

### Paper chip for quantitative analysis using distance measurement

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Here we describe a paper chip that can quantitative analyze the concentration of analyst in the sample solution using distance measurement without using external electronic reader. We printed wax-pattern on the chromatography paper and heated it to form wax barrier which penetrate through the paper. We functionalized the paper chip by wicking tetrabromophenol blue to detect albumin as a analyst in sample solution. The analysis method of the paper ship is so simple that we spot a sample solution at sample pad and measure two distances of the sample solvent and albumin. We confirmed that the ratio of two distance is constant in the samples with same concentration of albumin. This measurement method in the paper chip is affordable and equipment-free. Therefore the paper chip maybe provide a inexpensive diagnostic device to the Third World countries.