Open Access

Journal of Scientific Insights
E-ISSN: 3062-8571
DOI: https://doi.org/10.69930/jsi.v2i5.507
Research Article

ScienceTech. Group

Vol. 2 (5), 2025
Page: 471-487

Affinity Test of Generic and Patent Cream Preparations of the Corticosteroid Class with the Active Ingredient Mometasone Furoate

Lusyana Mareta Soepriyadhy *, Meiti Rosmiati

Department of Pharmacy DIII, Faculty of Health, Piksi Ganesha Polytechnic, Indonesia
*Email (corresponding author): lusyanamaretasoepriyadhy@gmail.com

Abstract. *Increased pollution contributes to cases of atopic dermatitis, which is often treated with topical corticosteroid creams. This study assessed the preference for three creams from two generic industries and one patented product using an affinity test, namely the Hedonic Test and the Hedonic Quality Test. A total of 20 untrained panelists assessed aspects of odor, color, and texture using a 5-point hedonic scale. Data were analyzed using ANOVA and Duncan test. The results showed that texture had significant differences between Samples, with Sample B being rated the lowest. Aroma showed a tendency to differ, but not significantly, while colors were rated similar across all Samples. These findings indicate that product quality improvement should be focused on improving texture and aroma stability to increase consumer acceptance.*

Keywords: *Hedonic test, hedonic quality test, corticosteroid cream, mometasone furoate*

1. Introduction

As an industrialized country, the rapid increase in industrialization in urban areas as a cause of air or atmospheric pollution leads to an increased incidence of skin diseases such as atopic eczema or atopic dermatitis, psoriasis, skin cancer and melasma due to repeated releases of high levels of pollutants into the environment (Lee et al., 2024; Roberts, 2021).

Skin diseases are becoming very common because they can occur from infancy to adulthood, inflammatory itching that can decrease the quality of life and can affect the psychological well-being of patients (Roberts, 2021; Srinivas, 2018). Skin diseases such as inflamed atopic dermatitis can be caused by *staphylococus aureus* bacteria in humid conditions or rooms can accelerate the growth of these bacteria, and can be caused by other environmental factors such as bed hygiene (Cheng et al., 2023; Rahmadiah et al., 2024).

Inflamed skin diseases can be treated with corticosteroid drugs. Corticosteroids contain steroid hormones produced by the adrenal cortex (Spada et al., 2018). The glands of the adrenal cortex that can produce natural stheorids, sex hormones and bile salts needed by the body (Hayati et al., 2023). One type of corticosteroid is Glucocorticoids which refer to the group of steroid hormones and are no less important because they have indications as anti-inflammatory, antipruritus and immunosuppressants (Mahardika et al., 2022; Zvidzayi et al., 2021).

There are 2 corticosteroid drug preparations, namely topical (cream, ointment) and oral (tablet), in the field of dermatology, topical corticosteroids were introduced in 1951 as F compound or hydrocortisone which is widely used to treat inflammatory and non-infectious conditions of the skin and is often prescribed and used for people with skin diseases such as atopic dermatitis, eczema, psoriasis, and *lupus erythematosus* (Alamsyah & Emelia, 2022).

Received: 3 August 2025 / Accepted: 8 September 2025 / Available online: 10 September 2025

The cream is a topical pharmaceutical preparation that belongs to the semi-solid form and is used for external use. It is commonly used as an emollient and/or for the treatment of skin diseases. There are two types of creams, namely the Oil in Water (M/A) type and the Water in Oil (A/M) type cream. Oil-in-water type cream can be easily absorbed into the skin tissue because cream as a water-soluble drug is very volatile and its concentration can increase, so the advantage of the cream is that it can be washed off with water, it can be easily evenly distributed (Li & Chowdhury, 2025). Because of these many advantages, creams are preferred over ointments. A good and stable cream is with a formulation process with several concentrations of emulsifiers that use a type of surfactant so that it has an ideal viscosity (Baskara et al., 2020).

Mometasone Furoate cream is mometasone furoate, in the appropriate cream base ingredient, containing Mometasone Furoate, not less than 90.0% and not more than 110.0% of the amount stated on the label (*Indonesian Pharmacopoeia Edition VI,* 2020).

A patent drug is a pharmaceutical preparation that is marketed under a specific trademark, registered in the name of the manufacturer or authorized party, and packaged in its original form from the manufacturer's factory (Albrecht, 2022). This type of drug is still under patent protection, so its production and distribution rights are only owned by the patent holder. Based on *Law Number 13 of 2016 Article 22 concerning the Patent Protection Period*, (2016) protection for patents is granted for two decades from the date of filing. During this period, the exclusive rights to production and marketing remain with the patentee company. The other party can only produce the drug if there is a special agreement with the patent owner.

In contrast, generic drugs are pharmaceutical preparations that use the name of an active substance based on International Non-proprietary Names (INNs), as defined in the Indonesian Pharmacopoeia or other official references. Generic drugs are classified into two, namely Branded Generic Drugs (OGB) and Branded Generic Drugs (OBM). Despite differences in terms of trade names and packaging appearance, the three types of drugs patented, OGB, and OBM have the same active ingredient and show equivalent therapeutic effectiveness (De Backer et al., 2025; Verawaty et al., 2022).

The affective test is one of the organoleptic tests based on the sensory properties of a person getting a response that can measure the level of liking a product. Usually to find out the comparison of the quality of products that have similar characteristics. 2 types of Affection Test consist of; 1) Preference Test (Hedonic Test); 2) Hedonic Quality Test (Nidatrisuci, 2023).

