compounds described herein can be used for the treatment of inflammatory diseases, such as asthma.

Example 6

Pharmaceutical Compositions

The compositions described below are presented with a compound of Formula (A) for illustrative purposes; any of the compounds of any of Formulas (A), (B), (C), or (D) can be used in such pharmaceutical compositions.

Example 6a

Parenteral Composition

To prepare a parenteral pharmaceutical composition suitable for administration by injection, 100 mg of a water-soluble salt of a compound of Formula (A) is dissolved in DMSO and then mixed with 10 mL of 0.9% sterile saline. The mixture is incorporated into a dosage unit form suitable for administration by injection.

Example 6b

Oral Composition

To prepare a pharmaceutical composition for oral delivery, 100 mg of a compound of Formula (A) is mixed with 750 mg of starch. The mixture is incorporated into an oral dosage unit for, such as a hard gelatin capsule, which is suitable for oral administration.

Example 6c

Sublingual (Hard Lozenge) Composition

To prepare a pharmaceutical composition for buccal delivery, such as a hard lozenge, mix 100 mg of a compound of Formula (A), with 420 mg of powdered sugar mixed, with 1.6 mL of light corn syrup, 2.4 mL distilled water, and 0.42 mL mint extract. The mixture is gently blended and poured into a mold to form a lozenge suitable for buccal administration.

Example 6d

Inhalation Composition

To prepare a pharmaceutical composition for inhalation delivery, 20 mg of a compound of Formula (A) is mixed with 50 mg of anhydrous citric acid and 100 mL of 0.9% sodium chloride solution. The mixture is incorporated into an inhalation delivery unit, such as a nebulizer, which is suitable for inhalation administration.

Example 6e

Rectal Gel Composition

To prepare a pharmaceutical composition for rectal delivery, 100 mg of a compound of Formula (A) is mixed with 2.5 g of methylcelluose (1500 mPa), 100 mg of methylparapen, 5 g of glycerin and 100 mL of purified water. The resulting gel mixture is then incorporated into rectal delivery units, such as syringes, which are suitable for rectal administration.

Example 6f

Topical Gel Composition

To prepare a pharmaceutical topical gel composition, 100 mg of a compound of Formula (A) is mixed with 1.75 g of hydroxypropyl celluose, 10 mL of propylene glycol, 10 mL of isopropyl myristate and 100 mL of purified alcohol USP. The resulting gel mixture is then incorporated into containers, such as tubes, which are suitable for topic1 administration.

Example 6g

Ophthalmic Solution Composition

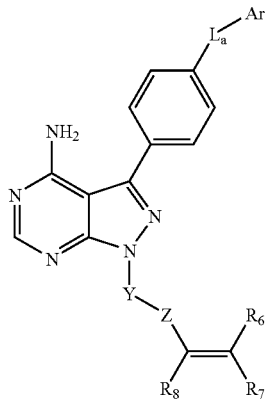
To prepare a pharmaceutical opthalmic solution composition, 100 mg of a compound of Formula (A) is mixed with 0.9 g of NaCl in 100 mL of purified water and filterd using a 0.2 micron filter. The resulting isotonic solution is then incorporated into ophthalmic delivery units, such as eye drop containers, which are suitable for ophthalmic administration.

It is understood that the examples and embodiments described herein are for illustrative purposes only and that various modifications or changes in light thereof will be suggested to persons skilled in the art and are to be included within the spirit and purview of this application and scope of the appended claims. All publications, patents, and patent applications cited herein are hereby incorporated by reference in their entirety for all purposes.

What is claimed is:

1. A compound of Formula (D) having the structure:

Formula (D)



wherein:

L_a is O or S;

Ar is an unsubstituted phenyl;

Y is a 4-, 5-, 6-, or 7-membered cycloalkyl ring, or

Y is azetidinyl, pyrrolidinyl, piperidinyl, or azepanyl;

Z is C(═O), OC(═O), NHC(═O), $S(═O)_x$, or NHS $(═O)_x$, where x is 2;

R_8 is H; R_7 is H, unsubstituted C_1-C_4 alkyl, C_1-C_6alkoxyalkyl, C_1-C_8alkylaminoalkyl, or C_1-C_4alkyl(phenyl); or

R_7 and R_8 taken together form a bond;

R_6 is H, unsubstituted C_1-C_4alkyl, C_1-C_6alkoxyalkyl, C_1-C_8alkylaminoalkyl, or C_1-C_4alkyl(phenyl); or a pharmaceutical acceptable salts thereof.