**Supplementary file 2. Outstanding Hit Calls**

|  |  |
| --- | --- |
| **Drug** | **Pharmacological Activity** |
| Quipazine maleate | Serotonin receptor agonist |
| Tranylcypromine HCl (trans-2-phenylcyclopropylamine) | Acts as a monoamine oxidase inhibitor |
| Phenelzine sulfate | Non-selective, irreversible monoamine oxidase inhibitor |
| Pargyline hydrochloride | Irreversible monoamine oxidase B inhibitor |
| Chlorpheniramine | Alkylamine antihistamine |
| Clemastine | Selective histamine h1 antagonist |
| Mebhydrolin naphthalenesulfonate | Histamine H₁-receptor antagonist |
| Dl-homatropine | Antagonist at muscarinic acetylcholine receptors |
| Oxyphenonium bromide | Antimuscarinic |
| Scopolamine | Acts as a competitive antagonist at muscarinic acetylcholine receptors |
| Telenzepine | Selective m1 antimuscarinic |
| Strychnine | Acts as an antagonist of glycine and acetylcholine receptors |
| Pralidoxime mesylate | Binds to organophosphate-inactivated acetylcholinesterase |
| Bromopride | Dopamine antagonist |
| Propiomazine maleate | Dopamine receptors (1, 2 and 4) antagonist |
| D-homocysteinesulfinic acid | Agonist at metabotropic glutamate receptors (MGLURS) |
| Zopiclone | Binds to α1, α2, α3 and α5 GABAa benzodiazepine receptor complexes |
| Thiopental sodium | Acts on the GABAa receptor |
| Eseroline | Acts as an opioid agonist |
| Bucetin | Acts as an analgesic and antipyretic |
| Phenylephrine hydrochloride | Selective α1-adrenergic receptor agonist |
| Urethane | Long-acting anesthetic with minimal cardiopulmonary depression |
| Lithium salicylate | Neuroactive lithium salt |
| Clobetasone butyrate | Glucocorticoid receptor agonist |
| Flunisolide | Glucocorticoid receptor agonist |
| Clobetasol propionate | Glucocorticoid receptor agonist |
| Epicatechin gallate (epigallocatechin (-)) | Antioxidant |
| Trans,trans-2,4-hexadien-1-ol | Antioxidant |
| Carnosine | Antioxidant |
| Choline magnesium trisalicylate | Nonsteroidal anti-inflammatory medications |
| Fosfosal (o-carboxyphenyl phosphate) | Salicylic acid derivative used in analgesic and anti-inflammatory therapy |
| Vitamin a palmitate (retinol palmitate) | Vitamin A |
| Retinyl palmitate | Synthetic alternate for retinyl acetate in vitamin A supplements |
| Regular iletin II (insulin injection, usp purified pork) | Insulin |
| Human insulin - ultralente - extended zinc suspension | Insulin |
| Human insulin - NPH - isophane suspension | Insulin |
| Norgestrel d(-) (levonorgestrel) | Progesterone receptor agonist |
| Drospirenone and ethinyl estradiol | Progesterone receptor agonist |
| Norethindrone acetate | Progesterone receptor agonist |
| Tibolone | Acts as an agonist mainly at estrogen receptors, with a preference for ER alpha |
| Spironolactone | Antagonist of the mineralocorticoid (or aldosterone) and androgen receptors |
| Iopanoic acid | Inhibits thyroid hormone release and peripheral conversion of thyroxine (T4) to triiodothyronine (T3) |
| 2-thiouracil | Inhibits thyroid activity by blocking thyroid peroxidase |
| Dinoprostone (prostaglandin e2) | Naturally occurring prostaglandin e2 (PGE2) |
| Sulfabenzamide | Antibacterial/antimicrobial |
| Pneumococcal 7-valent conjugate vaccine | Bacterial Vaccine |
| Linezolid | Bacterial protein synthesis inhibitor |
| Penicillin G sodium | Inhibits the formation of peptidoglycan cross-links in the bacterial cell wall |
| Gatifloxacin | Inhibits the bacterial enzymes DNA gyrase and topoisomerase iv |
| Methacycline hydrochloride | Inhibits bacterial protein synthesis |
| Cefuroxime axetil | Cephalosporin antibiotic |
| Cefmetazole | Cephalosporin antibiotic |
| Cefamandole | Cephalosporin antibiotic |
| Ristocetin sulfate | Antibiotic that belongs to the class III glycopeptides |
| Hydroquinidine HCl | Class I antiarrhythmic agent (Ia) in the heart |
| Practolol | Selective beta blocker that has been used in the emergency treatment of cardiac arrhythmias |
| N(g)-nitro-l-arginine | Inhibitor of nitric oxide synthase |
| Spermidine trihydrochloride | Inhibits neuronal nitric oxide synthase (nNOS). |
| L-arginine l-glutamate salt | Substrate of nitric oxide synthase |
| Triamterene | Blocks the epithelial sodium channel (ENAC) |
| Protoveratrine B | Na+ channel agonist |
| Metolazone | Inhibits the sodium-chloride symporter |
| Ibutilide fumarate | Acts on the slow sodium channel and promotes the influx of sodium through these slow channels |
| 3-formyl rifamycin | Interacts with membranes causes change in permeability to K+ and H+ in the mitochondrial membrane |
| Nigericin sodium | H+, k+ ionophore |
| Cloxyquin (5-chloro-8-hydroxy-quinoline) | Activator of the two-pore domain potassium channel TRESK |
| Enalapril maleate | Angiotensin-converting-enzyme (ACE) inhibitor |
