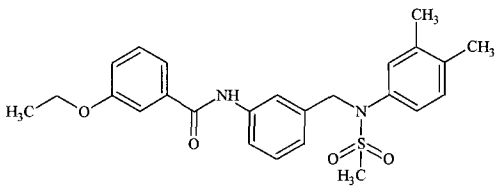
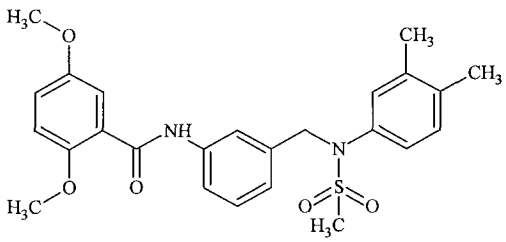
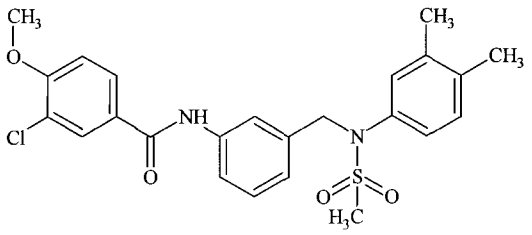
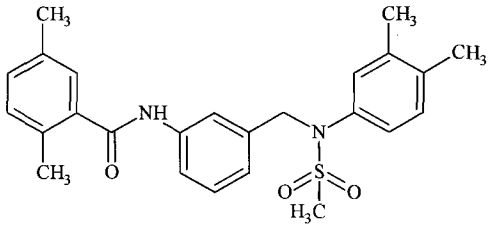
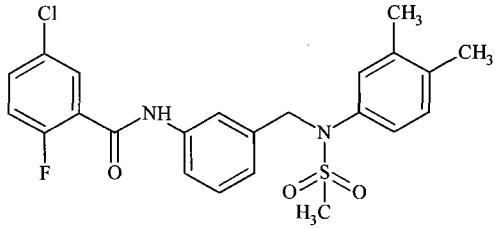
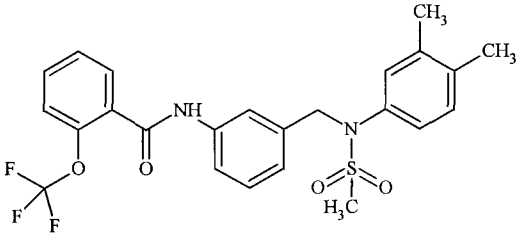
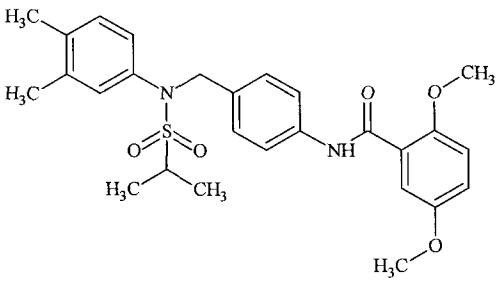
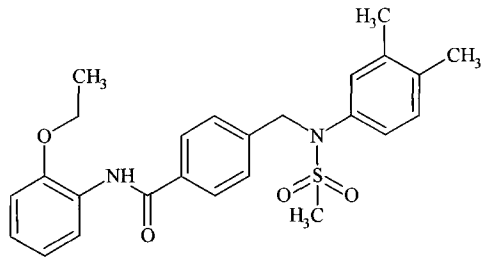
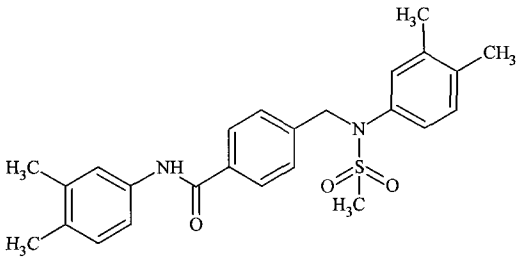
| C.No. | Structure | C.No. | Structure | C.No. | Structure |
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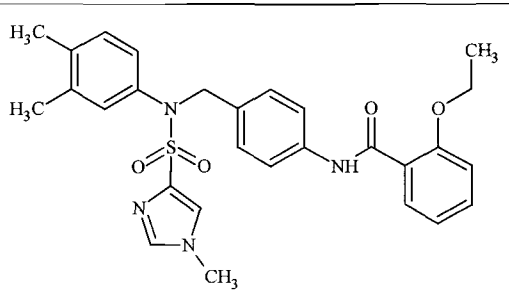
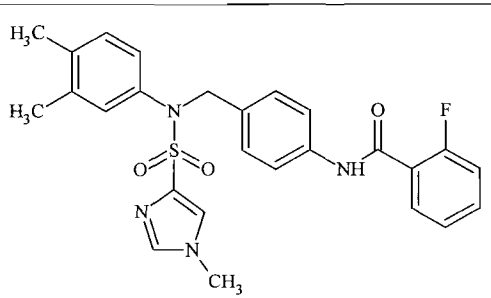
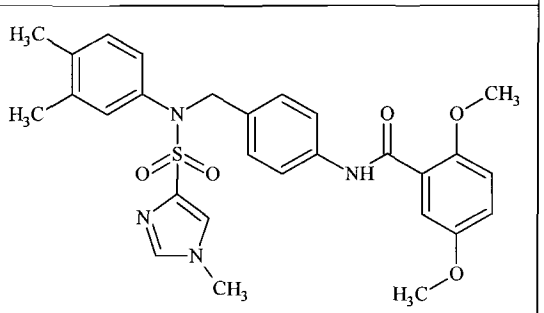
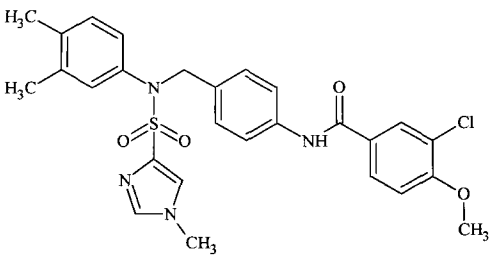
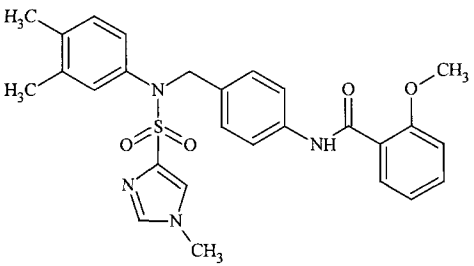
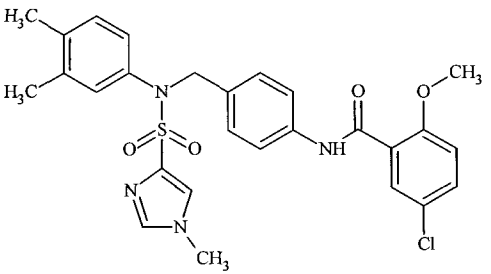
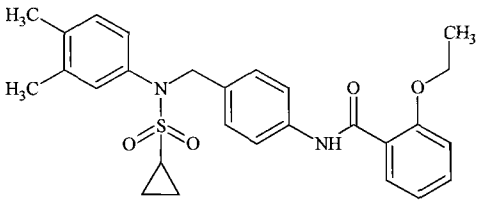
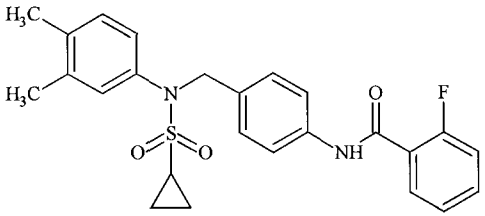
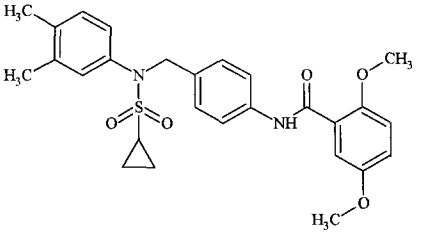
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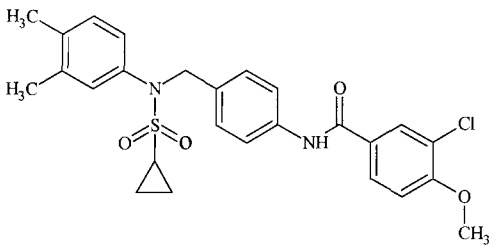
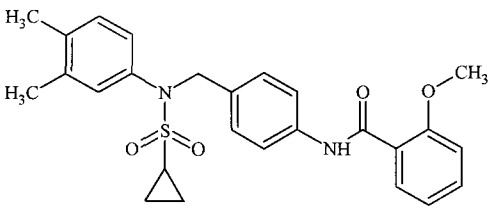
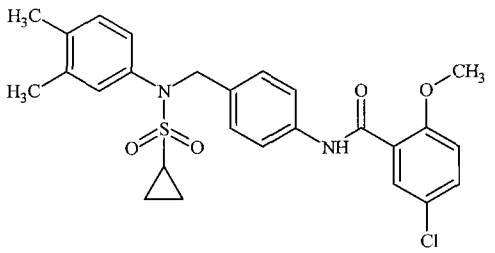
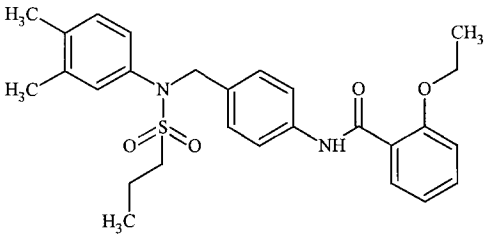
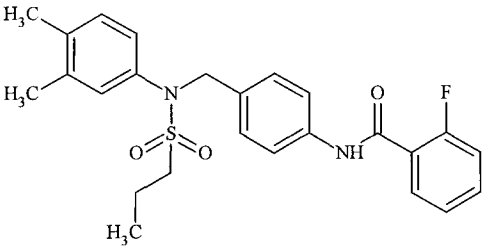
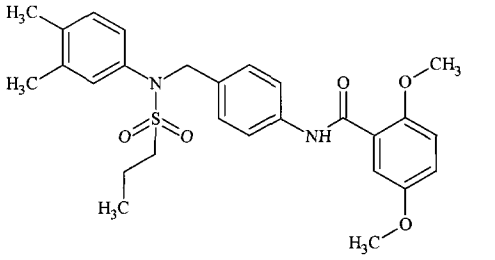
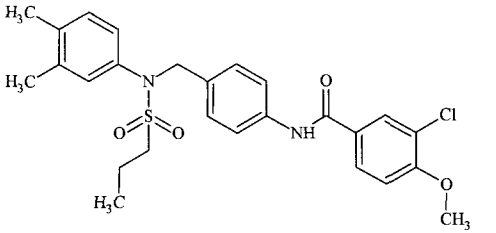
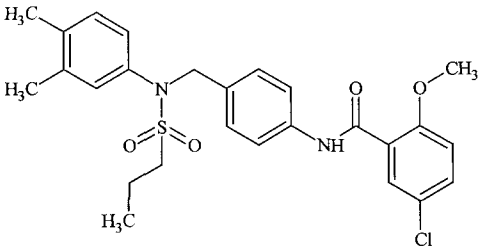
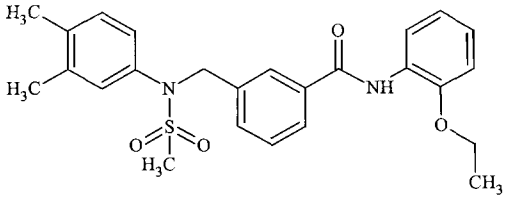
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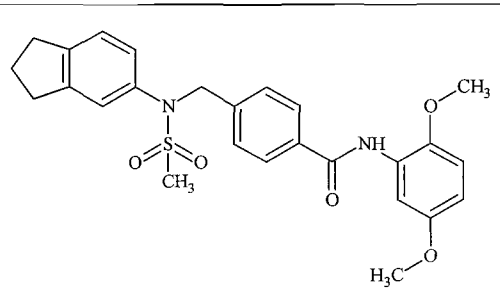
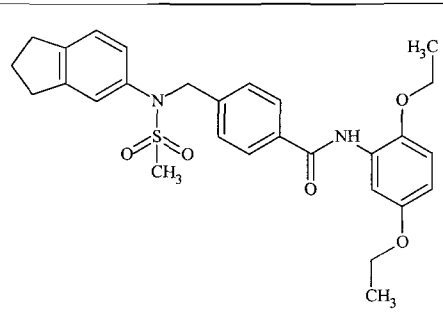
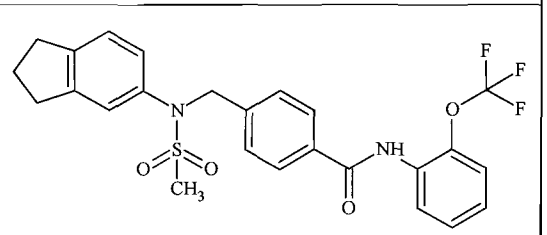
