

**Title** Expansins in cherry: Cloning of an expansin gene and its ripening specific promoter fragments from sour cherry (*Prunus cerasus* L.) cultivars

**Author** Mehmet Karaaslan and Geza Hrazdina,

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### **Abstract**

The presence of expansins was investigated in various developmental and ripening stages of cherry fruits by 1 and 2 SDS PAGE gels and immunoblotting. A fruit and ripening specific expansin gene and three fragments (242, 607, and 929 bp) of its promoter region were cloned. The genomic clone of the expansin gene contained three introns, two exons spanning 1.5 kb and a 1.0 kb upstream region. Semi quantitative PCR analysis showed that this gene was fruit and ripening specific. Chimeric promoter - GUS constructs were made and truncated forms of the expansin promoter were introduced into tomatoes by agroinjection and fruits were analyzed for GUS expression by histochemical GUS staining and enzyme activity assays. The 0.60 kb expansin promoter efficiently induced GUS expression in transgenic tomatoes, whereas constructs with the 0.25 kb promoter did not display significant GUS staining. The highest GUS activity was detected in tomatoes containing the 1.0 kb promoter construct.

Fruits from 'Montmorency' cherries were agroinjected with the 0.9 kb GUS- promoter constructs and checked histochemically for GUS expression. The GUS construct was also expressed in ripening cherries, although not at a similar level as in tomatoes.