The usual Liking Test is also called the Hedonic Test, and is best known as a test to find out the level of consumer liking for a product. To find out this, it is done by choosing the level of liking or commonly called the hedonic scale, which includes choices such as very like, like, neutral, dislike, and very dislike. A direct assessment is carried out using the human senses as a tool by seeing colors, smelling, and feeling the texture of a product that is still in the development stage or comparing the product with competitor products that are already on the market whose results can be converted into numerical data for statistical analysis. Basically, this test cannot predict whether the assessment of the product guarantees that it can be accepted by many people (Syiatud D., 2025; Trivedi, 2017).

In general, the hedonic quality test does not indicate likes or dislikes, The effect of hedonic quality is more detailed than just likes or dislikes. This quality can be general (good-bad) or specific depending on the product, for example very tender, tender, slightly tender, slightly hard, hard, very the meat or crispy on cucumbers (Kulawik-Pióro & Miastkowska,

2021). The hedonic scale indicates a level of quality from very good to very poor, with the number of scale levels varying depending on the needs of the quality range and the sensitivity of the assessment. So many researchers use hedonic quality tests into hedonic tests, so that the results obtained meet certain limits so that they can be liked by many people (Jorge, 2021; Syiatud D., 2025)

2. Methods

This study adapts the affectation test method conducted by Arziyah et al. (2022) by involving as many as 20 untrained panelists to evaluate the characteristics of the preparation based on aspects of aroma, color, and texture. The assessment was carried out using a 5-point hedonic scale, where a score of 1 indicates a very high dislike and a score of 5 indicates a very high level of likability. Data from the panelists' assessments were used to assess the level of acceptance of the formulations being tested.

The samples/products used in this study are 2 generic creams from 2 different pharmaceutical industries and 1 patent cream of the corticosteroid group with the same active ingredient, namely Mometasone Furoate. Samples are put into a cream pot with codes A, B, and C. Sample A is a generic cream from industry A, Sample B is a generic cream from industry B, and Sample C is a patent cream.

The hedonic test was carried out using the human senses as a support to smell scents, feel textures, and see colors organoleptically and provide assessments on a hedonic scale. The hedonic scale with an increasing number is:

Table 1. Hedonic Scale

Hedonic scale	Numeric scale
Very Much Dislike	1
Dislike	2
Neutral	3
like	4
Very Like	5

The hedonic quality test was carried out by further specifying the characteristics of the sample such as color, texture, and aroma by describing it through a hedonic scale. The Hedonic scale for the assessment of hedonic quality of the sample is as follows :

Table 2. Hedonic Scale of Aroma

Hedonic scale	Numeric scale
Very powerful	1
Strong	2
Quite Strong	3
Weak	4
Very weak	5

Table 3. Hedonic Scale Color

Hedonic scale	Numeric scale
Very weak	1
Weak	2
Quite Strong	3
Strong	4
Very Powerful	5

Table 4. Hedonic Scale Texture

Hedonic scale	Numeric scale
Very Rough	1
Rough	2
A Bit Rough	3
Soft	4
Very Soft	5

To do the assessment, the panelists fill out a questionnaire that has been prepared, by giving a "✓" mark to the questionnaire column as follows :

Description of the answer choice :

Table 5. Description of the questionnaire answer options

Hedonic test		Hedonic quality test			
		Aroma and color		Texture	
STS	Very dislike	SK	Very powerful	SK	Very rough
TS	Dislike	K	Strong	K	Rough
N	Neutral	AK	Quite strong	AK	A bit rough
S	Like	L	Weak	L	Soft
SS	Really like	SL	Very weak	SL	Very soft

Table 6. Hedonic Test Questionnaire

Sample	Statement	Answer options				
		STS	TS	N	S	SS
A	Aroma					
	Texture					
	Color					
B	Aroma					
	Texture					
	Color					
C	Aroma					
	Texture					
	Color					

Table 7. Hedonic Quality Test Questionnaire

Sample	Statement	Answer options				
		CS	K	AK	L	SL
A	Aroma					
	Texture					
	Color					
B	Aroma					
	Texture					
	Color					
C	Aroma					
	Texture					
	Color					

Data processing was carried out using SPSS software with a one-way analysis statistical test (*ANOVA)* based on the panelists' assessment at a significance level of 5% (α = 0.05). If the significance value (sig.) > 0.05, then it can be concluded that there is no significant difference between treatments. On the other hand, when the value of sig. < 0.05, showed a marked difference, and the analysis was followed by the Duncan test to identify significantly different treatment groups (Yusfiani & al., 2021).

3. Results and Discussion

The analysis of hedonic and hedonic quality test data was carried out using variance analysis (ANOVA) through SPSS software, the analysis was followed by the Duncan test as a post hoc method to determine different treatment groups in real terms with the results of the assessment and the results of data analysis as follows (Stefanov & Andonova, 2021).