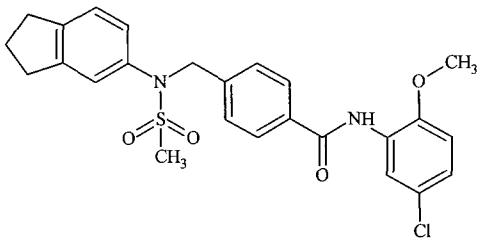
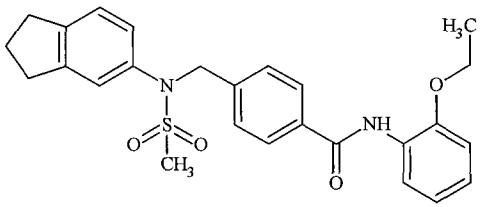
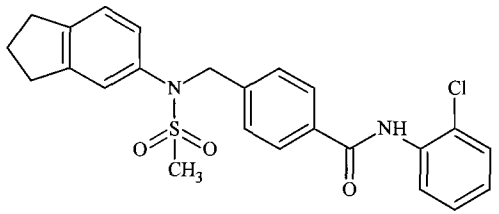
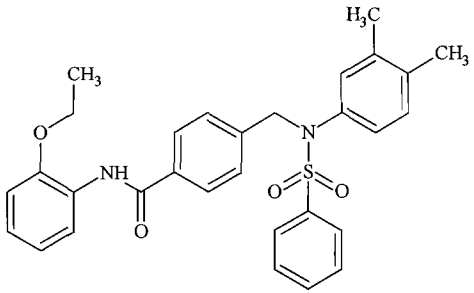
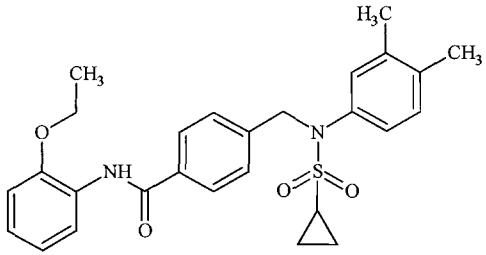
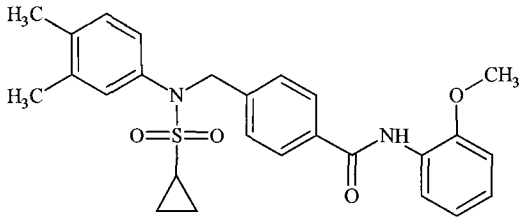
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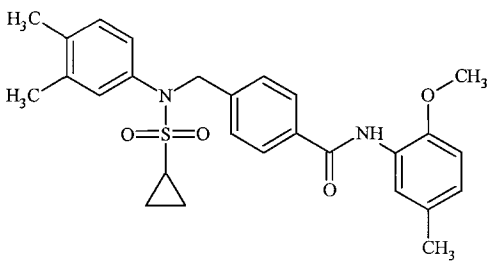
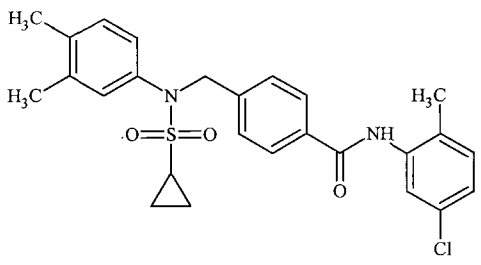
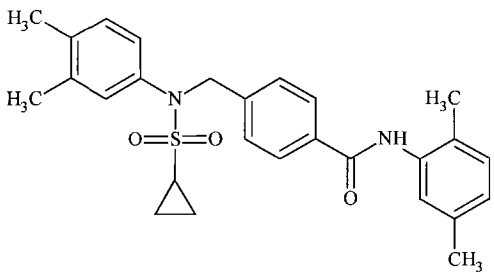
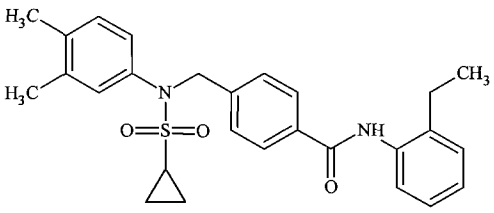
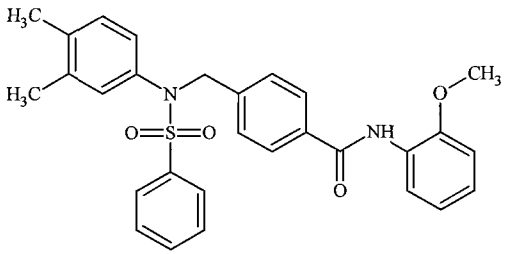
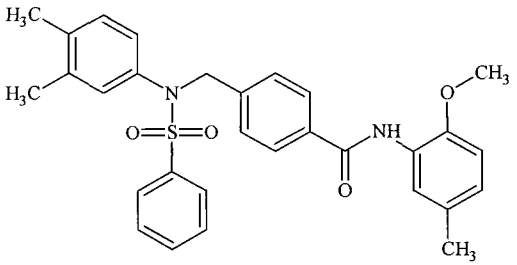
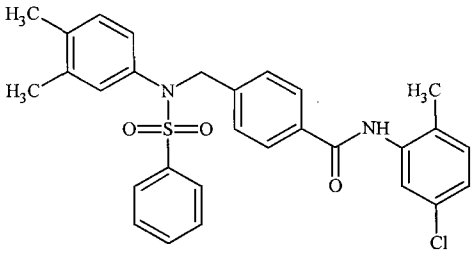
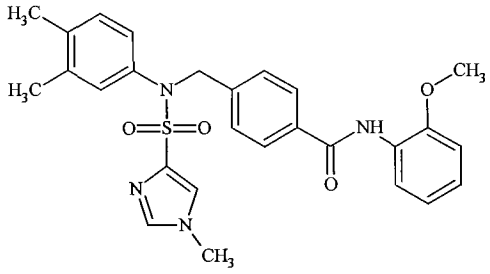
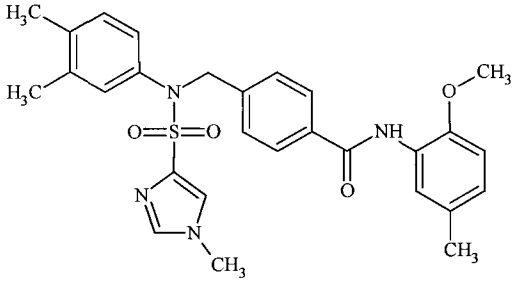
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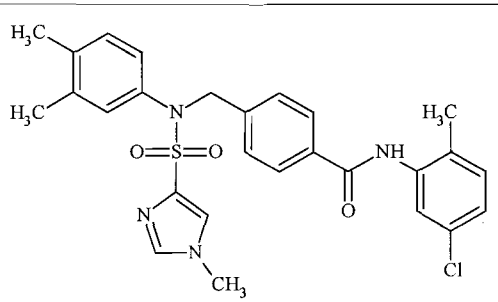
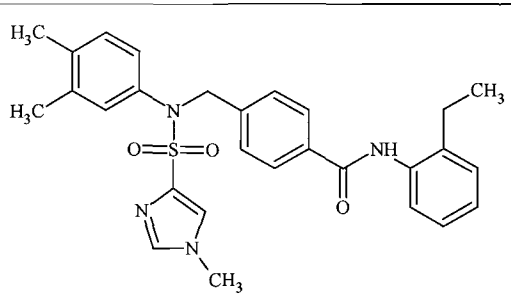
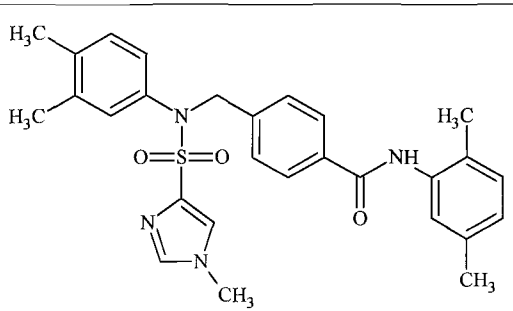
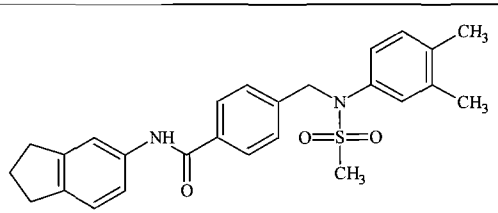
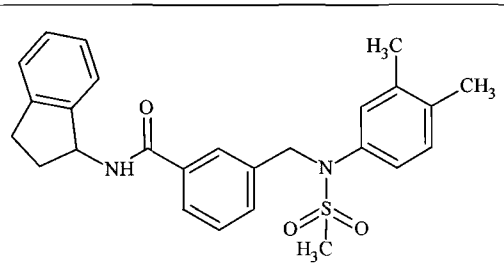
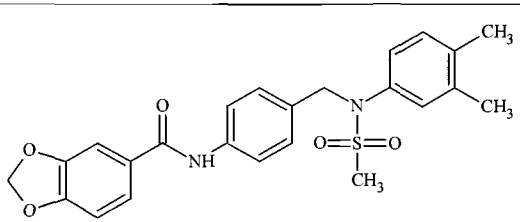
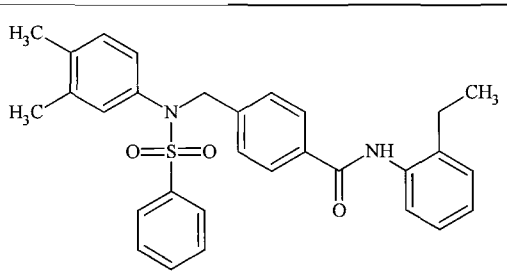
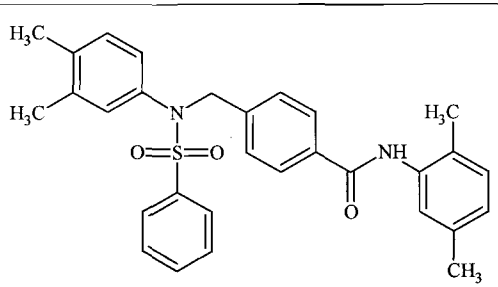
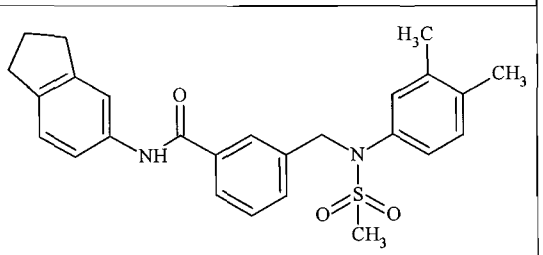
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| C.No. | Structure | C.No. | Structure | C.No. | Structure |
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| C.No. | Structure | C.No. | Structure | C.No. | Structure |
|---|---|---|---|---|---|
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| 232 |  | 233 |  | 234 |  |
| 235 |  | 236 |  | 237 |  |

