بسمه تعالی

**فرم چکیده سخنرانی ژورنال کلاب دانشجویان دکترا ورودی**

دانشکده بهداشت – گروه مهندسی بهداشت محیط

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| **عنوان مقاله :**  **Polycaprolactone/silk fibroin electrospun nanofibers-based lateral flow test strip for quick and facile determination of bisphenol A in breast milk** |
| **چکیده :**  This study aimed to develop a sensitive lateral flow test strip for the detection of bisphenol A (BPA) in breast milk. Conventional nitrocellulose test membrane was coated with the coaxial nanofiber, consisting of the inner polycaprolactone (PCL) and the outer PCL/silk fibroin (SF) mixture, to decrease the flow rate of the breast milk in the lateral flow assay (LFA). The nanofiber was prepared by using coaxial electrospinning, and BPA antibody was immobilized physically to the nanofiber. This nanofiber was used as a test membrane in the LFA. Color changes on the test membrane were evaluated as the signal intensity of the BPA. Breast milk creates a background on surfaces due to its structural properties. This background was detected by comparing the signal intensity with the signal intensity of water. The higher signal intensity was found in water samples when compared to breast milk samples. Although the detection limit is 2 ng/ml in both coaxial PCL/SF nanofiber and nitrocellulose (NC) test membranes, the color intensity increased with the increasing BPA concentration in the coaxial PCL/SF nanofiber. As a new dimension, the coaxial PCL/SF nanofiber provided higher color intensity than the NC membrane. In conclusion, a sensitive onsite method was developed for the detection of BPA in breast milk by using new coaxial PCL/SF nanofiber as a test membrane in LFA. |