3.1 Hedonic Test

Table 8. Hedonic Test Assessment Results

Valuation	Criterion	Sample A	%	Sample B	%	Sample C	%
Aroma	Very dislike	0	0%	2	10%	4	20%
	Dislike	3	15%	4	20%	5	25%
	Neutral	11	55%	8	40%	6	30%
	Like	4	20%	4	20%	5	25%
	Really like	2	10%	2	10%	0	0%
	Sum	**20**	**100%**	**20**	**100%**	**20**	**100%**
Texture	Very dislike	0	0%	1	5%	0	0%
	Dislike	1	5%	12	60%	4	20%
	Neutral	4	20%	4	20%	4	20%
	Like	14	70%	2	10%	11	55%
	Really like	1	5%	1	5%	1	5%
	Sum	**20**	**100%**	**20**	**100%**	**20**	**100%**
Color	Very dislike	0	0%	0	0%	0	0%
	Dislike	0	0%	0	0%	0	0%
	Neutral	5	25%	9	45%	6	30%
	Like	4	20%	8	40%	11	55%
	Really like	11	55%	3	15%	3	15%
	Sum	**20**	**100%**	**20**	**100%**	**20**	**100%**

Based on the results of the hedonic test on aroma attributes, Sample A obtained the majority of assessments in the neutral category (55%), with the proportion of panelists who liked the scent (the category like and liked very much) of 30%, and 15% who did not like it. This shows that the aroma in Sample A tends to be moderate and does not stand out too much in triggering the panelists' preferences. Meanwhile, Sample B showed a wider distribution of assessments, with a dislike rate of 30% and a preference rate of 30%. This condition reflects that the scent of Sample B is not consistently accepted by the panelists. Sample C received the lowest rating in terms of scent, with 45% of panelists stating dislike (dislike and dislike very much), and 25% stating likes, but none stating that they liked it very much. Therefore, it can be concluded that Sample A is superior in aroma attributes, judging from the low level of dislike and the high level of likability compared to the other two samples.

In terms of texture, Sample A received the most positive response, where 75% of panelists stated that they liked texture (like and like it very much), only 5% disliked, and no panelists stated that they disliked it very much. In contrast, Sample B showed the highest level of dislike, with 65% of panelists stating disliking the texture, and only 15% giving a positive rating. Sample C took the middle position, with 60% of panelists liking the texture, although there were still 20% of panelists who rated it as disliked. Based on this, Sample A is the sample with the most preferred texture, followed by Sample C, and Sample B shows the lowest texture quality based on the panelists' perception (Stacey & McEleney, 2021).

Assessments of color attributes generally showed positive results for all samples, as none of the panelists gave a dislike or strongly dislike rating. Sample A showed the highest level of preference in the "very like" category (55%), indicating that the color of this sample had strong visual appeal. Sample C also showed good results, with 70% of panelists stating likes or very likes, making it the sample with the highest proportion of "likes". Sample B obtained a more moderate color rating, with 55% of panelists stating a like or very much like it, but the proportion of neutral ratings is still high (45%). Therefore, Sample A is seen as having the highest color appeal, followed by Sample C, while Sample B is in last place in terms of visual preference based on color.

Table 9. Anova Analysis Results from Hedonic Test

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Aroma Aspect	Between Groups	4,300	2	2,150	2,024	,142
	Within Groups	60,550	57	1,062		
	Total	64,850	59			
Texture Aspect	Between Groups	17,033	2	8,517	12,228	,000
	Within Groups	39,700	57	,696		
	Total	56,733	59			
Color Aspect	Between Groups	1,600	2	,800	1,355	,266
	Within Groups	33,650	57	,590		
	Total	35,250	59			

a. Aroma Aspect

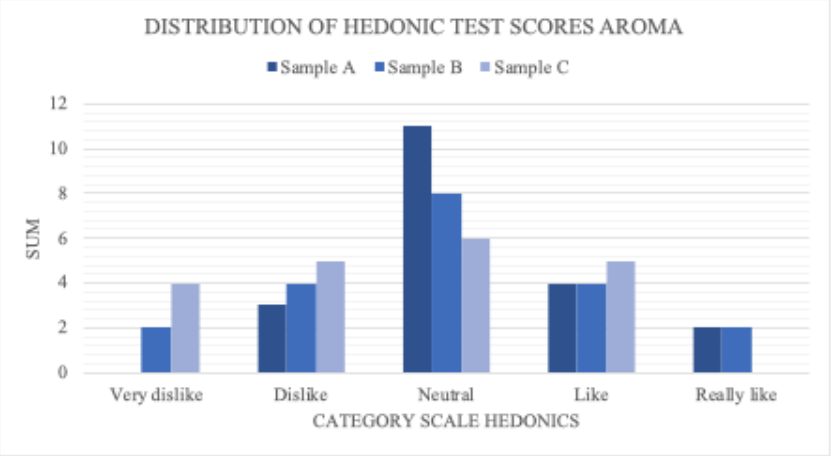

Figure 1. Hedonic Aroma Score on Three Cream Samples

The graph shows that Sample A received the highest response in the "Neutral" category (11 panelists), which indicates a scent that tends to be moderate and not very prominent.

Sample C showed mixed perceptions, with high scores in the "Dislikes" (5 panelists) and "Very dislikes" (4 panelists) categories, but also the highest in the "Likes" category (5 panelists). This shows that the scent of Sample C is polarizing, which is liked by some panelists, but rejected by others.

Sample B has a relatively balanced distribution, with no dominance in certain categories, so it can be said that the scent is quite safe but less emotionally appealing.

In the "Very liked" category, all samples scored the same (2 panelists), indicating that none of the scents were widely liked.

In general, the results show that the scent of all three samples has not reached optimal preference, and further evaluation is needed to improve sensory appeal.

The results of the ANOVA test on the aroma aspect showed a significance value of 0.142 ($p > 0.05$), which means that there was no significant difference between treatments. However, further tests were carried out using the Duncan test to evaluate the tendency of differences in aroma assessment between samples. The results are presented in Table 10.

