Mutation *air dots (adt)* with slight *uni*^{tac}-like effect on the leaf

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A recessive mutation *adt* was found in M_2 plants after EMS treatment of seeds of the stock SG. Formally, this mutation can be classified as an *aeromaculata* type (1). The most distinct feature of *adt* mutants is the numerous tiny grey spots along veins of leaflets and stipules (Fig. 1). In addition to this trait there are many devia-tions from the normal phenotype. The coloration of wings is very similar to that of the standard (Fig. 2), the pods are shorter and wider, and the leaves often (but not always) look like the leaves of the *uni*^{tac} mutant (3) in that the terminal tendril are replaced by a leaflet (Fig 1). The mutant was used to produce an isogenic line AIR. Despite resemblance of our mutant to *uni*^{tac} plants, F_1 plants from the cross with the line homozygous for *uni*^{tac} had wild-type phenotype, and the phenotype segregation pattern in F_2 suggested the absence of tight linkage between *uni* and *adt*. The cross of the line AIR (*i, R, Gp, u, Wb, K, S, D*^{w}, *Pl, m, St*) with the tester line WL1518 (*I, r, gp, U*st, *wb, k, s, d, pl, M, st*) gave evidence for a linkage with the locus *M* (Table 1). The relatively weak linkage to *M* and lack of linkage to *St* suggests that *adt* is located near the upper tip of LG III, although this conclusion should be considered as preliminary.

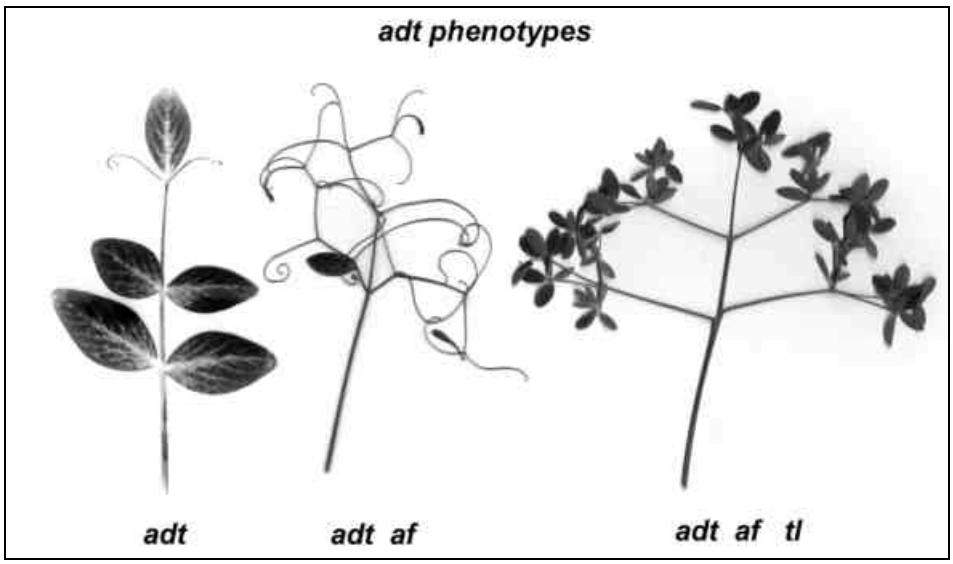

Fig. 1. Leaf phenotypes in adt *mutation in different genetic backgrounds (wild type, af and af tl*^{w}*)*

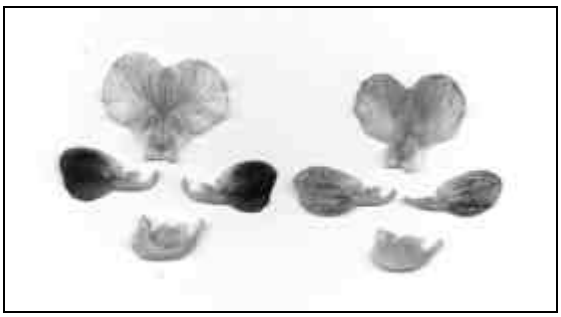

Fig. 2. Dissected flowers of the stock SG plant, with the wild-type allele Adt *(left), and an* adt *mutant (right)*

Table 1. Joint segregation data for the loci *Adt, M* and *St* at the linkage group III obtained in F_2 of the cross AIR x WL1518.

locus A	locus B	A B	A b	a B	a b	N	Rec. fract.	St. error	J. seg. Chi-sq.
Adt	***M***	**153**	**36**	**31**	**27**	**247**	**32.8**	**3.8**	**17.7**[1]
Adt	***St***	**146**	**46**	**44**	**16**	**252**	**52.0**	**4.6**	**0.2**
M	***St***	**134**	**50**	**51**	**12**	**247**	**43.5**	**5.1**	**1.6**

[1] **p<0.0001**

Like *uni*^{tac}, *adt* manifests some antagonism with *afila*. The leaves of triple homozygotes *adt/adt af/af tl/tl* found among F_2 pants, after crossing AIR with the line homozygous for *a*, *af*, and *tl*, are not as strongly ramified as those of *af tl*^{w}. Rather the phenotype is more similar to that of *uni*^{tac} *af tl*^{w} (Fig 1). We cannot exclude that *Adt* may be one of the *X*-factors with *Uni*-like function postulated by Hofer and Ellis (2).

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2. Hofer, J, Ellis, T. J. M. 1998. Trends Plant Sci. 3: 439-444.
3. Sharma, B. 1972. Pisum Newslett. 4: 50.