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## The Effects of Cyclodextrins on the Color Change of Acid-base Indicators

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To detect various kinds of cyclodextrins by visual observation, the authors selected 7 kinds of acid-base indicators from commercially available ones whose color were changed by the addition of various kinds of cyclodextrins at specified pH. They were methyl orange, methyl yellow, congo red, methyl red, bromocresol green, *m*-cresol purple and phenolphthalein. By the addition of methyl yellow,  $\alpha$ -CD was detected through the change from turbid whitish yellow to light yellow at the pH range of 5-10.  $\beta$ -CD was appropriately detected by the addition of phenolphthalein at pH 10.5, and contamination of  $\gamma$ -CD in this sample was checked by the addition of bromocresol green at pH 5.0-10.0 through the color change of greenish blue or blue to blue or light pale blue. The color of congo red was changed by the presence of various kinds of starch degraded polymers having a certain degree of polymerization. After the treatment of mixture of CD and dextrans with glucoamylase,  $\beta$ -CD and  $\gamma$ -CD were detected by the addition of congo red at pH 5.0.

**Key words:** detection of cyclodextrin, acid-base indicator, color change (methyl orange; methyl yellow; congo red; methyl red; bromocresol green; *m*-cresol purple; phenolphthalein)

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