Table 10. Duncan's Follow-Up Test Results on Aroma Aspects at 5% Significance Level

Aroma Aspect		
Duncan[a]		
		Subset for alpha = 0.05
Formula	N	1
Sample C	20	2,6000
Sample B	20	3,0000
Sample A	20	3,2500
Sig.		,063

Remarks: Samples in the same subset did not differ significantly based on the Duncan test.

All samples were in the same subset, which suggests that there was no significant difference between treatments of scent. However, there was a higher tendency to prefer Sample A, which had the highest average score (3.25), followed by Sample B (3.00) and Sample C (2.60). The significance value is close to the critical limit ($p = 0.063$), so it can be concluded that there is an early indication of differences in aroma perception, although it is not statistically significant.

b. Texture Aspect

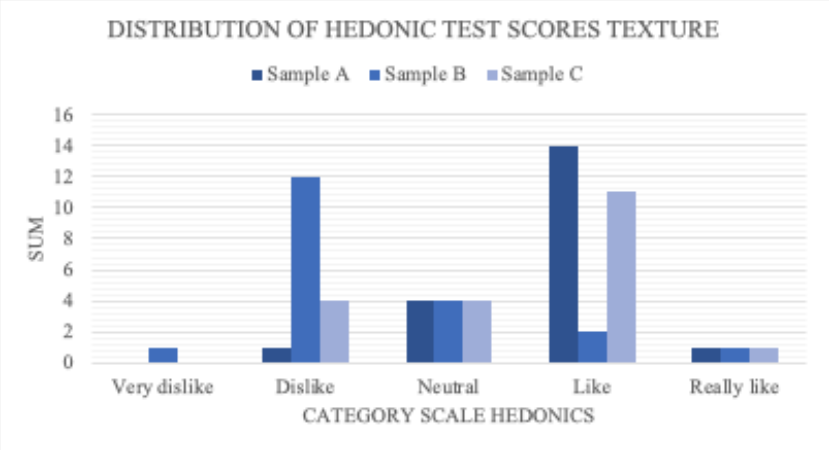

Figure 2. Hedonic texture Score on Three Cream Samples

The results of the hedonic test showed that Sample A was the most preferred in terms of texture, with 14 panelists giving a rating of "Like", and only 1 panelist stating "Very dislike". This signifies that the texture of Sample A has characteristics that match the preferences of the majority of panelists, such as being easy to even out and comfortable on the skin.

Sample C also showed good acceptance, with 11 panelists giving a "Like" score, although the "Dislike" score (5 panelists) was slightly higher than Sample A.

In contrast, Sample B had the lowest results, with 13 panelists saying "Dislike", and very few saying "Likes" (2 panelists). This shows that the texture of Sample B needs to be improved because it does not meet the expectations of the panelists.

The "Neutral" category was relatively balanced across all samples (5 panelists each), indicating that there were some panelists who did not have strong preferences.

Overall, Sample A was the most superior in texture, while Sample B showed the lowest performance and required reformulation.

For the texture aspect, the ANOVA results showed a significance value of 0.000 ($p < 0.05$), which means that there was a significant difference between treatments. Further tests using Duncan were carried out to find out the real different treatment groups. The results are presented in Table 11.

Table 11. Duncan's Advanced Test Results on Texture Aspects at 5% Significance Level

Texture Aspect			
Duncan[a]			
		Subset for alpha = 0.05	
Formula	N	1	2
Sample B	20	2,5000	
Sample C	20		3,4500
Sample A	20		3,7500
Sig.		1,000	,260

Remarks: Samples in different subsets show significant differences based on the Duncan test.

Sample B is in a different subset of Sample A and Sample C, which shows significant differences in texture assessment. Sample A had the highest average score (3.75), followed by Sample C (3.45), while Sample B had the lowest score (2.50). This shows that the treatment given to Sample A and Sample C resulted in a texture that the panelists preferred over Sample B.

c. Color Aspect

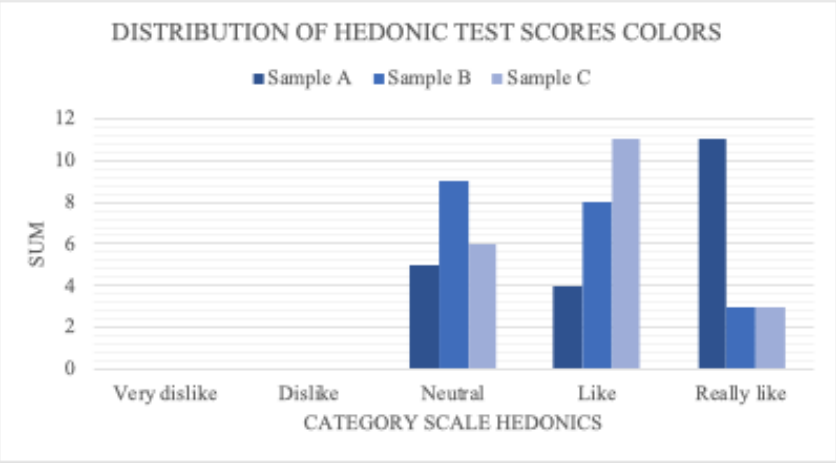

Figure 3. Hedonic color Score on Three Cream Samples

The results of the hedonic test showed that Sample C was the most preferred in the color aspect, with the highest score in the "Likes" category (11 panelists). Sample A excelled in the "Very liked" category (11 panelists), showing a strong preference from some panelists for the color.

