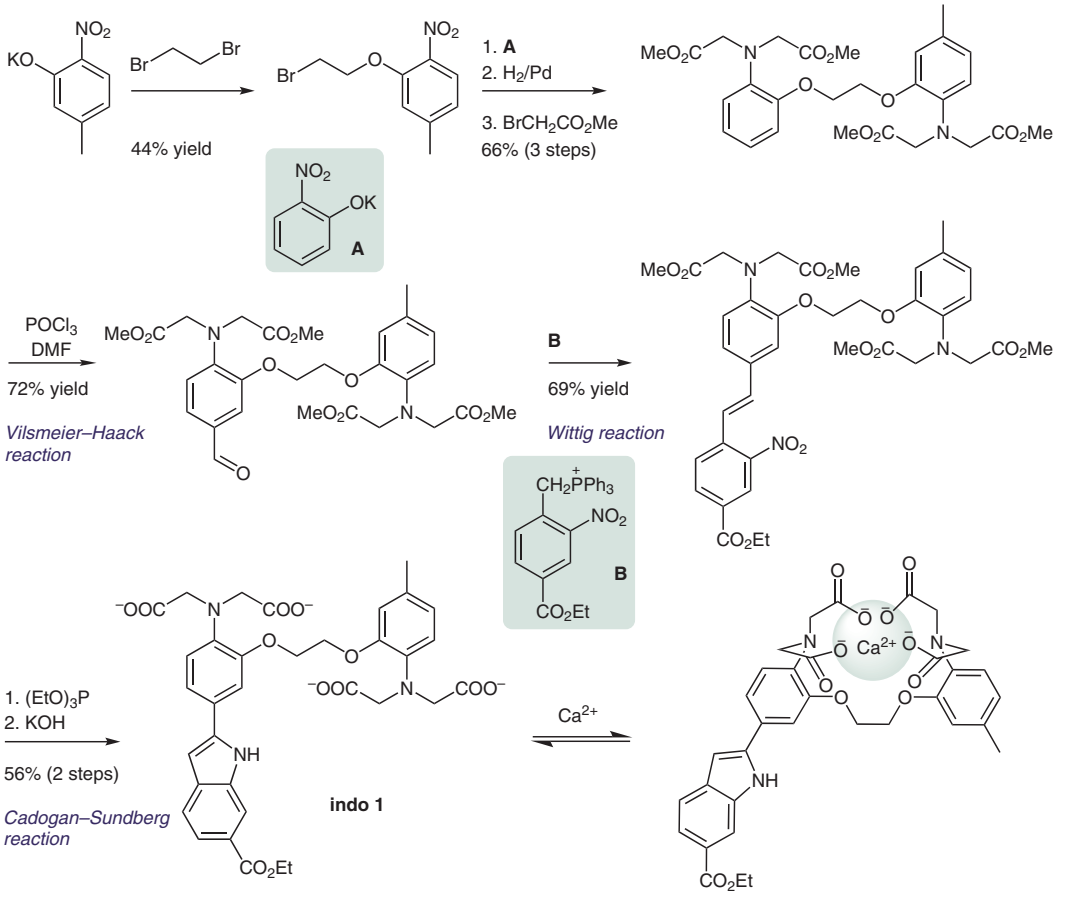
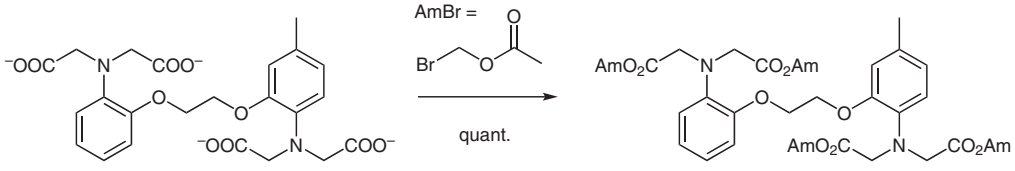
G. GRYNKIEWICZ, M. POENIE, R. Y. TSIEN* (UNIVERSITY OF CALIFORNIA, BERKELEY, USA)

A New Generation of Ca^{2+} Indicators with Greatly Improved Fluorescence Properties
J. Biol. Chem. **1985**, *260*, 3440–3450.

Development of Fluorescent Ca^{2+} Sensors



Development of acetoxymethylester-dyes (AM-Dyes):



AM-Dye

Significance: Calcium sensors such as **indo 1** are routinely used in biological research to monitor calcium mobilization. Calcium can be mobilized from various subcellular compartments (e.g., ER, lysosomes, or mitochondria) and via different mechanisms (e.g., activation of G_q-coupled GPCRs or ion channels).

Comment: **Indo 1** and five other fluorescent calcium indicators were synthesized through related synthetic routes. They can be easily converted into **AM-Dyes.** The general synthesis of **AM-Dyes** was published in *Nature* **1981**, *290*, 527–528.

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