| Fosinopril sodium | Angiotensin converting enzyme (ace) inhibitor |
| Adenosine 5'-(β,γ-imido)triphosphate tetralithium | A non-hydrolyzable ATP analog |
| Metformin (1,1-dimethylbiguanide hydrochloride) | Activates AMP-activated protein kinase (AMPK) |
| Zaprinast | Phosphodiesterase inhibitor, selective for subtypes PDE5, PDE6, PDE9 and PDE11 |
| Acetylphenylalanine | Amino acid derivative |
| N-(9-fluorenylmethoxycarbonyl)-l-Leucin | Amino acid derivative |
| L-aspartic acid | Amino acid |
| Lomofungin | Chelating agent for bivalent cations |
| Ferron (8-hydroxy 7 iodo 5 quinoline sulfonic acid) | Reagent for the extraction and spectrophotometric determination of Fe |
| Deferoxamine mesylate | Acts by binding free iron in the bloodstream and enhancing its elimination in the urine |
| Amsacrine | Intercalates DNA, inhibits topoisomerase ii |
| Homidium bromide (ethidium bromide) | Intercalates DNA |
| Benzo[a]pyrene | Intercalates DNA |
| Lomustine | Alkylates and cross-links DNA and RNA, thus inducing cytotoxicity |
| 2'-deoxyguanosine | Component of deoxyribonucleic acid |
| 2'-deoxycytidine | Component of deoxyribonucleic acid |
| Hirudin | Blood anticoagulant peptide |
| Mebrofenin ((3-bromo-2,4,6-trimethylphenylcarbamoyl) methyliminodiacetic acid) | Diagnostic aid 99mTc complex as diagnostic aid (radioactive imaging agent) |
| Potassium phosphate dibasic | Laxative |
| Sennoside B | Anthraquinone glucosides that are the laxative principles of senna. |
| Guaifenesin | Acts as an irritant to gastric vagal receptors |
| N-ethyldexoynojirimycin | Inhibitor of HIV cytopathicity |
| Formestane (4-androsten-4-ol-3,17-dione) | Type I, steroidal aromatase inhibitor |
| Oleic acid (cis-9-octadecenoic acid) | Monounsaturated omega-9 fatty acid |
| Meparfynol (methylpentynol, 3-methyl-1-pentyn-3-ol) | Initiator during the synthesis of propargyl-terminated polylactide by bulk ring-opening polymerization |
| Glycerol dimethacrylate | Adhesive and sealant formulations |
| Bi-lawsone (2,2-bi(3-hydroxy-1,4-naphthoquinone)) | Natural dye that reacts chemically with the keratin in skin and hair |
| Geneticin (G418) | Blocks polypeptide synthesis by inhibiting the elongation step in both prokaryotic and eukaryotic cells |
| Bismuth subcarbonate (bismuth carbonate oxide) | Antidiarrheal agent |
| Acetaldehyde | Precursor to acetic acid |
| Juniper tar | Anti-pruritic agent |
| 2-phenoxyethanol | Chemical preservative |
| Peppermint spirit | Therapeutic plant extract |
| Stannous octoate (tin(ii) 2-ethylhexanoate) | Polymerization initiator |
| Soy protein | Protein that is isolated from soybean. |
| Triethylene glycol diacetate | Thermoplastic acrylic coating as a reflow solvent |
| Flucytosine (5-fluorocytosine) | Converted into 5-fluorodeoxyuridinemonophosphate which inhibits fungal DNA synthesis |
| Acridine yellow | Fluorescent dye |
| O-phenanthroline | Inhibitor of metallopeptidases |
| Griseofulvin | Binds to tubulin, interfering with microtubule function, thus inhibiting mitosis |
| Thiourea | Chaotropic agent; strong denaturant. |
| Tomatine | Immune adjuvant in connection with certain protein antigens |
| Juglone | Inhibits the members of the parvulin PPIase family, antibiotic, anthelmintic |
| Coenzyme B-12 | Vitamin |
| Sulfamethazine | Induces CYP3A4 expression and acetylated by N-acetyltransferase |
| Tetracaine hydrochloride | Allosteric blocker of calcium release channel |
| Abscisic acid (cis,trans+/-) | Natural and active isomer of the abscission accelerating plant hormone |
| Crassin acetate | Immunosuppressant |
| Aesculin | Coumarin glucoside that naturally occurs in the horse chestnut |
| Diprotin A | Inhibitor of dipeptidyl aminopeptidase IV |
| Cyclocreatine | Protectant against inhibition of cardiac mitochondrial respiration. |
| Methoprene (s) | Mimics natural juvenile hormone of insects |
| Dinitolmide | Broad-spectrum anticoccidial drug |
| Cypromethin | Fast-acting neurotoxin in insects |
| Ciprofloxacin | Inhibits DNA gyrase, type II topoisomerase, and topoisomerase iv, enzymes |
| Stearoylcarnitine chloride | Protein kinase C inhibitor |
| Vinblastine sulfate | Binds tubulin, thereby inhibiting the assembly of microtubules |
| Oxantel | Inhibits fumarate reductase |
| 3,4-dichlorobenzylamine | n/a |

**Supplementary file 2. Outstanding Hit Calls**

The 131 compounds implicated in the primary screen but which remain to be further evaluated are listed here in subgroups according to their implicated pharmacological activity (shaded subsets). Subcategories included: Neuromodulators, glucocorticoids, and retinoids - also implicated by Tsuji et al., - as well as 11 other categories unique to our study. n/a: not applicable