| C.No. | Structure | C.No. | Structure | C.No. | Structure |
|---|---|---|---|---|---|
| 238 |  | 239 |  | 240 |  |
| 241 |  | 242 |  | 243 |  |
| 244 |  | 245 |  | 246 |  |

| C.No. | Structure | C.No. | Structure | C.No. | Structure |
|---|---|---|---|---|---|
| 247 |  | 248 |  | 249 |  |
| 250 |  | 251 |  | 252 |  |
| 253 |  | 254 |  | 255 |  |

| C.No. | Structure | C.No. | Structure | C.No. | Structure |
|---|---|---|---|---|---|
| 256 |  | 257 |  | 258 |  |
| 259 |  | 260 |  | 261 |  |
| 262 |  | 263 |  | 264 |  |

**Experimental**

Various solvents used were dried using drying reagents according to procedures described in the literature. Wherever room temperature or ambient temperature is used it is 25°C to 30°C.

Example 1: Synthesis of 3-{[(3,4-Dimethylphenyl)(Methylsulfonyl)Amino]Methyl}-*N*-(2-Methoxyphenyl)Benzamide (Compound No. 78) (Scheme II, Path A)

**Step a: Synthesis of 3-{[(3,4-dimethylphenyl)amino]methyl}benzoic acid**

To a stirred solution of 3-carboxybenzaldehyde (2 g, 13.321 mmoles) in methanol (5 ml) was added 3,4-dimethyl aniline (1.611 g, 13.321 mmoles) and glacial acetic acid (2 ml). The reaction mixture was allowed to stir for about 1 hour at room temperature and then cooled to 0°C. To it was added sodium cyanoborohydride (1.248 g, 19.981 mmoles) at 0°C and again stirred overnight at room temperature. After completion of reaction, a saturated solution of sodium bicarbonate was added until pH was neutral. The solvent was evaporated under vacuum and extracted with ethyl acetate. The organic layer was washed with water, dried over anhydrous sodium sulphate, filtered and evaporated under vacuum to afford the title compound as orange coloured solid. Yield: 1.8 g.

Mass spectrum (m/z, +ve ion mode): 256[$M^+$+1].

**Step b: Synthesis of 3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzoic acid**

To a stirred solution of compound obtained from Step a (3.4 g, 13.333 mmoles) in dry pyridine (10 ml) was added methanesulphonyl chloride (2.06 ml, 16.666 mmoles) at room temperature. The reaction mixture was stirred overnight at room temperature and then poured onto crushed ice. The yellow solid so obtained was filtered through a pump, washed with water and dried to obtain the title compound as grey solid. Yield: 2 g.

Mass spectrum (m/z, +ve ion mode): 334 [$M^+$+1].

**Step c: Synthesis of 3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxy phenyl)benzamide**

To a solution of compound obtained from Step b (0.08 g, 239.94 mmoles) in dry DMF (1 ml) was added 1-hydroxybenzotriazole (HOBT, 0.0356 g, 263.94 mmoles), *N*-ethyldiisopropyl amine (Hunig's base, 0.123 ml 719.83 mmoles) and *o*-anisidine (0.245 g, 287.88 mmoles) at room temperature. The reaction mixture was allowed to stir at room temperature for about 5 minutes and then 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide

hydrochloride (EDCI.HCl, 0.504 g 263.94 mmoles) was added to it. The reaction mixture was again stirred at room temperature for about 12 hours. After completion of the reaction, the solvent was evaporated under vacuum, added water and stirred at room temperature for about 15 minutes to 20 minutes. The resulting solid so obtained was collected through filtration and then purified through flash column chromatography eluting with ethyl acetate:hexane (3:7) to afford the title compound as white solid. Yield: 0.05 g.

$^1$H NMR (400 MHz, DMSO-$d_6$) δ 9.39 (s, 1H), 7.70 - 7.86 (m, 3H), 7.39 - 7.52 (m, 2H), 7.02 - 7.22 (m, 5H), 6.96 (td, $J$ = 1.25, 7.65 Hz, 1H), 4.91 (s, 2H), 3.82 (s, 3H), 3.07 (s, 3H), 2.16 (s, 3H), 2.14 (s, 3H).

Mass spectrum (m/z, +ve ion mode): 439 [$M^+$+1].

Example 2: Synthesis of *N*-(5-Chloro-2-Methoxyphenyl)-4-{[(3,4-Dimethylphenyl)(Methylsulfonyl)Amino]Methyl}Benzamide (Compound No. 57); (Scheme II, Path B)

**Step a: Preparation of 4-{[(3,4-dimethylphenyl)amino]methyl}benzonitrile**

To a stirred solution of 4-cyanobenzaldehyde (5.954 g, 45.454 mmoles) in methanol (25 ml) were added 3,4-dimethylaniline (5 g, 41.322 mmoles) and glacial acetic acid (2 ml). The reaction mixture was allowed to stir at room temperature for about one hour and then cooled to 0°C. To this ice-cooled solution was added sodium cyanoborohydride (3.873 g, 61.983 mmoles) and stirred overnight at room temperature. After completion, reaction mixture was quenched by addition of sodium bicarbonate until pH was neutral. The solvent was evaporated under vacuum and extracted with ethyl acetate. The combined organic layer was washed with water, dried over anhydrous sodium sulphate, filtered and evaporated under vacuum to afford the title compound as orange coloured solid. Yield: 4g.

Mass spectrum (m/z, +ve ion mode): 237 [$M^+$+1]

**Step b: Synthesis of *N*-(4-cyanobenzyl)-*N*-(3,4-dimethylphenyl)methanesulfonamide**

To a stirred solution of compound obtained from Step a (7 g, 29.647 mmoles) in dry pyridine (10 ml) was added methanesulphonyl chloride (6.792 g, 59.294 mmoles) at room temperature. The reaction mixture was allowed to stir at room temperature for about 12 hours and then poured into crushed ice. The white solid obtained was filtered through a pump, washed with water and dried to obtain the title compound as grey solid. Yield: 5 g.

Mass spectrum (m/z, +ve ion mode): 315 [$M^+$+1].

**Step c: Synthesis of 4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzoic acid**

To a solution of compound obtained from Step b (0.6 g, 1.91 mmoles) was added sodium hydroxide (5N, 0.305 ml, 7.643 mmoles) and hydrogen peroxide (30%, 0.2 ml) at room temperature and then heated to reflux for about 12 hours. The solvent was evaporated under vacuum, acidified with hydrochloric acid (5N) and then extracted with ethyl acetate. The ethyl acetate layer was washed with water, dried over anhydrous sodium sulphate, filtered and evaporated under vacuum to afford the title compound as white solid. Yield: 0.2 g.

Mass spectrum (m/z, +ve ion mode): 334 [$M^+$+1].

**Step 4: Synthesis of *N*-(5-chloro-2-methoxyphenyl)-4-{[(3,4-dimethylphenyl) (methylsulfonyl)amino]methyl}benzamide**

To a solution of compound obtained from Step c (0.1 g, 0.3003 mmoles) in *N*,*N*'-dimethylformamide (1 ml) were added 1-hydroxybenzotriazole (0.04 g, 0.3003 mmoles), *N*-ethyldiisopropyl amine (0.116 g, 0.9009 mmoles) and 3-chloro-5-methoxyaniline (0.047 g, 0.3003 mmoles) at room temperature. The reaction mixture was allowed to stir at room temperature for about 5 minutes and then 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride (0.086 g, 0.4505 mmoles) was added to it. The reaction mixture was again stirred at room temperature for about 12 hours. After completion, the solvent was evaporated under vacuum, diluted with water and extracted with ethyl acetate. The resulting organic layer was washed with water, dried over anhydrous sodium sulphate, filtered and evaporated under vacuum to afford an oily residue which was purified through flash column chromatography eluting with ethyl acetate:dichloromethane (3:7) to afford the title compound as white solid. Yield: 0.07g.

$^1$H NMR (400 MHz, DMSO-$d_6$) δ: 9.48 (s, 1H), 7.82 - 7.88 (m, 2H), 7.37 - 7.44 (m, 2H), 7.28 - 7.34 (m, 2H), 7.18 - 7.24 (m, 1H), 7.15 (d, $J$ = 13.64 Hz, 1H), 7.10 (d, $J$ = 8.08 Hz, 2H), 4.91 (s, 2H), 3.82 (s, 3H), 3.07 (s, 3H), 2.17 (s, 3H), 2.15 (s, 3H ).

Mass spectrum (m/z, +ve ion mode): 472 [$M^+$+1], 474 [$M^+$+1+2].

The compounds mentioned below were prepared by following the route of synthesis as described in Example 1 or Example 2:

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl)benzamide (Compound No. 34);
Mass spectrum (m/z, +ve ion mode): 439 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 35);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

*N*-(2,5-Diethoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzamide (Compound No. 36);
Mass spectrum (m/z, +ve ion mode): 497 [$M^+$+1],

*N*-(2,5-Difluorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 37);
Mass spectrum (m/z, +ve ion mode): 445 [$M^+$+1],

*N*-(2,5-Dimethoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 38);
Mass spectrum (m/z, +ve ion mode): 469 [$M^+$+1],

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 39);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

*N*-[2-(Benzyloxy)phenyl]-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 40);
Mass spectrum (m/z, +ve ion mode): 515 [$M^+$+1],

*N*-(2-Chloro-5-methoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 41);
Mass spectrum (m/z, +ve ion mode): 473 [$M^+$+1],

*N*-(2-Chlorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 42);
Mass spectrum (m/z, +ve ion mode): 443 [$M^+$+1],

*N*-[2-(Difluoromethoxy)phenyl]-4-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 43);
Mass spectrum (m/z, +ve ion mode): 475 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl) benzamide (Compound No. 44);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluoro-5-methylphenyl)benzamide (Compound No. 45);
Mass spectrum (m/z, +ve ion mode): 4417 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluoro-5-nitrophenyl)benzamide (Compound No. 46);
Mass spectrum (m/z, +ve ion mode): 472 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-fluoro-5-(trifluoromethyl)phenyl]benzamide (Compound No. 47);
Mass spectrum (m/z, +ve ion mode): 495 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluorophenyl) benzamide (Compound No. 48);
Mass spectrum (m/z, +ve ion mode): 427 [$M^+$+1],

*N*-(5-*tert*-Butyl-2-methoxyphenyl)-4-{[(3,4-dimethylphenyl) (methylsulfonyl)amino]methyl}benzamide (Compound No. 49);
Mass spectrum (m/z, +ve ion mode): 495 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-methoxy-5-(trifluoromethyl)phenyl]benzamide (Compound No. 50);
Mass spectrum (m/z, +ve ion mode): 507 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-phenoxyphenyl)benzamide (Compound No. 51);
Mass spectrum (m/z, +ve ion mode): 501 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(propan-2-yl)phenyl]benzamide (Compound No. 52);
Mass spectrum (m/z, +ve ion mode): 451 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(2-methylpropyl)phenyl] benzamide (Compound No. 53);
Mass spectrum (m/z, +ve ion mode): 465 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(trifluoromethoxy) phenyl]benzamide (Compound No. 54);
Mass spectrum (m/z, +ve ion mode): 493 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(trifluoromethyl)phenyl] benzamide (Compound No. 55);
Mass spectrum (m/z, +ve ion mode): 477 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-methoxy-2-methylphenyl)benzamide (Compound No. 58);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methylphenyl) benzamide (Compound No. 59);
Mass spectrum (m/z, +ve ion mode): 423 [$M^+$+1],

*N*-(Biphenyl-2-yl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 60);
Mass spectrum (m/z, +ve ion mode): 485 [$M^+$+1],

*N*-(2-Bromophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 61);
Mass spectrum (m/z, +ve ion mode): 488 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(methylsulfanyl) phenyl]benzamide (Compound No. 62);
Mass spectrum (m/z, +ve ion mode): 4553 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(phenylsulfanyl) phenyl]benzamide (Compound No. 63);
Mass spectrum (m/z, +ve ion mode): 517 [$M^+$+1],

*N*-(5-Chloro-2-fluorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 64);
Mass spectrum (m/z, +ve ion mode): 460 [$M^+$+1], 462 [$M^+$+1+2]

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-fluoro-2-methylphenyl)benzamide (Compound No. 65);
Mass spectrum (m/z, +ve ion mode): 441 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(4-methoxybiphenyl-3-yl)benzamide (Compound No. 66);
Mass spectrum (m/z, +ve ion mode): 515 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl) benzamide (Compound No. 68);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 69);
Mass spectrum (m/z, +ve ion mode): 467 [$M^+$+1],

*N*-(5-Chloro-2-methylphenyl)-4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino] methyl}benzamide (Compound No. 70);
Mass spectrum (m/z, +ve ion mode): 472 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl)benzamide (Compound No. 71);
Mass spectrum (m/z, +ve ion mode): 451 [$M^+$+1],

