

DERIVATIZATION OF THE LOW-PRICED COMMERCIAL RETINOL FOR THE ANTI-AGING COSMETICS

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A retinol is a well-known source material for the anti-aging cosmetics due to its superior effects on the anti-wrinkle and anti-skin aging, and lots of cosmetic manufacturers have used it for the high-priced anti-aging products. However it is easily oxidized in the air and the oxidation causes the side effects like the skin irritation and a poor delivery of the active ingredients into the skin. Thus the stability improvement of the retinol must be required to minimize the side effects and enhance the absorbability and moisturizing property of the final products.

In this study, the derivatization of the retinol was performed to enhance the stability and the low-priced commercial retinol was used as the material to strengthen the competitiveness of the retinol based anti-aging products.

A commercial Retinol 50C (BASF) was separated from the additives by the column chromatography for the purification and the retinol purified would be applied to the derivatization. The retinyl acetate would be synthesized through the esterification with the acetyl chloride (Figure 1) and the derivatives were finally recovered as the crystal through the crystallizing purification. Their structural and physicochemical properties were analyzed by ¹H-NMR and FT-IR and it was confirmed that the purification of the low-priced retinol and the derivatization of the retinol purified were performed successfully (Figure 2).

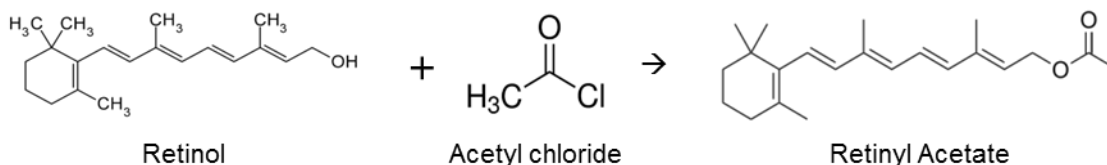


Figure 1. Derivatization of the retinol through the esterification

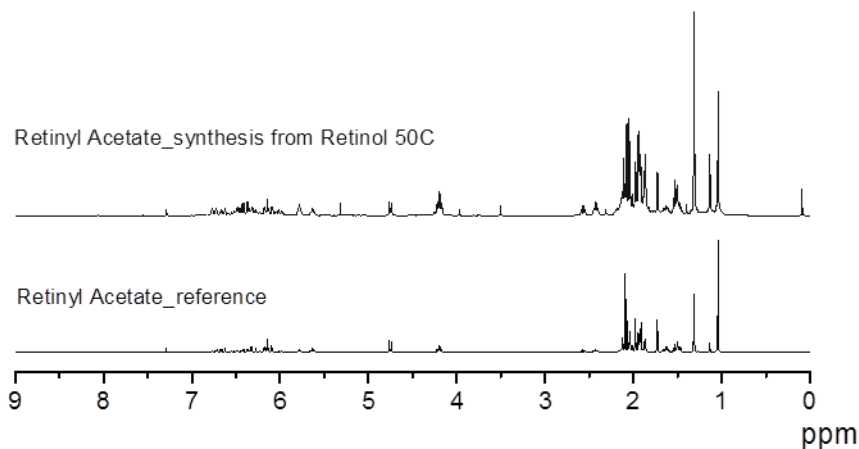


Figure 2. Retinyl acetate syntheses from the low-priced retinol