Sample B stood out in the "Neutral" category (9 panelists), which indicates that the colors in this sample are not very prominent but are still acceptable. In the "Dislikes" and "Very dislikes" categories, the entire sample received very low ratings, indicating that the color aspect was generally well received by the panelists.

Overall, the color aspect of all three samples showed a positive acceptance rate, with scores dominating in the "Likes" and "Very likes" categories, although specific preferences varied.

For the color aspect, the ANOVA results showed a significance value of 0.266 ($p > 0.05$), which means that there was no significant difference between treatments. However, Duncan's follow-up test was still carried out to assess the tendency of differences between samples. The results are presented in Table 12.

Table 12. Duncan's Advanced Test Results on Color Aspects at 5% Significance Level

Color Aspect		
Duncan[a]		
		Subset for alpha = 0.05
Formula	N	1
Sample B	20	3,5500
Sample C	20	3,7500
Sample A	20	3,9500
Sig.		,125

Remarks: Samples in the same subset did not differ significantly based on the Duncan test.

All samples belonged to the same subset, indicating that there was no significant difference between treatments of color aspects. However, there was the highest color preference tendency in Sample A (3.95), followed by Sample C (3.75) and Sample B (3.55). The significance value of 0.125 reinforces the ANOVA results that the differences are not statistically significant, but nonetheless indicate a pattern of preferences that are noteworthy for further exploration.

3.2 Hedonic Quality Test

This study aims to evaluate the differences in the hedonic quality of products from three main aspects, namely aroma, texture, and color, by using one-way variance analysis (ANOVA) and Duncan's follow-up test to determine its significance. The assessment was carried out by 20 panelists who used a 5-point hedonic scale to assess preferences for products with the following results.

Table 13. The Results of Hedonic Quality Test

Valuation	Criterion	Sample A		Sample B		Sample C	
			%		%		%
Aroma	Very Powerful	1	5%	3	15%	3	15%
	Strong	1	5%	8	40%	3	15%
	Quite strong	6	30%	5	25%	7	35%
	Weak	12	60%	4	20%	5	25%
	Very weak	0	0%	0	0%	2	10%
	SUM	**20**	**100%**	**20**	**100%**	**20**	**100%**
Texture	Very Powerful	0	0%	1	5%	0	0%
	Strong	1	5%	4	20%	1	5%
	Quite strong	0	0%	8	40%	2	10%
	Weak	16	80%	6	30%	15	75%
	Very weak	3	15%	1	5%	2	10%
	SUM	**20**	**100%**	**20**	**100%**	**20**	**100%**
Color	Very Powerful	0	0%	0	0%	0	0%
	Strong	5	25%	5	25%	4	20%
	Quite strong	6	30%	8	40%	4	20%
	Weak	7	35%	6	30%	11	55%
	Very weak	2	10%	1	5%	1	5%
	SUM	**20**	**100%**	**20**	**100%**	**20**	**100%**

The results of the evaluation of aroma attributes showed that Sample A tended to have a low intensity of aroma, with the majority of panelists (60%) rating it in the "weak" category. Only 10% of panelists rated the scent of this sample to be in the category of "strong" to "very strong", which indicates that the scent of Sample A is less prominent. Meanwhile, Sample B obtained a stronger perception of scent than the other two samples, with more than half of the panelists (55%) giving a "strong" and "very strong" rating. Sample C showed a more varied distribution of ratings, with the highest proportion in the "somewhat strong" (35%) and "weak" (25%) categories, and 10% rated the scent as "very weak". This variability reflects the lack of consistency of aroma perception in Sample C. Based on these results, it can be concluded that Sample B has the most preferred aroma intensity, followed by Sample C, while Sample A is considered to have the weakest aroma.

In terms of texture, Sample A obtained the most positive assessment results, with 80% of panelists rating the texture "soft" and 15% rating it "very soft". There were no ratings in the rough texture category, which suggests that Sample A's texture was most acceptable to the panelists. In contrast, Sample B showed a spread of assessments that tended to be negative, with only 30% of panelists rating it "soft", while 40% stated that the texture was "somewhat rough". This condition indicates that the texture of Sample B is less preferable. Sample C was rated quite well, with 75% of panelists stating the texture to be "soft" and 10% "very soft", although there were still 15% of respondents stating the texture was somewhat rough to coarse. Overall, Sample A was judged to have the best texture, followed by Sample C, while Sample B received the most negative texture perception (Shanbhag et al., 2021).

Assessments of color attributes showed that Sample A had a relatively balanced distribution of assessments, with 35% of panelists rating the colors "strong" and 30% "somewhat strong". However, there were still 25% of panelists who rated the color of this sample as "weak", which indicates that the color intensity is not fully optimal. In Sample B, most panelists gave "somewhat strong" (40%) and "strong" (30%) ratings, indicating that the

color of this sample was quite visually appealing. Sample C obtained the best results, with more than half of the panelists (55%) rating the colour "strong", indicating that the colour of Sample C was most preferred visually.

