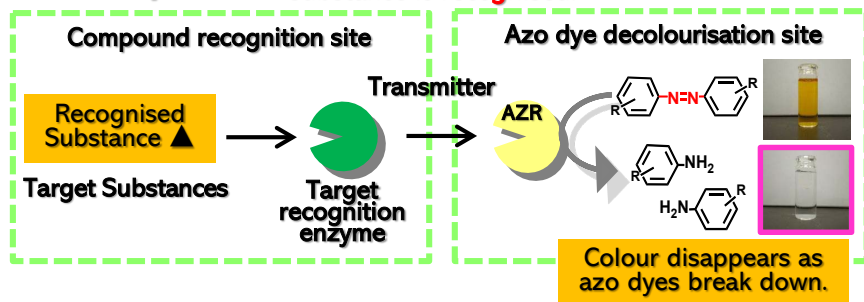


# Biosensors that tell you when colours are fading.

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## Concept

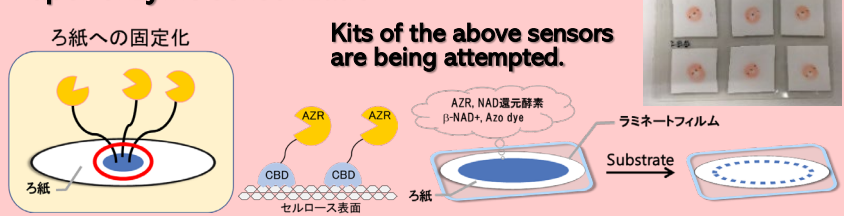
The colour disappears when the substance is recognised!



## Developed sensors

Recognised substances	Diagnosed	
Hypoxanthine	Freshness	Hypoxanthine when meat and fish decompose, Inosinic acid is detected when the taste increases.
Inosinic acid	Good for eating	
Ethanol	Drinking	Recognising target substances in the blood (diagnosis)
GPT, GOT	Liver disease	
Glucose	Blood sugar levels	
Methionine	Cancer	

## Paper enzyme sensorization



## Content :

Azo reductase (AZR) has the ability to decolorise azo dyes by breaking them down. By combining this AZR with another enzyme in a coupling reaction, a biosensor can be constructed that signals the presence of the target by a colour change, i.e. "when the other enzyme recognises the target (catalyses the reaction), the colour disappears".

In other words, a biosensor can be constructed that signals the presence of a target by changing colour. For instance, if you combine another enzyme, alcohol dehydrogenase (ADH), "the colour goes away on detection of ethanol", so you can make an alcohol sensor that can check for drinking.

These include an assay for the presence of the amino acid L-methionine, a marker for liver disease, and an assay for cancer. It has also developed a cancer sensor targeting an amino acid called L-methionine, a cancer marker. At present, genetic engineering has enabled the production of enzyme mutants which express the cellulose binding domain and the development of paper enzyme sensors for use as simple diagnostic devices.

Research Field : Chemistry&Biochemical Engineering

Speciality : Enzyme Technology, Organic Synthesis

Self introduction : My dream is to create an enzyme supplement that never gives hangovers.

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