Suc is the final product of photosynthesis, but before it can be utilized it must be cleaved into hexoses either by invertase (β-fructofuranosidase, EC 3.2.1.26) or by Suc synthase (EC 2.4.1.13). There are three recognized types of invertase present in plant cells: soluble neutral invertase, soluble acid invertase, and insoluble cell-wall acid invertase. Invertase genes encoding cell-wall and vacuolar (soluble) acid invertases have been characterized from Daucus carota (Ram-loch-Lorenz et al., 1993) and from Lycopersicon (either esculentum or pimpinellifolium, Elliott et al., 1993), respectively.

### Table I. Characteristics of Atbfruct1 from *A. thaliana*

<table>
<thead>
<tr>
<th>Organism:</th>
<th>Arabidopsis thaliana (L.) Heynh. ecotype Columbia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gene Product:</td>
<td>Cell-wall invertase (β-fructosidase, EC 3.2.1.26); hydrolysis of Suc.</td>
</tr>
<tr>
<td>Clone Types:</td>
<td>Genomic clone λ201 containing gene <em>Atbfruct1</em> in an EcoRI fragment of 4237 bp. cDNA clone <em>Atbfruct1</em>: full length, 1947 bp; pBluescript SK(−).</td>
</tr>
</tbody>
</table>
(cell wall and vacuole), irrespective of species and even for inverteases from the same plant (i.e. *D. carota*). Furthermore, inverteases from the same cell compartment (the vacuole) have scores higher than 45 even though they come from different species. ATBFRUCT1 has similarity scores of 25 and 30 with the two characterized vacuolar inverteases and a score of 45 with the cell-wall invertease from *D. carota*. These results strongly suggest that *Atbfruct1* codes for a cell-wall invertease.

**ACKNOWLEDGMENT**

We are grateful to Dr. A. Sturm for kindly providing us with the 1-kb fragment of carrot cell-wall invertease.

Received October 7, 1993; accepted October 26, 1993.

Copyright Clearance Center: 0032-0889/94/104/0809/02.

The EMBL accession numbers for the sequences reported in this article are X74515 (gene) and X74514 (cDNA).

**LITERATURE CITED**