Table 14. Anova Analysis Results from Hedonic Quality Test

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Aroma Aspect	Between Groups	9,033	2	4,517	4,294	,018
	Within Groups	59,950	57	1,052		
	Total	68,983	59			
Texture Aspect	Between Groups	10,433	2	5,217	9,135	,000
	Within Groups	32,550	57	,571		
	Total	42,983	59			
Color Aspect	Between Groups	,900	2	,450	,538	,587
	Within Groups	47,700	57	,837		
	Total	48,600	59			

a. Aroma Aspect

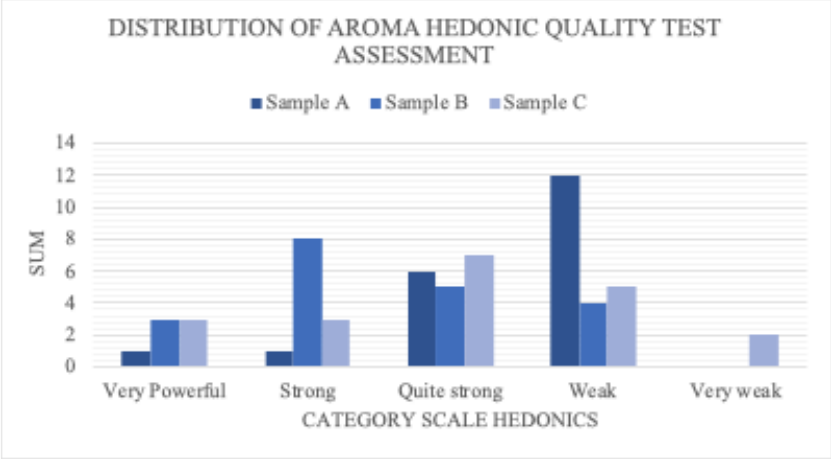

Figure 4. Hedonic Aroma Score on Three Cream Samples

The aroma quality test showed that Sample A was rated the weakest by the panelists (12 panelists chose the "Weak" category), while Sample B tended to be stronger (8 panelists in the "Strong" category). Sample C was in the middle, with most panelists rating the scent "Somewhat strong" (7 panelists).

Extreme ratings such as "Very strong" and "Very weak" were rare, indicating that the aroma intensity of all samples was still within reasonable limits, only Sample C obtained a

"Very weak" rating from 2 panelists, indicating very mild scent perception in a small percentage of panelists.

The ANOVA results showed an F value of 4.294 with a significance level of p = 0.018 (< 0.05), which indicated a significant difference in aroma between samples. And further tests were carried out using the Duncan test to evaluate the tendency of differences in aroma assessment between samples. The results are presented in Table 15.

Table 15. Duncan Test Results Hedonic Quality Test on Aroma Aspects

Aspek Aroma			
Duncan[a]			
		Subset for alpha = 0.05	
Formula	N	1	2
Sample B	20	2,5000	
Sample C	20	3,0000	3,0000
Sample A	20		3,4500
Sig.		,129	,171

However, the follow-up Duncan test showed that the differences between the sample pairs were not significant individually, with the average scent values for Sample B being 2.50, Sample C being 3.00, and Sample A being 3.45. The significance value of the Duncan test was greater than 0.05 (p = 0.129 and p = 0.171), so the difference in aroma although present, was not strong enough to specifically distinguish the sample from each other.

a. Texture Aspect

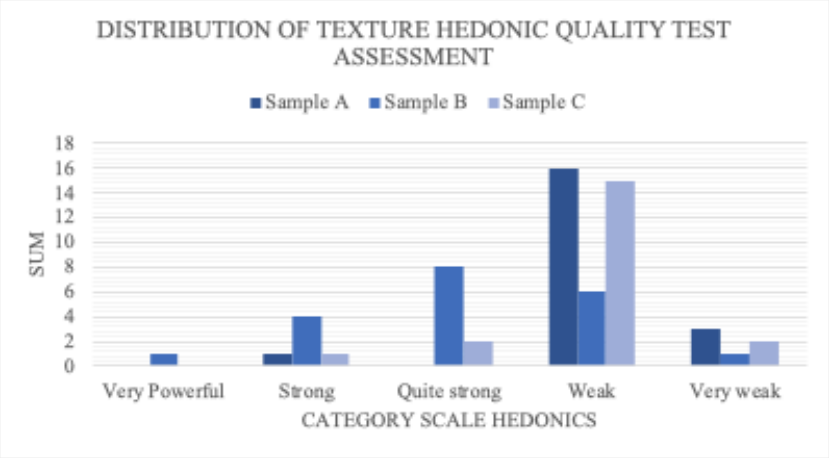

Figure 5. Hedonic Score of Texture on Three Cream Samples

Texture quality tests showed that Samples A and C were rated "Soft" the most, respectively by 16 and 15 panelists, indicating a comfortable texture and according to preference.

Sample B was rated the lowest, with 8 panelists choosing "Somewhat rough" and only 7 rating "Soft", indicating a less than optimal texture. Extreme ratings such as "Very rough" and "Very soft" are rarely given, so most samples are still within the acceptable texture range.

In general, Samples A and C excel in texture softness, while Sample B requires improvement.

ANOVA's analysis of texture yielded an F value of 9.135 with p = 0.000 (< 0.05), which means that there was a very significant difference in texture between samples. And further

tests were carried out using the Duncan Test to evaluate the tendency of differences in aroma assessment between samples. The results are presented in Table 16.

