[Non Patent Literature 2] Krsity Cochran et al., Structural Chemistry, 13(2002), p.p. 133-140

[Summary of Invention]

[Technical Problem]

[0021]

However, development of, for example, drugs and drug delivery systems capable of efficiently transferring more excellent invasive medicines to an affected site is anticipated for treatments which relatively put a strain on patients as in, for example, treatments for tongue cancers, postorbital part tissues, or the like.

[0022]

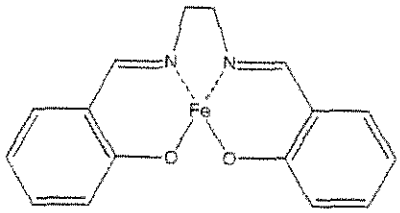
The present invention was devised in light of such circumstances and it is an object of the invention to provide a metal-salen complex compound, which exhibits excellent noninvasiveness and can be efficiently transferred to an affected site, a local anesthetic containing this metal-salen complex compound, and an antineoplastic drug containing this metal-salen complex compound.

[Solution to Problem]

[0023]

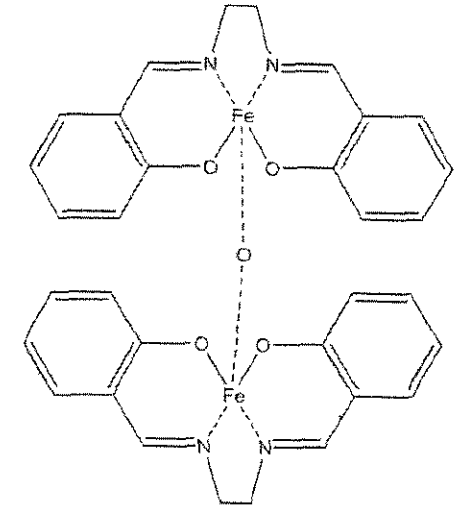
In order to achieve the above-described object, in one aspect, the present invention provides an ointment comprising a base and a self-magnetic metal-salen complex compound of:

Formula (V):



, or

Formula (IV):



Also disclosed is a metal-salen complex compound in which a metal atom part in each of multiple molecules of a metal-salen complex or a derivative of the metal-salen complex is multimerized via water, and which is mixed with a base to produce an ointment.

[0024]

Moreover, regarding the metal-salen complex compound according to the present disclosure~~invention~~, the multiple molecules should more preferably be two molecules and the metal atom part of each of the two molecules should more preferably be dimerized via water.

[0025]

Since this metal-salen complex compound can be mixed with the base to produce the ointment, it can be administered as the ointment to the affected site. Therefore, the metal-salen complex compound exhibits excellent noninvasiveness and can be transferred efficiently to the affected site.

[0026]

Incidentally, the "ointment" according to the present invention includes, in addition to, for example, ointments using oleaginous bases, creams using emulsion bases as specified by Japanese Pharmacopoeia. The "base" used to produce the ointment serves to adhere to the skin and make active ingredients stay on the skin for a long time and the base which can be easily applied, has no irritating effect on the skin, and does not affect stability of the active ingredients is required.

[0027]

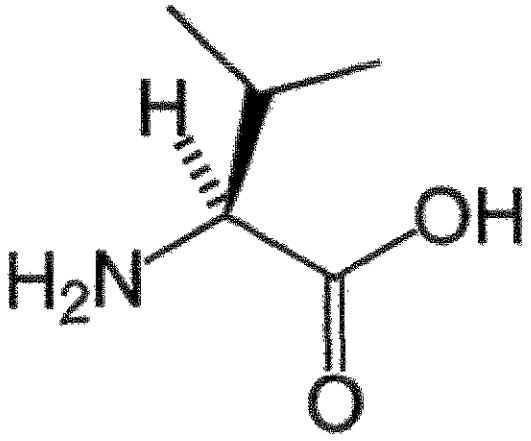
Moreover, the metal-salen complex compound according to the present invention can be applied to, for example, a tongue, gums, and the inside of cheeks by being mixed with a base which can be used in the oral cavity.

[0028]

Examples of such a base can include hydrophobic bases (oleaginous bases), hydrophilic bases (emulsion bases, water-soluble bases, lyophobic bases), special formulations (such as liniments, pastes (pastas), plasters, lotions, and sprays), oral ointments, and ophthalmic ointments. More specifically, for example, ointment bases such as Vaseline (yellow Vaseline, hydrophilic Vaseline, and white Vaseline), Kenalog, liquid paraffin, castor oil polyethoxylated hydrogenated, macrogol, and gelled hydrocarbon.

[0029]

Also disclosed is~~A preferred embodiment of the present invention~~ is a self-magnetic

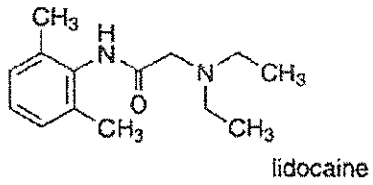


[0064]

Also disclosed is~~Furthermore, the present invention provides~~ a local anesthetic having a self-magnetic metal-salen complex compound wherein R_3 is a substituent represented by any of the following formulas (28) to (38) obtained as a result of desorption of hydrogen from a compound which has a methyl group and whose charge transfer is less than 0.5 electors (e).