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl} benzamide (Compound No. 72);
Mass spectrum (m/z, +ve ion mode): 451 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl) benzamide (Compound No. 73);
Mass spectrum (m/z, +ve ion mode): 467 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 74);
Mass spectrum (m/z, +ve ion mode): 481 [$M^+$+1],

*N*-(5-Chloro-2-methylphenyl)-4-{[(3,4-dimethylphenyl)(propylsulfonyl) amino]methyl}benzamide (Compound No. 75);
Mass spectrum (m/z, +ve ion mode): 486 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl) benzamide (Compound No. 76);
Mass spectrum (m/z, +ve ion mode): 465 [$M^+$+1],

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(propylsulfonyl)amino]methyl} benzamide (Compound No. 77);
Mass spectrum (m/z, +ve ion mode): 465 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl) benzamide (Compound No. 78);
Mass spectrum (m/z, +ve ion mode): 439 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 79);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

*N*-(2,5-Diethoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 80);
Mass spectrum (m/z, +ve ion mode): 497 [$M^+$+1],

*N*-(2,5-Difluorophenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 81);
Mass spectrum (m/z, +ve ion mode): 445 [$M^+$+1],

*N*-(2,5-Dimethoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 82);
Mass spectrum (m/z, +ve ion mode): 467 [$M^+$+1],

*N*-(2,5-Dimethylphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 83);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

*N*-[2-(Benzyloxy)phenyl]-3-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 84);
Mass spectrum (m/z, +ve ion mode): 515 [$M^+$+1],

*N*-(2-Chloro-5-methoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 85);
Mass spectrum (m/z, +ve ion mode): 473 [$M^+$+1],

*N*-(2-Chlorophenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 86);
Mass spectrum (m/z, +ve ion mode): 443 [$M^+$+1],

*N*-[2-(Difluoromethoxy)phenyl]-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 87);
Mass spectrum (m/z, +ve ion mode): 475[$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl) benzamide (Compound No. 88);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluoro-5-methylphenyl)benzamide (Compound No. 89);
Mass spectrum (m/z, +ve ion mode): 441 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluorophenyl) benzamide (Compound No. 90);
Mass spectrum (m/z, +ve ion mode): 427 [$M^+$+1],

*N*-(5-*tert*-Butyl-2-methoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 91);
Mass spectrum (m/z, +ve ion mode): 495 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-methoxy-5-(trifluoromethyl)phenyl]benzamide (Compound No. 92) ;
Mass spectrum (m/z, +ve ion mode): 507 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-phenoxyphenyl) benzamide (Compound No. 93);
Mass spectrum (m/z, +ve ion mode): 501 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(2-methylpropyl) phenyl]benzamide (Compound No. 94);
Mass spectrum (m/z, +ve ion mode): 465 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-propylphenyl) benzamide (Compound No. 95);
Mass spectrum (m/z, +ve ion mode): 451 [$M^+$+1],

*N*-(Biphenyl-2-yl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 96);
Mass spectrum (m/z, +ve ion mode): 485 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(methylsulfanyl) phenyl]benzamide (Compound No. 97);
Mass spectrum (m/z, +ve ion mode): 455 [$M^+$+1],

*N*-(5-Chloro-2-methoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 98);
Mass spectrum (m/z, +ve ion mode): 473 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-fluoro-2-methylphenyl)benzamide (Compound No. 99);
Mass spectrum (m/z, +ve ion mode): 441 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-methoxy-2-methylphenyl)benzamide (Compound No. 100);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methylphenyl)benzamide (Compound No. 101);
Mass spectrum (m/z, +ve ion mode): 423 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(4-methoxybiphenyl-3-yl)benzamide (Compound No. 102);
Mass spectrum (m/z, +ve ion mode): 515 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[4-(trifluoromethoxy)phenyl]benzamide (Compound No. 173);
Mass spectrum (m/z, +ve ion mode): 493 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(3-fluorophenyl)benzamide (Compound No. 174);
Mass spectrum (m/z, +ve ion mode): 427 [$M^+$+1],

*N*-(4-*tert*-Butylphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 175);
Mass spectrum (m/z, +ve ion mode): 465 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-phenylbenzamide (Compound No. 176);
Mass spectrum (m/z, +ve ion mode): 409 [$M^+$+1],

*N*-(4-Bromophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 177);
Mass spectrum (m/z, +ve ion mode): 488 [$M^+$+1],

*N*-(3-Bromophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 178);
Mass spectrum (m/z, +ve ion mode): 488 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(3-methoxyphenyl) benzamide (Compound No. 179);
Mass spectrum (m/z, +ve ion mode): 439 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(4-methoxyphenyl) benzamide (Compound No. 180);
Mass spectrum (m/z, +ve ion mode): 439 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(3-methylphenyl) benzamide (Compound No. 181);
Mass spectrum (m/z, +ve ion mode): 423 [$M^+$+1],

*N*-(3-Chlorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 182);
Mass spectrum (m/z, +ve ion mode): 443 [$M^+$+1],

*N*-(4-Chlorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 183);
Mass spectrum (m/z, +ve ion mode): 443 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl) benzamide (Compound No. 194);
Mass spectrum (m/z, +ve ion mode): 467 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl) benzamide (Compound No. 195);
Mass spectrum (m/z, +ve ion mode): 481 [$M^+$+1],

*N*-(2,3-Dihydro-1*H*-inden-1-yl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 196);
Mass spectrum (m/z, +ve ion mode): 449 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl)benzamide (Compound No. 218);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

*N*-(3,4-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 219);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl) benzamide (Compound No. 237);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

4-{[2,3-Dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}-*N*-(2,5-dimethoxyphenyl)benzamide (Compound No. 238);
Mass spectrum (m/z, +ve ion mode): 481 [$M^+$+1],

*N*-(2,5-Diethoxyphenyl)-4-{[2,3-dihydro-1*H*-inden-5-yl(methylsulfonyl)amino] methyl}benzamide (Compound No. 239);
Mass spectrum (m/z, +ve ion mode): 509 [$M^+$+1],

4-{[2,3-Dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}-*N*-[2-(trifluoromethoxy)phenyl]benzamide (Compound No. 240);
Mass spectrum (m/z, +ve ion mode): 505 [$M^+$+1],

*N*-(5-Chloro-2-methoxyphenyl)-4-{[2,3-dihydro-1*H*-inden-5-yl(methylsulfonyl) amino]methyl}benzamide (Compound No. 241);
Mass spectrum (m/z, +ve ion mode): 485 [$M^+$+1],

4-{[2,3-Dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl)benzamide (Compound No. 242);
Mass spectrum (m/z, +ve ion mode): 465 [$M^+$+1],

*N*-(2-Chlorophenyl)-4-{[2,3-dihydro-1*H*-inden-5-yl(methylsulfonyl) amino]methyl}benzamide (Compound No. 243);
Mass spectrum (m/z, +ve ion mode): 455 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl) benzamide (Compound No. 244);
Mass spectrum (m/z, +ve ion mode): 515 [$M^+$+1],

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-ethoxyphenyl)benzamide (Compound No. 245);
Mass spectrum (m/z, +ve ion mode): 479 [$M^+$+1],

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-methoxyphenyl)benzamide (Compound No. 246);
Mass spectrum (m/z, +ve ion mode): 465 [$M^+$+1],

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 247);
Mass spectrum (m/z, +ve ion mode): 479 [$M^+$+1],

*N*-(5-Chloro-2-methylphenyl)-4-{[(cyclopropylsulfonyl)(3,4-dimethylphenyl) amino]methyl}benzamide (Compound No. 248);
Mass spectrum (m/z, +ve ion mode): 484 [$M^+$+1],

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2,5-dimethylphenyl)benzamide (Compound No. 249);
Mass spectrum (m/z, +ve ion mode): 463 [$M^+$+1],

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-ethylphenyl)benzamide (Compound No. 250);
Mass spectrum (m/z, +ve ion mode): 4635 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl)benzamide (Compound No. 251);
Mass spectrum (m/z, +ve ion mode): 501 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 252);
Mass spectrum (m/z, +ve ion mode): 515 [$M^+$+1],

*N*-(5-Chloro-2-methylphenyl)-4-{[(3,4-dimethylphenyl)(phenylsulfonyl) amino]methyl}benzamide (Compound No. 253);
Mass spectrum (m/z, +ve ion mode): 520 [$M^+$+1],

4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)-*N*-(2-methoxy phenyl)benzamide (Compound No. 254);
Mass spectrum (m/z, +ve ion mode): 505 [$M^+$+1],

4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 255);
Mass spectrum (m/z, +ve ion mode): 519 [$M^+$+1],

*N*-(5-Chloro-2-methylphenyl)-4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)benzamide (Compound No. 256);
Mass spectrum (m/z, +ve ion mode): 524 [$M^+$+1],

4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)-*N*-(2-ethylphenyl)benzamide (Compound No. 257);
Mass spectrum (m/z, +ve ion mode): 503 [$M^+$+1],

*N*-(2,5-Dimethylphenyl)-4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)benzamide (Compound No. 258);
Mass spectrum (m/z, +ve ion mode): 503 [$M^+$+1],

*N*-(2,3-Dihydro-1*H*-inden-5-yl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 259);
Mass spectrum (m/z, +ve ion mode): 449 [$M^+$+1],

*N*-(2,3-Dihydro-1*H*-inden-1-yl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 260);
Mass spectrum (m/z, +ve ion mode): 449 [$M^+$+1],

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl) benzamide (Compound No. 262);
Mass spectrum (m/z, +ve ion mode): 499 [$M^+$+1],

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino] methyl}benzamide (Compound No. 263);
Mass spectrum (m/z, +ve ion mode): 499 [$M^+$+1],

*N*-(2,3-Dihydro-1*H*-inden-5-yl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 264).
Mass spectrum (m/z, +ve ion mode): 449 [$M^+$+1].

Example 3: Synthesis of *N*-(4-{[(3,4-Dimethylphenyl)(Ethylsulfonyl)Amino] Methyl}Phenyl)-2-Ethoxybenzamide (Compound No. 2) Scheme I, Path C

**Step a: Synthesis of 3,4-Dimethyl-*N*-(4-Nitrobenzyl)Aniline**

To a stirred solution of 4-nitrobenzaldehyde (30.179 g, 199.704 mmoles) in methanol (100 ml) were added 3,4-dimethyl aniline (22 g, 181.549 mmoles) and glacial acetic acid (10 ml). The reaction mixture was stirred for about one hour at room

temperature and then cooled to 0°C. To it was added sodium cyanoborohydride (17 g, 272.324 mmoles) at 0°C and then stirred overnight at room temperature. The reaction mixture was quenched by addition of a saturated solution of sodium bicarbonate until pH was neutral. The solvent was evaporated under vacuum and extracted with ethyl acetate. The combined organic layer was washed with water, dried over anhydrous sodium sulphate, filtered and evaporated under vacuum to afford the title compound as orange colored solid. Yield: 45 g.

Mass spectrum (m/z, +ve ion mode): 257 [$M^+$+1].

**Step b: Synthesis of *N*-(3,4-dimethylphenyl)-*N*-(4-nitrobenzyl)methanesulfonamide**

To a stirred solution of compound obtained from Step a (47 g, 183.593 mmoles) in dry pyridine (100 ml) was added methanesulphonyl chloride (28.42 ml, 367.187 mmoles) at room temperature. The reaction mixture was stirred overnight at room temperature and then poured into crushed ice. The yellow solid obtained was filtered through pump, washed with water and dried to obtain the title compound as grey solid. Yield: 30 g.

Mass spectrum (m/z, +ve ion mode): 335 [$M^+$+1].

**Step c: Synthesis of *N*-(4-aminobenzyl)-*N*-(3,4-dimethylphenyl)methanesulfonamide**

To a cold solution of compound obtained from Step b (50 g, 149.70 mmoles) in ethanol (300 ml) at 0°C was added Raney Nickel (15 g, ~1/3 of the starting material) and stirred at the same temperature for about 10 minutes. To it was added dropwise hydrazine hydrate (29.9 ml, 598.802 mmoles) over a period of 30 minutes. After completion, the reaction mixture was filtered through a prewashed celite pad and the solvent was evaporated under vacuum to afford a crude residue. The reaction mixture was washed with water and extracted with ethyl acetate. The organic layer was filtered, dried over anhydrous sodium sulphate, filtered and evaporated the solvent under vacuum to afford the title compound as light brown solid. Yield: 20 g

Mass spectrum (m/z, +ve ion mode): 305 [$M^+$+1].