Table 16. Results of the Duncan Test Hedonic Quality Test on Texture Aspects

Texture Aspect			
Duncan[a]			
Formula	N	Subset for alpha = 0.05	
		1	2
Sample B	20	3,1000	
Sample C	20		3,9000
Sample A	20		4,0500
Sig.		1,000	,533

Based on the Duncan test, Sample B with an average texture value of 3.10 differed significantly from Sample C (3.90) and Sample A (4.05) which were included in one group. These findings indicate that the panelists were able to clearly distinguish the texture of Sample B compared to the other two samples. This variation in texture may come from differences in raw materials, processing methods, or product treatments that affect texture characteristics such as the hardness or softness of the product. These differences in texture play an important role in shaping sensory experiences and consumer preferences.

b. Color Aspect

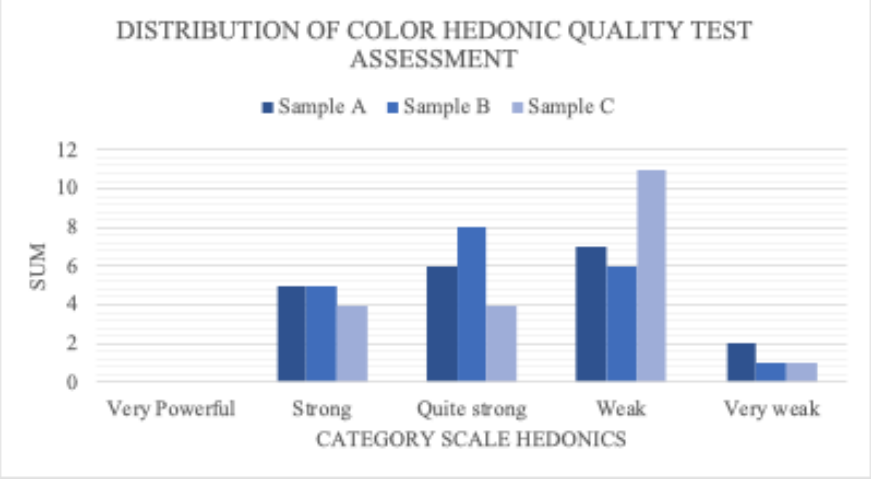

Figure 6. Hedonic Color Score on Three Cream Samples

The results showed that Sample C was rated the most strongly in terms of color by 11 panelists, indicating colors that were more striking or as per visual expectations. Sample B stood out in the "Somewhat strong" category (8 panelists), while Sample A was evenly distributed in the "Weak", "Somewhat strong" and "Strong" categories.

The entire sample had slight ratings in extreme categories such as "Very weak" and "Very strong", which indicates that the color intensity was within a reasonable range. In general, Sample C excelled in color intensity, followed by Samples B and A, although all three were still acceptable to the panelists.

The ANOVA results for the color aspect showed an F value of 0.538 with p = 0.587 (> 0.05), indicating no significant color difference between samples. And further tests were

carried out using the Duncan test to evaluate the tendency of differences in aroma assessment between samples. The results are presented in Table 17.

Table 17. Results of the Duncan Test Hedonic Quality Test on Color Aspects

Aspek Warna		
Duncan[a]		
		Subset for alpha = 0.05
Formula	N	1
Sample B	20	3,1500
Sample A	20	3,3000
Sample C	20	3,4500
Sig.		,334

The results of the Duncan test also support this, with a significance value of p = 0.334 (> 0.05) and the average color value of sample B was 3.15, sample A was 3.30, and sample C was 3.45, which was in one group. This shows that the panelists were unable to distinguish the color differences significantly.

Conclusions

Based on the results of the hedonic test on three samples, it can be concluded that Sample A shows the most overall superior performance in terms of aroma, texture, and color. Sample C occupies the second position, with the main strength being in texture and color. In contrast, Sample B has the lowest acceptance rate, especially on texture attributes. The results of the hedonic quality test showed that each sample had different sensory advantages, namely Sample B had an advantage over aroma, Sample A in texture, and Sample C superior to color attributes.

Based on the results of the ANOVA analysis and Duncan's follow-up test on the hedonic test and hedonic quality, it can be concluded that the treatment has a significant influence, especially on the aspects of texture and aroma. In the hedonic test, Sample A and Sample C in terms of texture were preferred over Sample B. In the hedonic quality test, aroma and texture had a significant effect on the quality assessment, with the most striking difference being found in the texture of Sample B.

This article uses limited panelists. Therefore, follow-up research is suggested involving a larger and more diverse number of panelists to obtain more representative results by involving panelists from different backgrounds of age, gender, and skin conditions will provide a broader picture regarding the preferences and convenience of using corticosteroid creams.

Funding

This research received no external funding.

Conflicts of Interest

The authors declare no conflict of interest.

References

Alamsyah, K. D., & Emelia, R. (2022). Evaluasi Penggunaan Obat Kortikosteroid pada Penderita Penyakit Dermatitis di RSAU dr. M. Salamun Bandung. *Cerdika: Jurnal Ilmiah Indonesia*, *2*(1), 1–8. https://doi.org/10.36418/CERDIKA.V2I1.308

Albrecht, J. (2022). The power of topical steroids. *JAMA Dermatology*, *158*(7), 727–729.

Arziyah, D., Yusmita, L., & Wijayanti, R. (2022). Analisis Mutu Organoleptik Sirup Kayu Manis dengan Modifikasi Perbandingan Konsentrasi Gula Aren dan Gula Pasir. *Jurnal Penelitian Dan Pengkajian Ilmiah Eksakta*, *1*(2), 105–109. https://doi.org/10.47233/JPPIE.V1I2.602

Baskara, I. B. B., Suhendra, L., & Wrasiati, L. P. (2020). Pengaruh Suhu Pencampuran dan Lama Pengadukan terhadap Karakteristik Sediaan Krim. *Jurnal Teknologi Industri Pertanian*. https://ojs.unud.ac.id/index.php/jtip/article/download/60652/35067

Cheng, T., Tai, Z., Shen, M., Li, Y., Yu, J., Wang, J., Zhu, Q., & Chen, Z. (2023). Advance and challenges in the treatment of skin diseases with the transdermal drug delivery system. *Pharmaceutics*, *15*(8), 2165.