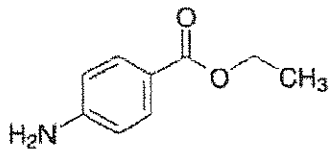
[0065]

(28) General name: lidocaine



[0066]

(29) General name: ethyl aminobenzoic acid

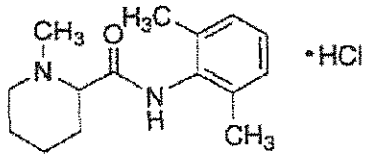


[0067]

(30) General name: oxybuprocaine hydrochloride

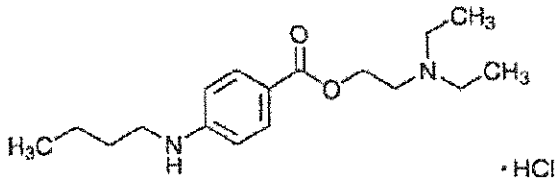
[0072]

(35) General name: mepivacaine



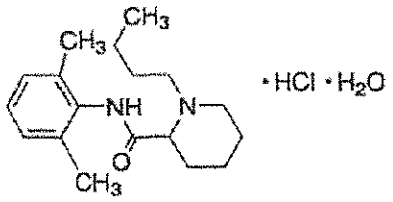
[0073]

(36) General name: p-butylaminobenzoyldiethylaminoethanol hydrochloride



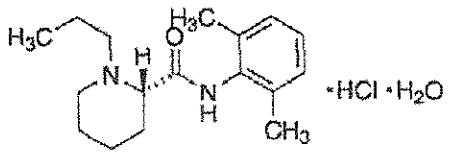
[0074]

(37) General name: bupivacaine hydrochloride



[0075]

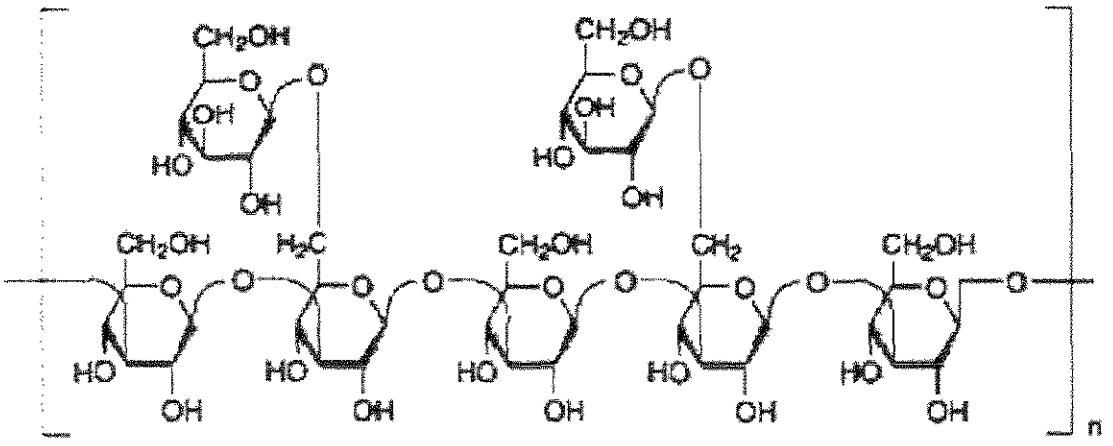
(38) General name: ropivacaine hydrochloride hydrate



[0076]

Also disclosed is~~Furthermore, the present invention provides~~ an antineoplastic drug having a self-magnetic metal-salen complex compound wherein R_3 is any one of compounds represented by the following formulas (39) to (103), which combines with a main skeleton of the compound of the above formula I via a linking group

formula67

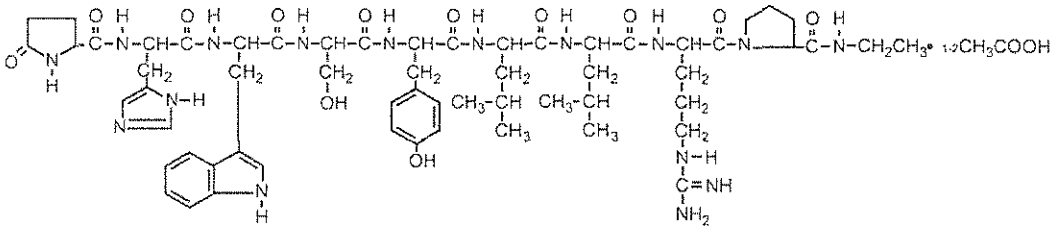


[0142]

Also disclosed is~~Furthermore, the present invention provides~~ an antineoplastic drug having a self-magnetic metal-salen complex compound wherein R_3 is composed of any one of compounds represented by the following formulas (104) to (109).

