

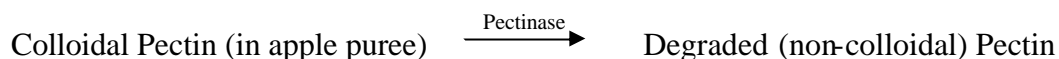
## ENZYME ACTION

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**NAME:** Pectinase

**DESCRIPTION:** Clear yellowish fluid, MC 23.7

**ACTION:** The enzyme Pectinase acts upon Pectin, a complex carbohydrate found in ripe fruit.



**STORAGE:** Store in the refrigerator at 4°C.

**SAFETY:** Enzymes are biologically active proteins and should be handled with care. Avoid direct contact or inhalation.

### TIPS FOR TEACHERS:

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#### Suggested pracs:

Place 50g of commercial apple puree into a glass beaker, add 1mL of pectinase and stir the enzyme through the puree. Allow to stand for 5 minutes. Pour the mixture into a funnel lined with muslin over a collection vessel and measure the volume of filtrate that accumulates. Compare the filtration rate to a control using 1mL of water added to the same mass of apple puree.

#### Comments and further Ideas:

Pectin is a naturally occurring polysaccharide that acts as a thickening agent in its colloidal form. When fruit is cooked with the correct amount of sugar, at the optimum pH, pectin is responsible for gelling the preparation into jam.

In this experiment, pectinase catalyses the breakdown of pectin and causes it to lose its colloidal properties. This reduces the viscosity of the puree and increases the juice yield. Pectinase activity is highest at low pH (3 – 5) and warm temperatures (25 – 40°C).

Take care to avoid using a puree that has been thickened with starch, as pectinase will have no effect.

Please note: Variations in substrate composition and enzyme activity can mean that the suggested experiment might not work exactly as described in every situation.