Herein, "cycloalkylsulfinyl" refers to a sulfinyl group to which the above-defined "cycloalkyl" is bounded (*i.e.*, cycloalkyl-SO-). Preferred examples of the cycloalkylsulfinyl include C_{3-8} cycloalkylsulfinyl, specifically, cyclopentylsulfinyl, cyclohexylsulfinyl, cycloheptylsulfinyl.

The compounds of the present invention include free forms and pharmaceutically acceptable salts thereof. Such "salts" include, for example, inorganic acid salts, organic acid salts, inorganic base salts, organic base salts, and acidic or basic amino acid salts.

Preferred inorganic acid salts include, for example, hydrochloride, hydrobromide, sulfate, nitrate, and phosphate. Preferred organic salts include, for example, acetate, succinate, fumarate, maleate, tartrate, citrate, lactate, malate, stearate, benzoate, methanesulfonate, and p-toluenesulfonate.

Preferred inorganic base salts include, for example, alkali metal salts such as sodium salts and potassium salts; alkali earth metal salts such as calcium salts and magnesium salts; aluminum salts; and ammonium salts. Preferred organic base salts include, for example, diethylamine salts, diethanolamine salts, meglumine salts, and *N,N*-dibenzylethylenediamine salts.

Preferred acidic amino acid salts include, for example, aspartate and glutamate. Preferred basic amino acid salts include, for example, arginine salts, lysine salts, and ornithine salts.

When the compounds of the present invention are left standing under the atmosphere, they may absorb moisture to adsorb water or form hydrates. Such hydrates are also included in the salts of the present invention.

Furthermore, the compounds of the present invention may absorb other solvents to form solvates. Such solvates are also included in the salts of the present invention.

All structurally possible isomers (geometric isomers, optical isomers, stereoisomers, tautomers, etc.) of the compounds of the present invention and mixtures of such isomers are included in the present invention.

The compounds of the present invention may have polymorphic crystalline forms. Such polymorphs are all included in the present invention.

~~The compounds of the present invention include prodrugs thereof. The prodrugs refer to derivatives of the compounds of the present invention which have a chemically or metabolically degradable group, and upon administration to the living body, revert to the original compounds and exhibit the original drug efficacy. The prodrugs include non-covalent complexes and salts.~~

The compounds of the present invention include those in which one or more atoms within the molecule have been replaced with isotopes. Herein, the isotope refers to an atom which has the same atomic number (proton number) but is different in mass number (sum of

The dosage of pharmaceuticals of the present invention can be appropriately selected depending on the severity of symptom, age, sex, weight, administration method, type of salt, specific type of disease, and such.

The dosage considerably varies depending on the type of disease, severity of symptom, age, sex, sensitivity to the agent, and such of the patient. Typically, the agent is administered to an adult once or several times a day at a daily dose of about 0.03 to 1,000 mg, preferably 0.1 to 500 mg, and more preferably 0.1 to 100 mg. When an injection is used, the daily dose is typically about 1 μg/kg to 3,000 μg/kg, preferably about 3 μg/kg to 1,000 μg/kg.

When the compounds of the present invention are produced, material compounds and various reagents may form salts, hydrates, or solvates. The type varies depending on the starting material, solvent used, and such, and is not particularly limited as long as the reactions are not inhibited.

The solvents to be used vary depending on the starting material, reagent, and such, and as a matter of course, they are not particularly limited as long as they can dissolve starting materials to some extent without inhibiting the reactions.

Various isomers (for example, geometric isomers, optical isomers based on asymmetric carbons, rotational isomers, stereoisomers, and tautomers) can be purified and isolated by conventional separation methods such as recrystallization, diastereomer salt methods, enzyme-based resolution methods, various chromatographic methods (for example, thin-layer chromatography, column chromatography, high performance liquid chromatography, and gas chromatography).

When a compound of the present invention is obtained in a free form, it can be converted by conventional methods into a salt or solvate thereof that may be formed from the compound of the present invention. When a compound of the present invention is obtained as a salt or solvate thereof, it can be converted by conventional methods into a free form of the compound of the present invention.

The compounds of the present invention can be purified/isolated using conventional chemical methods such as extraction, concentration, distilling off, crystallization, filtration, re-crystallization, and various chromatographic methods.

~~All the prior art documents cited in this specification are incorporated herein by reference.~~

General production methods for the compounds of the present invention and Examples will be shown below.

The compounds of the present invention can be synthesized by various methods, some of which will be described with reference to the following schemes. The schemes are illustrative, and the present invention is not limited only by the chemical reactions and conditions explicitly