**Step d: Synthesis of *N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}phenyl)-2-ethoxybenzamide**

To a solution of compound obtained from Step c (0.1 g, 0.328 mmoles) in dry *N*,*N*'-dimethylformamide (1 ml) were added 1-hydroxybenzotriazole (0.066 g, 0.492 mmoles), *N*-ethyldiisopropyl amine (0.174 ml 0.985 mmoles) and 2-ethoxybenzoic acid (0.081 g, 0.492 mmoles) at room temperature. The reaction mixture was stirred at room

temperature for about 5 minutes and then 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride (0.094 g 0.492 mmoles) was added to it. The reaction mixture was again stirred overnight at room temperature. After completion of the reaction, the solvent was evaporated under vacuum and a saturated solution of sodium bicarbonate was added and then stirred at room temperature for about 15 minutes to 20 minutes. The resulting solid so obtained was collected through filtration and then purified through flash column chromatography eluting with ethyl acetate:hexane (3:7) to afford the title compound as white solid. Yield: 0.07 g.

$^1$H NMR (400 MHz, $CDCl_3$) δ 10.14 (s, 1H), 8.10 - 8.38 (m, 2H), 7.32 - 7.66 (m, 2H), 7.18 - 7.33 (m, 3H), 6.90 - 7.19 (m, 4H), 4.78 (s, 2H), 4.28 (q, $J$ = 7.03 Hz, 2H), 2.94 (s, 3H), 2.21 (s, 3H), 2.20 (s, 3H), 1.60 (t, $J$ = 7.40 Hz, 3H).

Mass spectrum (m/z, +ve ion mode): 453[$M^+$+1].

The compounds mentioned below were prepared by following the route of synthesis as described in Example 3.

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-(4-methylphenyl) acetamide (Compound No. 1);
Mass spectrum (m/z, +ve ion mode): 423 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 2);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxy benzamide (Compound No. 3);
Mass spectrum (m/z, +ve ion mode): 439 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 4);
Mass spectrum (m/z, +ve ion mode): 4239 [$M^+$+1],

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 5);
Mass spectrum (m/z, +ve ion mode): 443 [$M^+$+1],

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 6);
Mass spectrum (m/z, +ve ion mode): 443 [$M^+$+1],

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 7);
Mass spectrum (m/z, +ve ion mode): 443 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 8);
Mass spectrum (m/z, +ve ion mode): 427 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-(trifluoromethyl)benzamide (Compound No. 9);
Mass spectrum (m/z, +ve ion mode): 477 [$M^+$+1],

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 10);
Mass spectrum (m/z, +ve ion mode): 473 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3,4-dimethoxybenzamide (Compound No. 11);
Mass spectrum (m/z, +ve ion mode): 469 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 12);
Mass spectrum (m/z, +ve ion mode): 469 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,4-difluorobenzamide (Compound No. 13);
Mass spectrum (m/z, +ve ion mode): 445 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxy benzamide (Compound No. 14);
Mass spectrum (m/z, +ve ion mode): 439 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 15);
Mass spectrum (m/z, +ve ion mode): 427 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-difluorobenzamide (Compound No. 16);
Mass spectrum (m/z, +ve ion mode): 445 [$M^+$+1],

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 17);
Mass spectrum (m/z, +ve ion mode): 461 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-fluoro-3-methylbenzamide (Compound No. 18);
Mass spectrum (m/z, +ve ion mode): 441 [$M^+$+1],

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-6-fluorobenzamide (Compound No. 19);
Mass spectrum (m/z, +ve ion mode): 461 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-(trifluoro methoxy)benzamide (Compound No. 20);
Mass spectrum (m/z, +ve ion mode): 493 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethyl)benzamide (Compound No. 21);
Mass spectrum (m/z, +ve ion mode): 477 [$M^+$+1],

2,5-Dichloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 22);
Mass spectrum (m/z, +ve ion mode): 478 [$M^+$+1],

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 23);
Mass spectrum (m/z, +ve ion mode): 473 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3,5-dimethoxybenzamide (Compound No. 24);
Mass spectrum (m/z, +ve ion mode): 469 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methoxy-4-methylbenzamide (Compound No. 25);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,3-dimethylbenzamide (Compound No. 26);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3,5-dimethylbenzamide (Compound No. 27);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

3-(Dimethylamino)-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 28);
Mass spectrum (m/z, +ve ion mode): 4529 [$M^+$+1],

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 29);
Mass spectrum (m/z, +ve ion mode): 434 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-propylbenzamide (Compound No. 30);
Mass spectrum (m/z, +ve ion mode): 451 [$M^+$+1],

4-*tert*-Butyl-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 31);
Mass spectrum (m/z, +ve ion mode): 465 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 32);
Mass spectrum (m/z, +ve ion mode): 423 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,4,6-trifluorobenzamide (Compound No. 33);
Mass spectrum (m/z, +ve ion mode): 463 [$M^+$+1],

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 56);
Mass spectrum (m/z, +ve ion mode): 457 [$M^+$+1],

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methylbenzamide (Compound No. 67);
Mass spectrum (m/z, +ve ion mode): 457 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 103);
Mass spectrum (m/z, +ve ion mode): 489 [$M^+$+1],

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 104);
Mass spectrum (m/z, +ve ion mode): 506 [$M^+$+1],

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 105);
Mass spectrum (m/z, +ve ion mode): 496 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 106);
Mass spectrum (m/z, +ve ion mode): 501 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 107);
Mass spectrum (m/z, +ve ion mode): 485 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 108);
Mass spectrum (m/z, +ve ion mode): 489 [$M^+$+1],

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 109);
Mass spectrum (m/z, +ve ion mode): 506 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-(trifluoro methoxy)benzamide (Compound No. 110);
Mass spectrum (m/z, +ve ion mode): 555 [$M^+$+1],

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 111);
Mass spectrum (m/z, +ve ion mode): 496 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 112);
Mass spectrum (m/z, +ve ion mode): 501 [$M^+$+1],

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 113);
Mass spectrum (m/z, +ve ion mode): 520 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-methylbenzamide (Compound No. 114);
Mass spectrum (m/z, +ve ion mode): 485 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 115);
Mass spectrum (m/z, +ve ion mode): 489 [$M^+$+1],

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 116);
Mass spectrum (m/z, +ve ion mode): 506 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-(trifluoro methoxy)benzamide (Compound No. 117);
Mass spectrum (m/z, +ve ion mode): 555 [$M^+$+1],

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 118);
Mass spectrum (m/z, +ve ion mode): 496 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 119);
Mass spectrum (m/z, +ve ion mode): 531 [$M^+$+1],

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 120);
Mass spectrum (m/z, +ve ion mode): 536 [$M^+$+1],

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 121);
Mass spectrum (m/z, +ve ion mode): 524 [$M^+$+1],

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino] methyl}phenyl)-4-methoxybenzamide (Compound No. 122);
Mass spectrum (m/z, +ve ion mode): 502 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-5-fluoro-2-methoxybenzamide (Compound No. 123);
Mass spectrum (m/z, +ve ion mode): 485 [$M^+$+1],

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl} phenyl)-2-fluorobenzamide (Compound No. 124);
Mass spectrum (m/z, +ve ion mode): 490 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 125);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 126);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 127);
Mass spectrum (m/z, +ve ion mode): 467 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 128);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 129);
Mass spectrum (m/z, +ve ion mode): 441 [$M^+$+1],

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino] methyl}phenyl)benzamide (Compound No. 130);
Mass spectrum (m/z, +ve ion mode): 457 [$M^+$+1],

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 131);
Mass spectrum (m/z, +ve ion mode): 448 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 132);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 133);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 134);
Mass spectrum (m/z, +ve ion mode): 441 [$M^+$+1],

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 135);
Mass spectrum (m/z, +ve ion mode): 457 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethoxy)benzamide (Compound No. 136);
Mass spectrum (m/z, +ve ion mode): 507 [$M^+$+1],

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 137);
Mass spectrum (m/z, +ve ion mode): 448 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 138);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 139);
Mass spectrum (m/z, +ve ion mode): 472 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-methylbenzamide (Compound No. 140);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 141);
Mass spectrum (m/z, +ve ion mode): 441 [$M^+$+1],

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 142);
Mass spectrum (m/z, +ve ion mode): 457 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethoxy)benzamide (Compound No. 143);
Mass spectrum (m/z, +ve ion mode): 507 [$M^+$+1],

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 144);
Mass spectrum (m/z, +ve ion mode): 448 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 145);
Mass spectrum (m/z, +ve ion mode): 483 [$M^+$+1],

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 146);
Mass spectrum (m/z, +ve ion mode): 488 [$M^+$+1],

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 147);
Mass spectrum (m/z, +ve ion mode): 475 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-5-fluoro-2-methoxybenzamide (Compound No. 148);
Mass spectrum (m/z, +ve ion mode): 471 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 149);
Mass spectrum (m/z, +ve ion mode): 501 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 150);
Mass spectrum (m/z, +ve ion mode): 515 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 151);
Mass spectrum (m/z, +ve ion mode): 485 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-5-fluoro-2-methoxybenzamide (Compound No. 152);
Mass spectrum (m/z, +ve ion mode): 519 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 153);
Mass spectrum (m/z, +ve ion mode): 471 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 154);
Mass spectrum (m/z, +ve ion mode): 467 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 155);
Mass spectrum (m/z, +ve ion mode): 481 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 156);
Mass spectrum (m/z, +ve ion mode): 451 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 157);
Mass spectrum (m/z, +ve ion mode): 455 [$M^+$+1],

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 158);
Mass spectrum (m/z, +ve ion mode): 472 [$M^+$+1],

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 159);

Mass spectrum (m/z, +ve ion mode): 462 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 160);
Mass spectrum (m/z, +ve ion mode): 467 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 161);
Mass spectrum (m/z, +ve ion mode): 451 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 162);
Mass spectrum (m/z, +ve ion mode): 455 [$M^+$+1],

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 163);
Mass spectrum (m/z, +ve ion mode): 472 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethoxy)benzamide (Compound No. 164);
Mass spectrum (m/z, +ve ion mode): 521 [$M^+$+1],

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 165);
Mass spectrum (m/z, +ve ion mode): 462 [$M^+$+1],

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 166);
Mass spectrum (m/z, +ve ion mode): 486 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-4-methylbenzamide (Compound No. 167);
Mass spectrum (m/z, +ve ion mode): 4519 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 168);
Mass spectrum (m/z, +ve ion mode): 455 [$M^+$+1],

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 169);
Mass spectrum (m/z, +ve ion mode): 472 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethoxy)benzamide (Compound No. 170);
Mass spectrum (m/z, +ve ion mode): 521 [$M^+$+1],

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 171);
Mass spectrum (m/z, +ve ion mode): 462 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 172);
Mass spectrum (m/z, +ve ion mode): 423 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 184);

Mass spectrum (m/z, +ve ion mode): 409 [$M^+$+1],

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 185);
Mass spectrum (m/z, +ve ion mode): 434 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-phenoxy benzamide (Compound No. 186);
Mass spectrum (m/z, +ve ion mode): 501 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methoxy benzamide (Compound No. 187);
Mass spectrum (m/z, +ve ion mode): 439 [$M^+$+1],

3-Bromo-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 188);
Mass spectrum (m/z, +ve ion mode): 488 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-(trifluoro methoxy)benzamide (Compound No. 189);
Mass spectrum (m/z, +ve ion mode): 493 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 190);
Mass spectrum (m/z, +ve ion mode): 427 [$M^+$+1],

4-Bromo-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 191);
Mass spectrum (m/z, +ve ion mode): 488 [$M^+$+1],

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}phenyl)benzamide (Compound No. 192);
Mass spectrum (m/z, +ve ion mode): 434 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethyl)benzamide (Compound No. 193);
Mass spectrum (m/z, +ve ion mode): 477 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-difluoro benzamide (Compound No. 197);
Mass spectrum (m/z, +ve ion mode): 445 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,3-dimethoxybenzamide (Compound No. 198);
Mass spectrum (m/z, +ve ion mode): 469 [$M^+$+1],

2,5-Dichloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 199);
Mass spectrum (m/z, +ve ion mode): 478 [$M^+$+1],

