Abstract

The invention provides transgenic plants, specifically tobacco plants, which accumulate the amino acid threonine in their leaves. The biosynthetic pathway leading to production of threonine is tightly regulated, and previous attempts to achieve a transgenic plant which overproduces threonine has compromised the fitness of the plants. This invention has overcome these difficulties and found a method of increasing the level of threonine in plant leaves above the corresponding wild type level without compromising plant fitness, comprising altering plant metabolism to achieve increased production of threonine after the initiation of leaf senescence. This invention involves a genetic construct comprising a senescence specific promoter operably linked to a coding sequence encoding a polypeptide having threonine insensitive aspartate kinase activity.

Fig. 9