

-continued

	neomycin, phenylephrine, nitrofurazone, of which 100 ml contain:		
	mixed salt of hyaluronic acid with neomycin, with phenylephrine and with sodium (see preparation example 17)	2.890 g	5
	chloramphenicol	0.500 g	
	nitrofurazone	0.02 g	
	distilled water q.b.a.	100 ml	
Example 26	A collirium with dexametasone phosphate, kanamycin E phenylephrine, of which 100 ml contain:		10
	mixed salt of hyaluronic acid with kanamycin and phenylephrine (see preparation Example 15)	3.060 g	
	dexametasone phosphate sodium salt	0.100 g	15
	methyl p-hydroxybenzoate distilled water q.b.a.	0.060 g 100 ml	
Example 27	a collirium which may be used as "artificial tears", containing:		
	a hyaluronic acid sodium salt HYALECTIN fraction	10 mg	20
	saline buffered with phosphate pH 7.6 M	10 ml	
Example 28	a collirium which may be used as "artificial tears", containing:		
	hyaluronic acid sodium salt HYALECTIN fraction	20 mg	25
	saline buffered with phosphate pH 7.6 M	10 mg	

Although the above preparations have been described for exemplary purposes, it will be appreciated that the pharmaceutical formulations could be prepared by combining the hyaluronic fractions, particularly, the HYALECTIN or HYALASTINE fractions or the combined hyalectin/hyalastine fraction, or the potassium or sodium salts thereof, with other active drugs, and at various dosages depending upon the particular use for the formulation.

Hyaluronic acid, particularly in the substantially pure HYALECTIN and HYALASTINE fractions, has therefore, been shown to be an effective vehicle or excipient for use in combination with various drugs having ophthalmic utility or activity. Pharmaceutical compositions containing the HA fractions as the drug vehicle are particularly useful because the HA fractions exhibit a high level of tolerability to the eye and a high compatibility with the corneal epithelium. Use of the HA fractions, moreover, provides a means for actually enhancing the in vivo biological activity of ophthalmic drugs. The use of the particular HYALECTIN and HYALASTINE HA fractions is further useful and important because these fractions, when administered in the eye, do not exhibit undesirable inflammatory side reactions.

The invention being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

We claim:

1. A pharmaceutical composition which comprises as an active ingredient a pharmacologically effective amount of a partial or a stoichiometrically neutral salt of hyaluornic acid or a molecular weight fraction thereof with at least one pharmacologically active substance of a basic nature suitable for topical administration and which is capable of being absorbed intradermally or

through the nasal or rectal mucosa, together with an excipient suitable for topical administration.

2. A pharmaceutical composition according to claim 1, wherein said salt is a partial salt wherein a first portion of the acid groups of the hyaluronic acid is salified with at least one pharmacologically active substance suitable for topical administration.

3. A pharmaceutical composition according to claim 2, wherein a second portion of the acid groups of said hyaluronic acid is salified with an alkali or an alkaline earth metal, magnesium, aluminum or ammonium.

4. A pharmaceutical composition according to claim 1, wherein said salt is a stoichiometrically neutral salt in which all of the acid groups of the hyaluronic acid are salified with a pharmacologically active substance suitable for topical administration, an alkali or alkaline earth metal, magnesium, aluminum or ammonium.

5. A pharmaceutical composition according to claim 1, wherein said hyaluronic acid is a fraction having an average molecular weight between about 30,000 and 730,000.

6. A pharmaceutical composition according to claim 5, wherein said fraction is substantially free of hyaluornic acid having a molecular weight less than 30,000.

7. A pharmaceutical composition according to claim 6, wherein said fraction has an average molecular weight between about 50,000 and 100,000.

8. A pharmaceutical composition according to claim 6, wherein said fraction has an average molecular weight between about 500,000 and 730,000.

9. A pharmaceutical composition according to claim 1, wherein said active substance is suitable for dermatological, otorhinolaryngological, odontological, angiological, obstetrical or neurological use.

10. A pharmaceutical composition according to any one of claims 1, 4, 6 or 7, wherein said pharmacologically active substance is an antibiotic, anti-infective, antiviral, antimicrobial, anti-inflammatory, wound healing, cytostatic, cytotoxic, anesthetic, cholinergic promotor, cholinergic antagonist, adrenergic promotor or adrenergic antagonist agent.

11. A pharmaceutical composition according to claim 1, wherein said pharmacologically active substance is an antibiotic.

12. A pharmaceutical composition according to claim 1, wherein said pharmacologically active substance is an anti-infective, anti-viral or anti-microbial agent.

13. A pharmaceutical composition according to claim 1, wherein said pharmacologically active substance is a wound healing agent.

14. A method for the treatment of ophthalmological conditions which comprises topically applying to the cornea a pharmaceutical composition according to claim 1.

15. A method according to claim 14, wherein said pharmacologically active substance is an antibiotic.

16. A pharmaceutical composition which comprises hyaluronic acid or a pharmaceutically acceptable salt thereof and a non-steroid anti-inflammatory agent or a pharmaceutically acceptable salt thereof.

17. A pharmaceutical composition according to claim 16, wherein said non-steroid anti-inflammatory agent is a member selected from the group consisting of indomethacin, oxyphenbutazone and flurbiprofen.

18. A pharmaceutical composition which comprises hyaluronic acid or a pharmaceutically acceptable salt thereof and a non-steroid anti-inflammatory agent.

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