Pectinases were among the first enzymes used in homes. Industrial application of pectinase was carried out in 1930s at wine and fruit juice industry [1].

Pectin lyase (PL) degrades pectin with β-elimination mechanisms and 4,5-unsaturated oligogalacturonide is formed as a product[2]. Action mechanism of pectin lyase is seen in Fig.1 [3].

Pectinases have different applications at industrial scale. These applications are clarification of fruit juices, retting of natural fibers, treatment of pectic waste water, coffee and tea fermentation, oil extraction [4, 5, 6].

Fig.1. Action mechanism of pectin lyase

In this study, PL was produced in 2 submerged cultures with waste materials (pomegranate pulp), citrus pectin and wheat bran. Crude extract was obtained after centrifugation. Enzyme activity analysis and protein determination were performed. Appricot and lemon juice was obtained from fresh fruits with pressing. It was filtered from cheesecloth. Enzyme was added fruit juice samples. Clarification tests were carried out with measurement of transmittance with UV-vis spectrophotometer. Determination of ascorbic acid (vitamin C), protein contents of juices were also carried out before and after treatment with PL.

References