De Backer, J., Clarke, J., Sadafi, H., Ganley, W., & Spires, J. (2025). Leveraging Model Master Files from a Technology Company Perspective: Facilitating Quantitative Medicine in Regulatory Frameworks. *Pharmaceutical Research*, 1–9.

Farmakope Indonesia Edisi VI. (2020). Kementerian Kesehatan Republik Indonesia.

Hayati, P., Isnani, N., & Tahdi, M. (2023). Gambaran Tingkat Pengetahuan Masyarakat Tentang Obat Kortikosteroid Deksametason Di Apotek Nuur Muhammad Banjarmasin. *JEMPOL: Jurnal Elektronik Mahasiswa Polanka*, *1*(1), 15–20. https://doi.org/10.52674/JMPL.V1I1.83

Jorge, P. S. (2021). *Drug absorption through the nasal mucosa: current challenges*. Universidade de Lisboa (Portugal).

Kulawik-Pióro, A., & Miastkowska, M. (2021). Polymeric gels and their application in the treatment of psoriasis vulgaris: A review. *International Journal of Molecular Sciences*, *22*(10), 5124.

Lee, W., Chaudhary, F., & Agrawal, D. K. (2024). Environmental Influences on Atopic Eczema. *Journal of Environmental Science and Public Health*, *8*, 101–115. https://doi.org/10.26502/jesph.96120209

Li, V. C. Y., & Chowdhury, M. M. U. (2025). Dermatological pharmacology: topical agents. *Medicine*.

Mahardika, R. D., Oetari, F., & Puspitaningrum, R. (2022). Studi Literatur Dampak Kortikosteroid pada Wanita Hamil dan Pertumbuhan Janin. *CERATA Jurnal Ilmu Farmasi*, *13*(1), 19–24. https://doi.org/10.61902/CERATA.V13I1.455

Nidatrisuci, N. (2023). *Uji Daya Terima Cookies Berbasis Tepung Labu Kuning dan Tepung Kacang Hijau Sebagai Alternatif Makanan Tambahan Pencegahan Anemia pada Ibu Hamil*.

Rahmadiah, A., Amir, A., Hidayati, F., Guspianto, G., & Putri, F. E. (2024). Hubungan Personal Hygiene dengan Gejala Dermatitis pada Narapidana di Lembaga Pemasyarakatan Kelas II A Jambi Tahun 2024. *Jurnal Kesmas Jambi*, *8*(2), 94–100. https://doi.org/10.22437/JKMJ.V8I2.35466

Roberts, W. (2021). Air pollution and skin disorders. *International Journal of Women's Dermatology*, *7*(1), 91–97. https://doi.org/10.1016/J.IJWD.2020.11.001

Shanbhag, T. V, Shenoy, S., & Nayak, V. (2021). *Pharmacology for Dentistry E-book*. Elsevier Health Sciences.

Spada, F., Barnes, T. M., & Greive, K. A. (2018). Comparative safety and efficacy of topical mometasone furoate with other topical corticosteroids. *Australasian Journal of Dermatology*, *59*(3), e168–e174.

Srinivas, S. (2018). *Comparative Study of Dermoscopic Findings in Chronic Hand Eczema and Palmar Psoriasis*. Rajiv Gandhi University of Health Sciences (India).

Stacey, S. K., & McEleney, M. (2021). Topical corticosteroids: choice and application. *American Family Physician*, *103*(6), 337–343.

Stefanov, S. R., & Andonova, V. Y. (2021). Lipid nanoparticulate drug delivery systems: recent advances in the treatment of skin disorders. *Pharmaceuticals*, *14*(11), 1083.

Syiatud D., M. (2025). *Uji Hedonik dan Mutu Hedonik Es Krim Susu Sapi dengan Penambahan Pasta Ubi Jalar Ungu (Ipomoea batatas L)*. https://scholar.googleusercontent.com/scholar?q=cache:Bg3SZdUlkFQJ:scholar.google.com/

Trivedi, F. D. (2017). *Regulatory Strategy for Extending Mometasone Furoate Cream Dossier From US to Brazil, Europe and India*. Institute of Pharmacy, Nirma University, A'bad.

Undang-Undang Nomor 13 Tahun 2016 Pasal 22 Tentang Jangka Waktu Pelindungan Paten. (2016). Sekretariat Negara.

Verawaty, V., Dewi, I. P., & Kota, F. M. (2022). Tingkat Pemahaman Tenaga Teknis Kefarmasian Terhadap Obat Paten dan Obat Generik di Kota Padang. *Jurnal Riset Kefarmasian Indonesia*, *4*(1), 24–33. https://doi.org/10.33759/JRKI.V4I1.230

Yusfiani, M., & al., et. (2021). Studi Marinasi Udang Kecap Asin: Uji Hedonik. *Jurnal Pengolahan Pangan*, *6*(1), 35–41. https://doi.org/10.31970/PANGAN.V6I1.48

Zvidzayi, M., Rath, S., Bon, C., Abboo, S., & Kanfer, I. (2021). A novel approach to assess the potency of topical corticosteroids. *Pharmaceutics*, *13*(9), 1456.

CC BY-SA 4.0 (Attribution-ShareAlike 4.0 International).

This license allows users to share and adapt an article, even commercially, as long as appropriate credit is given and the distribution of derivative works is under the same license as the original. That is, this license lets others copy, distribute, modify and reproduce the Article, provided the original source and Authors are credited under the same license as the original.