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Korea designs portable colour-changing food spoilage sensor

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Ingesting biogenic amines (BAs) released from spoiled food is harmful for the human body. Thus, it is important to detect these compounds during food storage and distribution to track spoilage. To this end, researchers at Pusan National University in South Korea have now combined polydiacetylene (PDA) liposome and alginate solution to create hydrogel for developing a colorimetric food spoilage sensor. This novel sensor easily detects biogenic amines in liquid or vapour form by changing colour from blue to red, without any complicated machinery.

The sensor is made of portable, light-weight beads and does not require complicated analytical equipment or skilled personnel. It offers rapid and seamless visual detection via colorimetric change in the beads from blue to red.

The team further put the sensor to test the spoilage of pork meat samples left at room temperature across 4 days. They showed that the sensor beads could efficiently track the gradual spoilage over time by showing a distinct shift in the shade of colour.

This portable PDA-based colorimetric sensor can facilitate the seamless monitoring of food spoilage during storage and distribution, and prevent health hazards arising from the ingestion of BAs.

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