3-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 200);
Mass spectrum (m/z, +ve ion mode): 443 [$M^+$+1],

5-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 201);

Mass spectrum (m/z, +ve ion mode): 473 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 202);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 203);
Mass spectrum (m/z, +ve ion mode): 423 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 204);
Mass spectrum (m/z, +ve ion mode): 439 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 205);
Mass spectrum (m/z, +ve ion mode): 427 [$M^+$+1],

2-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 206);
Mass spectrum (m/z, +ve ion mode): 443 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 207);
Mass spectrum (m/z, +ve ion mode): 409 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 208);
Mass spectrum (m/z, +ve ion mode): 439 [$M^+$+1],

2-Cyano-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 209);
Mass spectrum (m/z, +ve ion mode): 434 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 210);
Mass spectrum (m/z, +ve ion mode): 439 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-ethoxybenzamide (Compound No. 211);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 212);
Mass spectrum (m/z, +ve ion mode): 469 [$M^+$+1],

3-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 213);
Mass spectrum (m/z, +ve ion mode): 473 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-dimethylbenzamide (Compound No. 214);
Mass spectrum (m/z, +ve ion mode): 437 [$M^+$+1],

5-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 215);

Mass spectrum (m/z, +ve ion mode): 461 [$M^+$+1],

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-(trifluoromethoxy)benzamide (Compound No. 216);
Mass spectrum (m/z, +ve ion mode): 493 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 217);
Mass spectrum (m/z, +ve ion mode): 497 [$M^+$+1],

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl) phenyl]-2-ethoxybenzamide (Compound No. 220);
Mass spectrum (m/z, +ve ion mode): 519 [$M^+$+1],

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl) phenyl]-2-fluorobenzamide (Compound No. 221);
Mass spectrum (m/z, +ve ion mode): 493 [$M^+$+1],

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl] amino} methyl)phenyl]-2,5-dimethoxybenzamide (Compound No. 222);
Mass spectrum (m/z, +ve ion mode): 535 [$M^+$+1],

3-Chloro-*N*-[4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl] amino}methyl)phenyl]-4-methoxybenzamide (Compound No. 223);
Mass spectrum (m/z, +ve ion mode): 540 [$M^+$+1],

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino} methyl)phenyl]-2-methoxybenzamide (Compound No. 224);
Mass spectrum (m/z, +ve ion mode): 505 [$M^+$+1],

5-Chloro-*N*-[4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)phenyl]-2-methoxybenzamide (Compound No. 225);
Mass spectrum (m/z, +ve ion mode): 540 [$M^+$+1],

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2-ethoxy benzamide (Compound No. 226);
Mass spectrum (m/z, +ve ion mode): 479 [$M^+$+1],

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 227);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1],

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 228);
Mass spectrum (m/z, +ve ion mode): 495 [$M^+$+1],

3-Chloro-*N*-(4-{[(cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl} phenyl)-4-methoxybenzamide (Compound No. 229);
Mass spectrum (m/z, +ve ion mode): 499 [$M^+$+1], 501 [$M^+$+1+2],

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 230);
Mass spectrum (m/z, +ve ion mode): 465 [$M^+$+1],

5-Chloro-*N*-(4-{[(cyclopropylsulfonyl)(3,4-dimethylphenyl)amino] methyl}phenyl)-2-methoxybenzamide (Compound No. 231);

Mass spectrum (m/z, +ve ion mode): 500 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 232);
Mass spectrum (m/z, +ve ion mode): 481 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 233);
Mass spectrum (m/z, +ve ion mode): 455 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 234);
Mass spectrum (m/z, +ve ion mode): 497 [$M^+$+1],

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 235);
Mass spectrum (m/z, +ve ion mode): 502 [$M^+$+1],

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 236);
Mass spectrum (m/z, +ve ion mode): 502 [$M^+$+1],

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-1,3-benzodioxole-5-carboxamide (Compound No. 261);
Mass spectrum (m/z, +ve ion mode): 453 [$M^+$+1].

Example 4: Synthesis of *N*-(2,5-Diethoxyphenyl)-4-{[(3,4-Dimethylphenyl)(Methylsulfonyl)Amino]Methyl}Benzamide (Compound No. 36)

**Step a: Synthesis of 4-{[(3,4-dimethylphenyl)amino]methyl}benzonitrile**

To a stirred solution of 4-cyanobenzaldehyde (5.954 g, 45.454 mmoles) in methanol (25 ml) were added 3,4-dimethyl aniline (5 g, 41.322 mmoles) and glacial acetic acid (2 ml). The reaction mixture was stirred for about one hour at room temperature and then cooled to 0°C. To it was added sodium cyanoborohydride (3.873 g, 61.983 mmoles) at 0°C and then stirred at room temperature for about 12 hours. After completion, a saturated solution of sodium bicarbonate was added until pH was neutral. The solvent was evaporated under vacuum and extracted with ethyl acetate. The organic layer was washed with water, dried over anhydrous sodium sulphate, filtered and evaporated under vacuum to afford the title compound as orange coloured solid. Yield: 4 g.

Mass spectrum (m/z, +ve ion mode): 237[$M^+$+1].

**Step b: Synthesis of *N*-(4-cyanobenzyl)-*N*-(3,4-dimethylphenyl)methanesulfonamide**

To a stirred solution of compound obtained from Step a (7 g, 29.647 mmoles) in dry pyridine (10 ml) was added methanesulphonyl chloride (6.792 g, 59.294 mmoles) at room temperature. The reaction mixture was stirred at room temperature for about 12

hours and then poured onto crushed ice. The white solid so obtained was filtered through a pump, washed with water and dried to obtain the title compound as grey solid. Yield: 5 g.

Mass spectrum (m/z, +ve ion mode): 315[$M^+$+1].

**Step c: Synthesis of 4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzoic acid**

To a solution of compound obtained from Step b (0.6 g, 1.91 mmoles) were added sodium hydroxide (5N, 0.305 ml, 7.643 mmoles) and hydrogen peroxide (30%, 0.2 ml) at room temperature and then heated to reflux for about 12 hours. The solvent was evaporated under vacuum, acidified with hydrochloric acid (5N) and then extracted with ethyl acetate. The ethyl acetate layer was washed with water, dried over anhydrous sodium sulphate, filtered and evaporated under vacuum to afford the title compound as white solid. Yield: 0.2 g.

Mass spectrum (m/z, +ve ion mode): 334[$M^+$+1].

**Step d: Synthesis of *N*-(2,5-diethoxyphenyl)-4-{[(3,4-dimethylphenyl) (methylsulfonyl)amino]methyl}benzamide**

To a solution of compound obtained from Step c (0.1 g, 0.3 mmoles) in *N*,*N*'-dimethylformamide (1.5 ml) were added 1-hydroxybenzotriazole (0.044g, 0.329 mmoles), *N*-ethyldiisopropyl amine (0.116 g, 0.9009 mmoles) and 2,5-diethoxy aniline (0.065 g, 0.359 mmoles) at room temperature. The reaction mixture was allowed to stir at room temperature for about 30 minutes and then 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride (0.063 g, 0.329 mmoles) was added to it. The reaction mixture was again stirred at room temperature for about 24 hours. After completion of the reaction, the solvent was evaporated under vacuum, a saturated solution of sodium bicarbonate was added and stirred at room temperature for 15 minutes to 20 minutes. The resulting solid obtained was collected through filtration to afford the title compound as white solid.

Yield: 0.07 g.

$^1$H NMR (400 MHz, DMSO-$d_6$) δ 9.23 (s, 1H), 7.84 (d, $J$ = 8.08 Hz, 2H), 7.53 (d, $J$ = 2.53 Hz, 1H), 7.42 (d, $J$ = 8.08 Hz, 2H), 7.19 (s, 1H), 7.04 - 7.16 (m, 2H), 6.97 (d, $J$ = 9.09 Hz, 1H), 6.67 (dd, $J$ = 2.78, 8.84 Hz, 1H), 4.91 (s, 2H), 4.02 (q, $J$ = 6.91 Hz, 2H), 3.95 (q, $J$ = 7.07 Hz, 2H), 3.08 (s, 3H), 2.16 (s, 3H), 2.14 (s, 3H), 1.31 (td, $J$ = 3.54, 6.82 Hz, 6H).

Mass spectrum (m/z, +ve ion mode): 497 [$M^+$+1]

**Pharmacological activity**

**5-LO enzyme assay**

The NCEs/standard compounds were diluted in DMSO (20 µl) of TEC buffer (50 mM Tris; pH 7.5, 2 mM EDTA, 2 mM $CaCl_2$) was added in black assay plate along with 1 µl of the serially diluted NCEs/standard compound. 5-LO enzyme (recombinant enzyme/neutrophil lysate) appropriately diluted in TEC buffer and added in the assay plate except the negative well (for reducing condition, glutathione peroxidase (25 mU/well) and reduced glutathione (100 µM/well) or 100 µM DTT were also added). The reaction mixture was incubated for about 30 minutes at room temperature. 10 mM stock solution of 2',7'-Dichlorodihydrofluorecein diacetate ($H_2$DCFDA) (1:100 in TEC Buffer) was prepared and 10 µl per well was added in all wells including the "positive" and "negative" wells. The mixture was incubated for 10 minutes to 15 minutes. A mixture of arachidonic acid (2.5 µM/well) and ATP (5 µM/well) was added in all the wells. The volume was made up to 100 µl with TEC buffer and incubated for 1 hour. The fluorescence was read at 480 nm excitation/520 nm emission. The % inhibition and $IC_{50}$ were calculated.

Compounds of the invention have $IC_{50}$ value below 100µM. Some compounds showed $IC_{50}$ in the range of 0.5µM to 5µM. The $IC_{50}$ values of compounds (Compound Nos. 12, 41, 50, 54, 57, 66, 69, 178) ranged from 100 nM to 500 nM.

**LTB4 release inhibition assay (with and without HpODE)**

Human blood was collected by venipuncture from healthy volunteers and neutrophils were isolated using Ficoll Hypaque gradient (density 1.077 g/ml). Cells were suspended in PBSG (pH 7.2) at a concentration of $0.2 \times 10^6$ cells/ml) (PBSG = PBS containing 1mg/ml glucose). 200 µl of cell suspension was added along with 1 µl of suitably diluted NCE/vehicle per well in a 24 well plate and incubated for 47 minutes at 37°C with or without 13-HpODE (final conc 3 µM). 20 µl of PBSG having $Mg^{2+}$ & $Ca^{2+}$ (5 µl of 1M $MgCl_2$ + 5 µl of 1M $CaCl_2$ + 990 µl of PBSG; total 1ml; final concentration = 250 µM each) was added and incubated further for 3 minutes. 20 µl of $Ca^{2+}$ ionophore A23187 (3 µg/ml) was added per well and incubated further for 10 minutes at 37°C (final concentration 0.3 µg/ml). The reaction was stopped by adding 80 µl of chilled methanol. Plate was centrifuged at 3600 rpm for 10 minutes at 4°C and supernatant was collected.

100 µl was used for $LTB_4$ release assay using ELISA kit as described by the manufacturer (Assay Designs Inc).

Compounds of the invention showed $IC_{50}$ vlaue below 1000 nM. The $IC_{50}$ values of compounds (Compound Nos. 50 and 35) ranged from 5 nM to 100 nM in human neutrophils assay.

Selectivity assays:

**a. 12-LOX and 15-LOX assay**

12-LOX and 15-LOX assays were performed using in-house enzymes. Both the enzyme assays were based on the oxidation of the substrate $H_2$DCFDA to the highly fluorescent 2', 7'-dichloro-fluorescein (DCF) product. Briefly, 20 µl of buffer was added in the assay plate along with 1 µl of varying concentrations of compound. The recombinant 12-LOX/15-LOX enzymes were appropriately diluted in reaction buffer and added in the plate. The reaction mixture was incubated for 30 minutes. Subsequently, 10µM of $H_2$DCFDA dye was added per well and incubated for 15 minutes. Arachidonic acid (0.5 µM/well) and ATP (5 µM/well) were added and the fluorescence was read at 480 nm excitation/520 nm emission after an incubation of 1 hour at room temperature.

