Rapid estimation of octanol-water partition coefficient for triazole fungicides by MEKC with sodium deoxycholate as surfactant

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Abstract	A rapid estimation of octanol-water partition coefficient (log P(ow)) was developed for triazole fungicides by micellar electrokinetic chromatography (MEKC). Five standard compounds with known log P(ow) values from 2.9 to 4.3 (cyproconazole, bromuconazole, epoxiconazole, bitertanol and difenoconazole) were used for constructing the calibration curve of the log P(ow) against the MEKC retention factor, log k. A linear relationship was achieved between log P(ow) and log k, in the MEKC system containing 40 mM sodium deoxycholate (SDC) and 4 mM borate buffer at pH 9.3, with a correlation of determination, r(2) = 0.9905. The log P(ow) values of four test compounds of triazole fungicides (triadimenol, myclobutanil, propiconazole and penconazole) were calculated based on the log k values measured by MEKC and the slope and intercept of the calibration curve. This MEKC method can give good estimation of the log P(ow) of the four test compounds of triazole fungicides with the differences between the literature log P(ow) values and estimated log P(ow) from the MEKC method were from 0.15 to 0.23 log units.
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