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## Sizing $\alpha$ , $\beta$ and $\gamma$ cyclodextrins by capillary electrophoresis and indirect UV detection

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Cyclodextrins have ring structures made of glucose connected by 1,4-glycoside linkage and they differ in the number of glucose on the ring. The interior of cyclodextrin is considerably less hydrophilic than its exterior; therefore, they are useful for carrying hydrophobic molecules. Due to their hydrophilic exterior, they are able to penetrate body tissues, which makes them good candidates as drug carriers where they can release biologically active compounds under specific conditions. However, different sizes of cyclodextrins form different complex with the same molecule, so, it is important to know the size of each cyclodextrin. Indirect UV-capillary electrophoresis and Taylor dispersion analysis are used to size  $\alpha$ ,  $\beta$  and  $\gamma$  cyclodextrins. Because cyclodextrins have low UV absorbance, indirect UV is used in which the background electrolyte has significantly higher UV absorbance than the target molecules, therefore, resulting in negative peaks. Using TDA, diameters of  $\alpha$ - and  $\gamma$ -CD are calculated to be 0.70nm and 0.86nm. The small standard deviation indicated the precise and reproducible measurement.

### Biography

Yin Zhou is fourth-year undergraduate Chemical Biology student at the University of British Columbia. She has been an Analytical Chemistry Research Assistant in Chen Research Group since September 2015, where she started her own research project to size cyclodextrins. She is also an Organic Chemistry tutor in the same college, and Science and Math tutor for high school students. She mentored 14 high school students with their science projects. She has been a Social Psychology Research Assistant, being involved in Gerontology since 2015.

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