**b. FLAP assay**

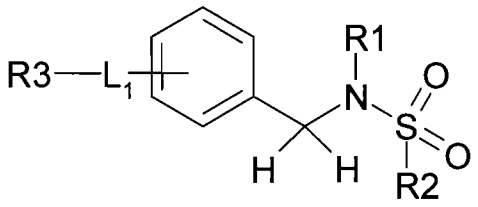
8-10 ml of fresh blood sample was collected and leukocytes were isolated. Cells were centrifuged at $1 \times 10^5$ g for 60 minutes at 4°C to prepare the membranes. Protein was estimated using Bradford estimation and stored at -80°C till use. Radioligand binding assay was performed using [$^3$H] MK886. Protein concentration per well was 30 µg to 60 µg. The reaction mixture was incubated for 30 minutes at room temperature with continuous shaking followed by harvesting using GF/B filtermats. Counting was performed using microbeta scintillation counter and % inhibition was calculated.

**c. COX-1/COX-2 Assay**

COX-1 and COX-2 enzyme assays were performed by using commercially available enzymes (Cayman) and using a commercially available enzyme assay kit (Cayman Chemicals Cat No: 700100). NCEs or standards were incubated with COX enzymes for 15 minutes and reaction was started with addition of substrate (10 µl of 10-acetyl-3,7-dihydroxyphenoxazine), as per the manufacturer's instructions. Increase in fluorescenece was monitored at Exc 535 nm and Em 590 nm, respectively. All assays were run in duplicate. % inhibition was calculated using control wells.

**Claims:**

1. A compound of Formula 1 as a 5-LO inhibitor



**Formula 1**

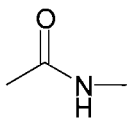
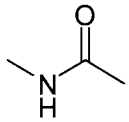
or its pharmaceutically acceptable salts or solvates

wherein

**$R_1$** is phenyl, pyrazole, pyrazine, pyrimidine, or $C_{6-12}$heterocyclyl substituted with one or more substitutents selected from $R_4$;

**$R_2$** is $C_{1-6}$alkyl, phenyl, cyclopropyl, or 1-methyl-1*H*-imidazole;

**$L_1$** is

a)  or b) 

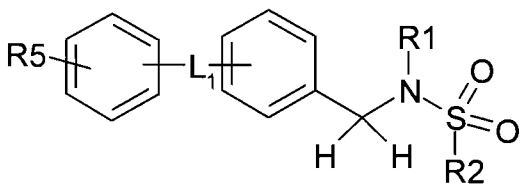
**$R_3$** is phenyl, pyridine, pyrazine, pyrimidine, triazine, tetrazole, thiazole, imidazole, oxazole 2,3-dihydro-1*H*-indene, or 1,3-benzodioxole, substituted with one or more substitutents selected from $R_5$;

**$R_4$** is independently hydrogen, $C_{1-6}$alkyl, halogen, nitro, cyano, $-CF_3$, $-OCF_3$, $-OCHF_2$, alkoxy, -Oaryl, thioalkyl, $-NR_fR_q$, $-CONR_fR_q$, $-COOR_f$, $-OR_d$, or $-COR_f$;

**$R_5$** is independently hydrogen, $C_{1-6}$alkyl, halogen, nitro, cyano, $-CF_3$, $-OCF_3$, $-OCHF_2$, $-NR_fR_q$, phenyl, $-SR_d$, thiophenyl, $-CONR_fR_q$, $-COOR_f$, $-OR_d$, $-COR_f$ wherein $R_d$ is hydrogen, aryl, alkylaryl, $C_{1-5}$alkyl, $C_{1-3}$alkylCOOR$_f$, or $C_{1-3}$alkylOH;

**$R_f$** and **$R_q$** are independently hydrogen, alkyl, or alkenyl.

2. A compound according to claim 1, having the structure of Formula IA:



**Formula 1A**

wherein

$R_1$, $R_2$, $R_5$ and $L_1$ are the same as defined in claim 1.

3. A compound, which is:

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-(4-methylphenyl)acetamide (Compound No. 1);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 2);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 3);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 4);

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 5);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 6);

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 7);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 8);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-(trifluoromethyl)benzamide (Compound No. 9);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 10);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3,4-dimethoxybenzamide (Compound No. 11);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 12);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,4-difluorobenzamide (Compound No. 13);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 14);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 15);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-difluorobenzamide (Compound No. 16);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 17);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-fluoro-3-methylbenzamide (Compound No. 18);

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-6-fluorobenzamide (Compound No. 19);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethoxy)benzamide (Compound No. 20);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethyl)benzamide (Compound No. 21);

2,5-Dichloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 22);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 23);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3,5-dimethoxybenzamide (Compound No. 24);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methoxy-4-methylbenzamide (Compound No. 25);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,3-dimethylbenzamide (Compound No. 26);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3,5-dimethylbenzamide (Compound No. 27);

3-(Dimethylamino)-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 28);

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 29);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-propylbenzamide (Compound No. 30);

4-*tert*-Butyl-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 31);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 32);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,4,6-trifluorobenzamide (Compound No. 33);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl)benzamide (Compound No. 34);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 35);

*N*-(2,5-Diethoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzamide (Compound No. 36);

*N*-(2,5-Difluorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 37);

*N*-(2,5-Dimethoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 38);

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 39);

*N*-[2-(Benzyloxy)phenyl]-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 40);

*N*-(2-Chloro-5-methoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 41);

*N*-(2-Chlorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 42);

*N*-[2-(Difluoromethoxy)phenyl]-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 43);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl)benzamide (Compound No. 44);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluoro-5-methylphenyl)benzamide (Compound No. 45);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluoro-5-nitrophenyl)benzamide (Compound No. 46);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-fluoro-5-(trifluoromethyl)phenyl]benzamide (Compound No. 47);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluorophenyl)benzamide (Compound No. 48);

*N*-(5-*tert*-Butyl-2-methoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 49);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-methoxy-5-(trifluoromethyl)phenyl]benzamide (Compound No. 50);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-phenoxyphenyl)benzamide (Compound No. 51);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(propan-2-yl)phenyl]benzamide (Compound No. 52);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(2-methylpropyl)phenyl]benzamide (Compound No. 53);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(trifluoromethoxy)phenyl]benzamide (Compound No. 54);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(trifluoromethyl)phenyl]benzamide (Compound No. 55);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 56);

*N*-(5-Chloro-2-methoxyphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzamide (Compound No. 57);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-methoxy-2-methylphenyl)benzamide (Compound No. 58);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methylphenyl)benzamide (Compound No. 59);

*N*-(Biphenyl-2-yl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzamide (Compound No. 60);

*N*-(2-Bromophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzamide (Compound No. 61);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(methylsulfanyl)phenyl]benzamide (Compound No. 62);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(phenylsulfanyl)phenyl]benzamide (Compound No. 63);

*N*-(5-Chloro-2-fluorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzamide (Compound No. 64);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-fluoro-2-methylphenyl)benzamide (Compound No. 65);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(4-methoxybiphenyl-3-yl)benzamide (Compound No. 66);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methylbenzamide (Compound No. 67);

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl)benzamide (Compound No. 68);

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 69);

*N*-(5-Chloro-2-methylphenyl)-4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}benzamide (Compound No. 70);

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl)benzamide (Compound No. 71);

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}benzamide (Compound No. 72);

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl)benzamide (Compound No. 73);

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 74);

*N*-(5-Chloro-2-methylphenyl)-4-{[(3,4-dimethylphenyl)(propylsulfonyl)amino] methyl}benzamide (Compound No. 75);

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl) benzamide (Compound No. 76);

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(propylsulfonyl)amino]methyl} benzamide (Compound No. 77);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl) benzamide (Compound No. 78);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 79);

*N*-(2,5-Diethoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 80);

*N*-(2,5-Difluorophenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 81);

*N*-(2,5-Dimethoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 82);

*N*-(2,5-Dimethylphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 83);

*N*-[2-(Benzyloxy)phenyl]-3-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 84);

*N*-(2-Chloro-5-methoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 85);

*N*-(2-Chlorophenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 86);

*N*-[2-(Difluoromethoxy)phenyl]-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 87);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl) benzamide (Compound No. 88);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluoro-5-methylphenyl)benzamide (Compound No. 89);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-fluorophenyl) benzamide (Compound No. 90);

*N*-(5-*tert*-Butyl-2-methoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl) amino]methyl}benzamide (Compound No. 91);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-methoxy-5-(trifluoromethyl) phenyl]benzamide (Compound No. 92);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-phenoxyphenyl)benzamide (Compound No. 93);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(2-methylpropyl)phenyl]benzamide (Compound No. 94);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-propylphenyl) benzamide (Compound No. 95);

*N*-(Biphenyl-2-yl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 96);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[2-(methylsulfanyl) phenyl]benzamide (Compound No. 97);

*N*-(5-Chloro-2-methoxyphenyl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 98);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-fluoro-2-methylphenyl)benzamide (Compound No. 99);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(5-methoxy-2-methylphenyl)benzamide (Compound No. 100);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-methylphenyl) benzamide (Compound No. 101);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(4-methoxybiphenyl-3-yl)benzamide (Compound No. 102);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 103);

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 104);

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 105);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 106);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 107);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 108);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 109);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethoxy)benzamide (Compound No. 110);

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino] methyl}phenyl)benzamide (Compound No. 111);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 112);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 113);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-methylbenzamide (Compound No. 114);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 115);

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 116);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethoxy) benzamide (Compound No. 117);

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 118);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 119);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 120);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 121);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 122);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-5-fluoro-2-methoxybenzamide (Compound No. 123);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 124);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 125);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 126);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 127);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 128);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 129);

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 130);

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 131);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 132);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 133);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 134);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 135);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethoxy)benzamide (Compound No. 136);

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 137);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 138);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 139);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-methylbenzamide (Compound No. 140);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 141);

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 142);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethoxy)benzamide (Compound No. 143);

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 144);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 145);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 146);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 147);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)-5-fluoro-2-methoxybenzamide (Compound No. 148);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 149);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 150);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 151);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)-5-fluoro-2-methoxybenzamide (Compound No. 152);

*N*-(4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 153);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide(Compound No. 154);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 155);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 156);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 157);

2-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 158);

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 159);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 160);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-methylbenzamide (Compound No. 161);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-fluorobenzamide (Compound No. 162);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 163);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-3-(trifluoromethoxy)benzamide (Compound No. 164);

3-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino] methyl}phenyl)benzamide (Compound No. 165);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino] methyl}phenyl)-2-methylbenzamide (Compound No. 166);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-4-methylbenzamide (Compound No. 167);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 168);

4-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 169);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethoxy)benzamide (Compound No. 170);

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 171);

*N*-(4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 172);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-[4-(trifluoromethoxy) phenyl]benzamide (Compound No. 173);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(3-fluorophenyl) benzamide (Compound No. 174);

*N*-(4-*tert*-Butylphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 175);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-phenylbenzamide (Compound No. 176);

*N*-(4-Bromophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 177);

*N*-(3-Bromophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 178);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(3-methoxyphenyl) benzamide (Compound No. 179);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(4-methoxyphenyl) benzamide (Compound No. 180);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(3-methylphenyl) benzamide (Compound No. 181);

*N*-(3-Chlorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 182);

*N*-(4-Chlorophenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} benzamide (Compound No. 183);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 184);

2-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 185);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-phenoxybenzamide (Compound No. 186);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 187);

3-Bromo-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 188);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethoxy)benzamide (Compound No. 189);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-fluorobenzamide (Compound No. 190);

4-Bromo-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 191);

4-Cyano-*N*-(4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl) benzamide (Compound No. 192);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-(trifluoromethyl)benzamide (Compound No. 193);

4-{[(3,4-Dimethylphenyl)(ethylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl) benzamide (Compound No. 194);

4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl) benzamide (Compound No. 195);

*N*-(2,3-Dihydro-1*H*-inden-1-yl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino] methyl}benzamide (Compound No. 196);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-difluorobenzamide (Compound No. 197);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,3-dimethoxybenzamide (Compound No. 198);

2,5-Dichloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 199);

3-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 200);

5-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 201);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 202);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methylbenzamide (Compound No. 203);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 204);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 205);

2-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl} phenyl)benzamide (Compound No. 206);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 207);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 208);

2-Cyano-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)benzamide (Compound No. 209);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-methoxybenzamide (Compound No. 210);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-3-ethoxybenzamide (Compound No. 211);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 212);

