Detection of Stereoselective Ethylidenation of Ring A on the Alkali Fragmentation of 3,23-Dioxo-7,24-lanostadien-26-oic Acids

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3,23-Dioxo-7,24-lanostadien-26-oic acids (1), the components of a natural mixture of triterpenoids from needles of Siberian fir, may to undergo a side-chain fragmentation with formation of piruvic acid and the diketone (2). This diketone undergoes to reaction with piruvic acid formed in situ on first stage of conversion and resulted in the reaction leading eventually to a 2-ethylidene derivative (3), whose structure was recognized from NMR spectra and supported by X-ray analysis of its product of photoisomerization (4).

1: \( R = \text{CH}=\text{C(CH}_3\text{)}\text{COOH } (Z \text{ or } E) \); 2: \( R = \text{CH}_3 \)

3: (2(31)E); 4: (2(31)Z)