[0053] 【Table 4】

Ingredients (%)	022-1	022-4	023-5	023-7	029-10	028-1	028-2	028-5	028-6	028-7	029-12	029-14
Zileuton (Q301)	-	-	-	-	-	-	-	-	-	-	-	-
Water	-	-	-	57	16	-	-	10~31				
White petrolatum	43	38~48		24	20	43	38	18~31				
White wax	6	6	6	6	5	7	7	5~9				
Propylene glycol(PG)	24	32~42		10	55	47	52	25~55				
Stearyl Alcohol	16	-	-	-	-	-	-	-	-	-	-	-
Propylene glycol stearate	-	-	-	-	-	-	-	-	-	-	-	-
Phospholipon 90H	-	3	3	3	4	3	3	4	4	4	4	4
Ethanol	-	-	-	-	-	-	-	-	-	-	10.5	10.5
Aluminum starch octenyl-succinate	11	11	11	-	-	-	-	-	-	-	-	-
Appearance	Little dry cream	Cream	Cream	Liquid	Ointment	Oily cream	Very oily cream	Cream	Cream	Cream	Cream	Cream
Approximate solubility (%)	-	-	-	-	<1.3%	<3%	-	<0.1%	<0.3%	<0.7%	<2.3%	<2.5%

[0054] As shown in Table 4, it was found the composition ratios of 022-4, 023-5, 028-5, 028-6, 028-7, 029-12, and 029-14 provide suitable cream type formulation. From the aforementioned result, it was confirmed that the amount ratios of water, white petrolatum, white wax, and propylene glycol have critical significance in the aforementioned ranges.

[0055] 3. Optimization test of cream processing method

[0056] A condition that satisfies the physical and chemical stability with a target drug concentration (1%) was screened based on the amount ratios discovered in the composition optimization test. For this purpose, the ingredients other than the solvents such as propylene glycol and water were mixed according to the amount ratios disclosed in Table 5 under 70 ℃, and then the remaining solvents were mixed at 70 ℃ and 800 rpm or less. The mixed cream composition was stirred at or less

than 100 rpm and cooled to room temperature.

[0057] Physical stabilities were measured by checking with the naked eye whether or not phase separation occurred after leaving a sample for a certain period of time at a condition of 25 °C, 30 °C or 40 °C. This is a test to discover an optimized processing method for obtaining a cream formulation.

[0058] 【Table 5】

Ingredients (%)	030-1	030-2	030-3	030-4	032-4	033-1	033-2	033-3	033-4	033-5	033-6	033-7
Zileuton (Q301)	-	-	-	-	-	-	-	-	-	-	-	-
Water	10~12								17~21			
White petrolatum	18~20								17~21			
White wax	6	6	6	6	6	6	6	6	6	6	6	6
Propylene glycol(PG)	51	51	53	55	55	51	54	51	48	52	54	56
Phospholipon 90H	4	4	4	4	4	5	5	4	4	4	4	4
Ethanol	4.5~9								-	-	-	-
Stirring time(min)	20	20	20	20	20	20	20	20	20	20	20	20
Shape	Cream	Cream	Cream	Cream	Cream	Cream	Cream	Cream	Cream	Cream	Cream	Cream
Approximate solubility (%)	<2.1%	<1.8%	<2.7%	<2.7%	<2.3%	<2.1%	<2.1%	<2.1%	<1.3%	<1.5%	<1.7%	<2.1%
Physical stability at 25℃	Bad	Bad	Bad	Bad	Bad	Bad	Bad	Bad	Good	Good	Good	Good

[0059] As disclosed in Table 5, it was found that the formulation conditions of 033-4, 033-5, 033-6, and 033-7 provide excellent physical stability at 25 ℃ so as to dissolve active pharmaceutical ingredient 1% or more. Furthermore, the aforementioned cream formulations do not comprise ethanol, and this is because ethanol deteriorates physical stability.

[0060] Next, as a test for optimizing the processing method for cream type formulation, in order to find out whether the stirring time

CLAIMS

1. A cream type topical anti-inflammatory pharmaceutical composition, comprising: zileuton of 0.05 to 2 weight% as an active ingredient; water of 30 to 34 weight%; white petrolatum of 36 to 40 weight%; white wax of 4 to 8 weight%; propylene glycol of 16 to 22 weight%; hydrogenated phophatidylcholine of 2 to 6 weight%; and preservative of 0.005 to 0.04 weight.

2. A composition according to Claim 1, in which the composition comprises zileuton of 0.1 to 1 weight% as an active ingredient; water of 31 to 33 weight%; white petrolatum of 37 to 39 weight%; white wax of 5 to 7 weight%; propylene glycol of 18 to 20 weight%; hydrogenated phophatidylcholine of 3 to 5 weight%; and preservative of 0.01 to 0.03 weight%.

3. A composition according to Claim 1, in which the preservative is one or more selected from a group consisting of methylparaben, ethylparaben, propylparaben, isobutylparaben, butyl paraben, 2-phenoxy ethanol, and 4-hydroxybenzoic acid.

4. A composition according to Claim 1 for use in a method of relieving or treating atopic dermatitis, acne, urticaria, psoriasis, eczema, bullous skin diseases such as bullous pemphigoid, collagenoses, Sjogren-Larsson syndrome, or acne in skin lesions of mastocytosis.

5. A composition according to Claim 1, in which the composition is for topical application to human skin.

6. A composition according to Claim 1, in which zileuton is racemic zileuton.

7. A method for preparing a cream type topical anti-inflammatory pharmaceutical composition, comprising: mixing zileuton of 0.05 to 2 weight% as an active ingredient; water of 30 to 34 weight%; white petrolatum of 36 to 40 weight%; white wax of 4 to 8 weight%; propylene glycol of 16 to 22 weight%; hydrogenated phophatidylcholine of 2 to 6 weight%; and preservative of 0.005 to 0.04 weight% under a mixing condition of a temperature of 30 to 80 ℃ and 600 to 1200 rpm, for 10 to 60 minutes.

8. A method according to Claim 7, in which the method comprises mixing zileuton of 0.1 to 1 weight%; water of 31 to 33 weight%; white petrolatum of 37 to 39 weight%; white wax

of 5 to 7 weight%; propylene glycol of 18 to 20 weight%; hydrogenated phophatidylcholine of 3 to 5 weight%; and preservative of 0.01 to 0.03 weight%.

9. A method according to Claim 7, in which the preservative is one or more selected from a group consisting of methylparaben, ethylparaben, propylparaben, isobutylparaben, butyl paraben, 2-phenoxy ethanol, and 4-hydroxybenzoic acid.

10. A method according to Claim 7, further comprising cooling the mixed active ingredients at a temperature of 20 to 30 ℃ while stirring at 600 rpm or less.

11. A method according to Claim 7, in which zileuton is racemic zileuton.