

MUT-1589 act1 mt+

Cat. No. ALS-01901

Lot. No. (See product label)

Subcategory

Mutants

Description

From a cross of MUT-1036 pf18 mt+ to a strain that eventually became MUT-1712 act1 ac12 mt-. This strain has the wild type alleles at the PF18 and AC12 loci. The act1 mutation confers resistance to 5-20 micrograms/mL cycloheximide (trade name Actidione). Some preliminary testing may be required to establish a concentration of the antibiotic that kills wild type cells but permits growth of the mutant. At the correct concentration, however, this mutant is easy to score and makes a good genetic marker. This locus is mapped to linkage group II, near AC12. Another act mutant under investigation is mapped to linkage group VI. Assignment of these two mutations to II and VI respectively was confirmed by crosses, and the loci were therefore designated ACT1 and ACT2. The act1 allele is dominant in diploids, and that cytoplasmic ribosomes isolated from act1 strains are resistant to cycloheximide in vitro. Resistance was localized to the large subunit of the cytoplasmic ribosome, but no protein alteration could be detected on two-dimensional gel electrophoresis. The mutant gene has not been cloned and sequenced yet. However, a candidate gene is RPL27a, which maps to approximately the same location as ACT1 on chromosome 2. (Note that the primary gene encoding actin has also been called ACT1. This mutation has nothing to do with that gene.)

Species

Chlamydomonas

Locus

ACT1

Chromosome

2

Phenotype

Antibiotic resistant (cycloheximide)

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