



# Evaluation of different brands of tretinoin cream available in Saudi Arabian market

Student Name: Bader S. Alhawashi and Khalid A. Alabdullatif

Supervisors Name: Dr. Yousef Bin Jordan, Abdul Ahad, and Mohammad Raish

## INTRODUCTION

Tretinoin, also known as all-trans-retinoic acid, is a naturally occurring derivative of vitamin A (retinol). Topically tretinoin is used to treat acne, to smooth rough facial skin, and to reduce the appearance of fine wrinkles and mottled skin discoloration. Topical formulation of tretinoin available in different strengths and forms (e.g., gel, cream, solution).

## OBJECTIVES

Different marketed generic cream products of tretinoin are now available in market. Various factors such as pH, homogeneity, spreadability and stability could affect the performance of topical formulation, and therefore, the final product should be tested. **The main objective of the present study was to evaluate two products of tretinoin cream (0.05 %) which are commercially available in the Saudi Arabian market.**

## METHODS

Both the marketed products were evaluated for appearance, pH, homogeneity, spreadability, and stability study. The pH of the tretinoin creams was directly measured using the digital pH meter. For spreadability measurement, the increase in diameter of the cream due to spreading was noted. The appearance and homogeneity of all creams was examined by visual inspection and touch. All cream products were subjected to stability study and changes in parameters like color, odor, pH, homogeneity and

## RESULTS

- **Appearance:** Both creams products are found uniform in colour and no lumps formation was visible.
- **pH:** The pH of cream-A and cream-B was found  $6.30 \pm 0.29$  and  $5.89 \pm 0.12$  which are in acceptable range for topical products.
- **Homogeneity:** Both creams products are homogenous, smooth in touch and freed from any gritty particles. This was confirmed by visual appearance and by touch.
- **Spreadability:** Cream -A and cream - B showed spreadability of  $306.67 \pm 16.07\%$  and  $215.00 \pm 10.00\%$  respectively.
- **After feel:** Emolliency, slipperiness and amount of residue left after the application of fixed amount of cream was found.
- **Type of smear:** After application of cream, the type of smear formed on the skin were non greasy.
- **Removal:** The cream applied on skin was easily removed by washing with tap water.
- **Stability study:** Cream-A and cream-B did not show any changes in parameters like color, pH, homogeneity and spreadability on storage at room temperature for one month.

## DISCUSSION & CONCLUSIONS

Based on the obtained results both the tested tretinoin products are assumed to be pharmaceutically equivalent

## REFERENCES

1. Noble S, Wagstaff AJ. Tretinoin. *Drugs & Aging* 1995; 6: 479–496.
2. Maru and Lahoti. Formulation and evaluation of moisturizing cream containing sunflower wax. *International Journal of Pharmacy and Pharmaceutical Sciences* 2018; 10: 54-59.
3. Misar KS, Kulkarni SB, & Gurnule WB. Formulation and evaluation of antiacne cream by using clove oil. *Materials Today: Proceedings* 2020; 29: 1251–1258.
4. Sahu RK, Roy A, Kushwah P, Sahu A. Formulation and development of face cream containing natural products. *Research*