3-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 213);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2,5-dimethylbenzamide (Compound No. 214);

5-Chloro-*N*-(3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 215);

*N*-(3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-2-(trifluoromethoxy)benzamide (Compound No. 216);

*N*-(4-{[(3,4-Dimethylphenyl)(propan-2-ylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 217);

4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl)benzamide (Compound No. 218);

*N*-(3,4-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzamide (Compound No. 219);

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)phenyl]-2-ethoxybenzamide (Compound No. 220);

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)phenyl]-2-fluorobenzamide (Compound No. 221);

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)phenyl]-2,5-dimethoxybenzamide (Compound No. 222);

3-Chloro-*N*-[4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)phenyl]-4-methoxybenzamide (Compound No. 223);

*N*-[4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)phenyl]-2-methoxybenzamide (Compound No. 224);

5-Chloro-*N*-[4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)phenyl]-2-methoxybenzamide (Compound No. 225);

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 226);

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 227);

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 228);

3-Chloro-*N*-(4-{[(cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 229);

*N*-(4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 230);

5-Chloro-*N*-(4-{[(cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 231);

*N*-(4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2-ethoxybenzamide (Compound No. 232);

*N*-(4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2-fluorobenzamide (Compound No. 233);

*N*-(4-{[(3,4-Dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2,5-dimethoxybenzamide (Compound No. 234);

3-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-4-methoxybenzamide (Compound No. 235);

5-Chloro-*N*-(4-{[(3,4-dimethylphenyl)(propylsulfonyl)amino]methyl}phenyl)-2-methoxybenzamide (Compound No. 236);

3-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl)benzamide (Compound No. 237);

4-{[2,3-Dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}-*N*-(2,5-dimethoxyphenyl)benzamide (Compound No. 238);

*N*-(2,5-Diethoxyphenyl)-4-{[2,3-dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}benzamide (Compound No. 239);

4-{[2,3-Dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}-*N*-[2-(trifluoromethoxy)phenyl]benzamide (Compound No. 240);

*N*-(5-Chloro-2-methoxyphenyl)-4-{[2,3-dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}benzamide (Compound No. 241);

4-{[2,3-Dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl)benzamide (Compound No. 242);

*N*-(2-Chlorophenyl)-4-{[2,3-dihydro-1*H*-inden-5-yl(methylsulfonyl)amino]methyl}benzamide (Compound No. 243);

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-ethoxyphenyl)benzamide (Compound No. 244);

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-ethoxyphenyl)benzamide (Compound No. 245);

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-methoxyphenyl)benzamide (Compound No. 246);

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 247);

*N*-(5-Chloro-2-methylphenyl)-4-{[(cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}benzamide (Compound No. 248);

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2,5-dimethylphenyl)benzamide (Compound No. 249);

4-{[(Cyclopropylsulfonyl)(3,4-dimethylphenyl)amino]methyl}-*N*-(2-ethylphenyl)benzamide (Compound No. 250);

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-methoxyphenyl)benzamide (Compound No. 251);

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 252);

*N*-(5-Chloro-2-methylphenyl)-4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}benzamide (Compound No. 253);

4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)-*N*-(2-methoxy phenyl)benzamide (Compound No. 254);

4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)-*N*-(2-methoxy-5-methylphenyl)benzamide (Compound No. 255);

*N*-(5-Chloro-2-methylphenyl)-4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)benzamide (Compound No. 256);

4-({(3,4-Dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)-*N*-(2-ethylphenyl)benzamide (Compound No. 257);

*N*-(2,5-Dimethylphenyl)-4-({(3,4-dimethylphenyl)[(1-methyl-1*H*-imidazol-4-yl)sulfonyl]amino}methyl)benzamide (Compound No. 258);

*N*-(2,3-Dihydro-1*H*-inden-5-yl)-4-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzamide (Compound No. 259);

*N*-(2,3-Dihydro-1*H*-inden-1-yl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzamide (Compound No. 260);

*N*-(4-{[(3,4-Dimethylphenyl)(methylsulfonyl)amino]methyl}phenyl)-1,3-benzodioxole-5-carboxamide (Compound No. 261);

4-{[(3,4-Dimethylphenyl)(phenylsulfonyl)amino]methyl}-*N*-(2-ethylphenyl)benzamide (Compound No. 262);

*N*-(2,5-Dimethylphenyl)-4-{[(3,4-dimethylphenyl)(phenylsulfonyl)amino]methyl}benzamide (Compound No. 263);

*N*-(2,3-Dihydro-1*H*-inden-5-yl)-3-{[(3,4-dimethylphenyl)(methylsulfonyl)amino]methyl}benzamide (Compound No. 264) and

or its pharmaceutically acceptable salts or solvates.

4. A pharmaceutical composition comprising therapeutically effective amount of one or more compound according to any one of the claims 1-3, together with one or more pharmaceutically acceptable carrier, excipient or diluent.

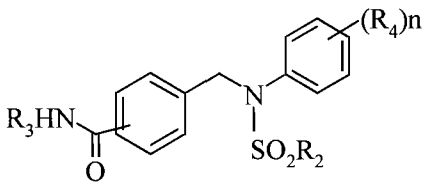
5. A pharmaceutical composition of claim 4, further comprising one or more therapeutic agents selected from COX inhibitors, BLTR antagonists, FLAP inhibitors, muscarinic receptor antagonists, β2-agonists, p38 MAP Kinase inhibitors, PDE-IV inhibitors or corticosteroids.

6. A method for treating or preventing conditions caused by inflammation and associated pathologies where the disease or conditions is mediated through 5-LO, comprising administering to a mammal in need thereof a therapeutically effective amount of one or more compounds of claims 1-3, or their pharmaceutical composition of claim 4.

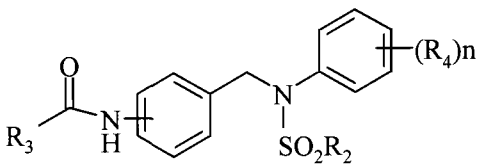
7. A method according to claim 6, wherein conditions caused by inflammation and associated pathologies are selected from bronchial asthma, chronic obstructive pulmonary disease, rheumatoid arthritis, Type I diabetes, multiple sclerosis, allograft rejection, psoriasis, inflammatory bowel disease, ulcerative colitis, acne, atherosclerosis, cancer, pruritis, allergic rhinitis and other inflammatory and/or autoimmune disorders.

8. A process for preparing compound of Formula 8 (Formula I when $R_1$ is phenyl substituted with $R_4$ and $L_I$ =CONH) and Formula 12 (Formula I when $R_1$ is phenyl substituted with $R_4$ and $L_I$= NHCO),

comprising:

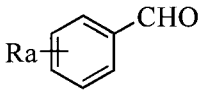



Formula 8

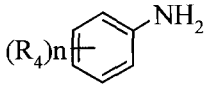



Formula 12

a) aminating a compound of Formula 2 with a compound of Formula 3

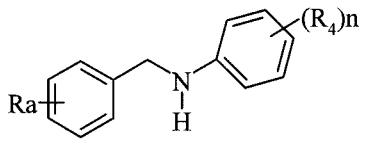



Formula 2




Formula 3

to give a compound of Formula 4;



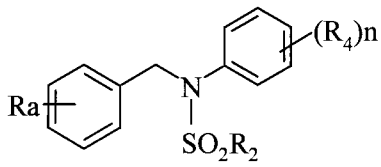
Formula 4

b) reacting a compound of Formula 4 with a compound of Formula 5

$R_2SO_2Hal$

Formula 5

to give a compound of Formula 6;



Formula 6

c) coupling of a compound of Formula 6 (wherein Ra is COOH) with a compound of Formula 7

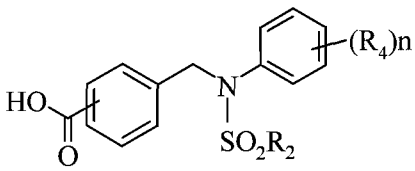
$R_3NH_2$

Formula 7

to give a compound of Formula 8;

OR

d) hydrolysing a compound of Formula 6 (wherein Ra is CN) to give a compound of Formula 9;

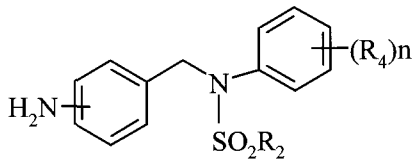


Formula 9

e) coupling a compound of Formula 9 with a compound of Formula 7 to give a compound of Formula 8;

OR

f) reducing a compound of Formula 6 (wherein Ra is $NO_2$) to give a compound of Formula 10; and



Formula 10

g) coupling a compound of Formula 10 with a compound of Formula 11

$R_3COOH$

Formula 11

to give a compound of Formula 12

wherein

**$R_2$** is C1-6alkyl, phenyl, cyclopropyl, or 1-methyl-1*H*-imidazole;

**$R_3$** is phenyl, pyridine, pyrazine, pyrimidine, triazine, tetrazole, thiazole, imidazole, oxazole 2,3-dihydro-1*H*-indene, or 1,3-benzodioxole, substituted with one or more substitutents selected from $R_5$;

**$R_4$** is independently hydrogen, $C_{1-6}$alkyl, halogen, nitro, cyano, $-CF_3$, $-OCF_3$, $-OCHF_2$, alkoxy, -Oaryl, thioalkyl, $-NR_fR_q$, $-CONR_fR_q$, $-COOR_f$, $-OR_d$, or $-COR_f$;

**$R_5$** is independently hydrogen, $C_{1-6}$alkyl, halogen, nitro, cyano, $-CF_3$, $-OCF_3$, $-OCHF_2$, $-NR_fR_q$, phenyl, $-SR_d$, thiophenyl, $-CONR_fR_q$, $-COOR_f$, $-OR_d$, $-COR_f$ wherein $R_d$ is hydrogen, aryl, alkylaryl, $C_{1-5}$alkyl, $C_{1-3}$alkyl$COOR_f$, or $C_{1-3}$alkylOH;

**$R_f$** and **$R_q$** are independently hydrogen, alkyl, or alkenyl;

**n** is 1-3;

**Hal** is F, Cl, Br, I.

# INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2011/053238

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07D233/42 C07C311/08 A61K31/18 A61P29/00
ADD.

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)
C07D C07C A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | US 2007/203236 A1 (SMITH JEFFREY W [US] ET AL) 30 August 2007 (2007-08-30)<br>figure 15/97; compound 5865028<br>----- | 1,2,4,<br>6-8 |
| X | FERNANDEZ-FERRI P ET AL: "Synthesis and evaluation of 2-tosylamino and 2-tosyliminopyrimidine derivatives as inhibitors of some leukocyte functions", EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY, EDITIONS SCIENTIFIQUE ELSEVIER, PARIS, FR, vol. 38, no. 3, 1 March 2003 (2003-03-01), pages 289-296, XP002538305, ISSN: 0223-5234, DOI: 10.1016/S0223-5234(03)00013-8 [retrieved on 2003-03-07]<br>abstract<br>figure 2; compounds 4g,i,j,h<br>----- | 1,2,4,6,<br>7 |

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[X] Further documents are listed in the continuation of Box C.

[X] 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 document 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 another 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 | Date of mailing of the international search report |
|---|---|
| 17 November 2011 | 24/11/2011 |

| Name and mailing address of the ISA/ | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040,<br>Fax: (+31-70) 340-3016 | Skulj, Primoz |

# INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2011/053238

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| A | WO 2005/042489 A1 (ELAN PHARM INC [US]; NEITZEL MARTIN [US]; DAPPEN MICHAEL S [US]; MARUG) 12 May 2005 (2005-05-12) compounds 471,483,484 | 1,2,4 |
| A | US 2006/014945 A1 (GALLEY GUIDO [DE] ET AL) 19 January 2006 (2006-01-19) Scheme 1; page 30 | 1,2,4,8 |
| A | PERGOLA C ET AL: "5-Lipoxygenase inhibitors: A review of recent developments and patents", EXPERT OPINION ON THERAPEUTIC PATENTS, INFORMA HEALTHCARE, GB, vol. 20, no. 3, 1 March 2010 (2010-03-01), pages 355-375, XP008143681, ISSN: 1354-3776, DOI: 10.1517/13543771003602012 cited in the application | 1-8 |

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IB2011/053238

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US 2007203236 A1 | 30-08-2007 | US 2007203236 A1 | 30-08-2007 |
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