

5. System responsible for mutations at a_1^{m-2}

Although the system responsible for mutations at a_1^{m-2} , another mutable condition that arose at A_1 in the Cold Spring Harbor cultures, is less well understood than that associated with Dt, Mp, Ds, Ac, or Spm, its mode of action appears to differ from these other better known systems in one striking way. Present knowledge suggests the following interpretation. An independently located factor, subject to loss or to change in location in somatic cells, is responsible for maintaining one particular type of expression of anthocyanin pigment formation at a_1^{m-2} . Following removal of this factor, either through a somatically occurring event or by means of meiotic segregations, a mutational change occurs at the locus of a_1^{m-2} which results in a stabilized expression of this locus in subsequent cell and plant generations. The types of mutation-producing changes that occur fall into two distinct classes. One class contains mutants expressing different levels of anthocyanin pigment formation and these range from those giving nearly none to those that produce intense coloration in the aleurone layer of the kernel. All of the mutants in this class produce intense pigmentation in the plant but this is confined to certain of its tissues. The mutants in the second class give an apparent full A_1 type of expression in both the aleurone layer of the kernel and in the plant tissues.

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