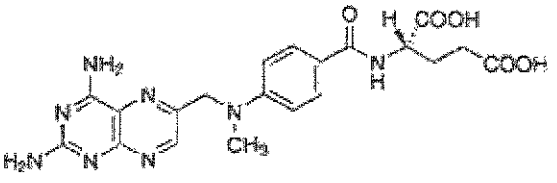
[0143]

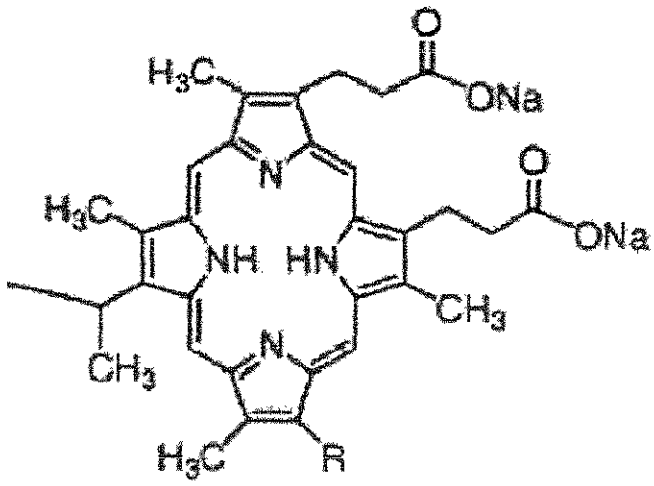
(104) Product name: Leuplin; and general name: leuprorelin acetate, anti-tumor agent



[0144]

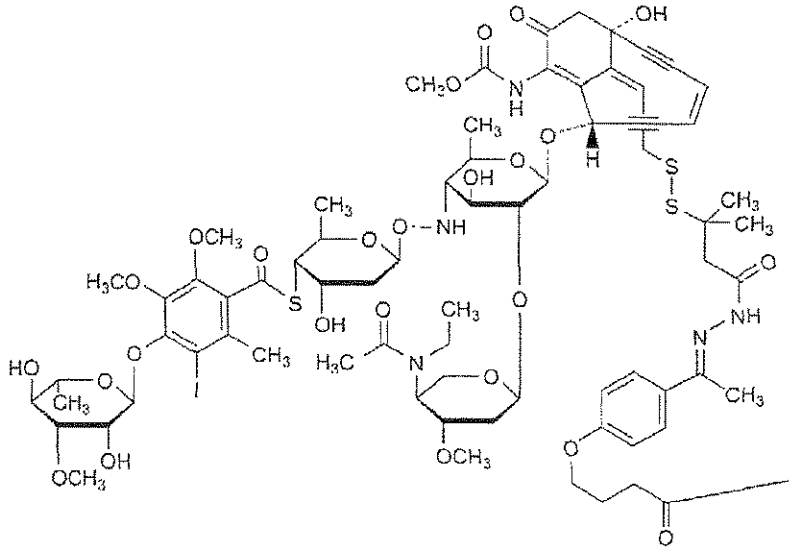
(105) Product name: methotrexate; and general name: methotrexate, anti-tumor agent





[0148]

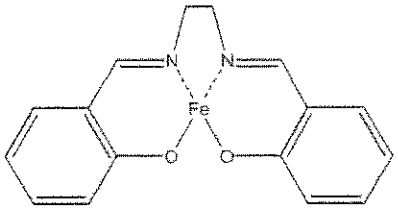
(109) Product name: Mylotarg; and general name: gemtuzumab ozogamicin, anti-tumor agent



[0148a]

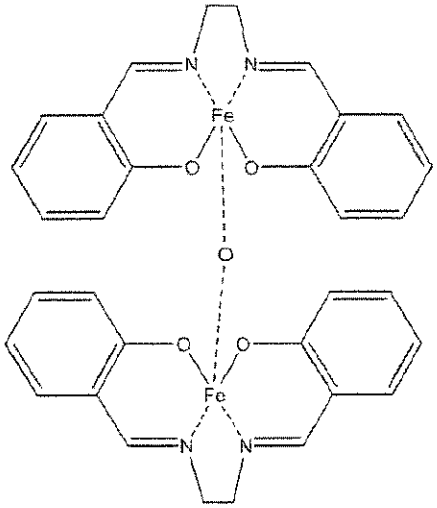
In another aspect, the present invention provides the use of a self-magnetic metal-salen complex compound in the manufacture of medicament for use as an antineoplastic drug, wherein compound is either one of:

Formula (V):



, or

Formula (IV):



,

and wherein the medicament is an ointment and is mixed with a base.

[Advantageous Effects of Invention]

[0149]

According to the present invention, it is possible to provide a metal-salen complex compound, which exhibits excellent noninvasiveness and can be efficiently transferred to an affected site, a local anesthetic containing this metal-salen complex compound, and an antineoplastic drug containing this metal-salen complex compound.