

Name: *yellow flesh (r)*

Accessions: OC3

Gene ID: Solyc03g031860

Map position: chromosome 3 (short arm).

Gene function: chromoplast-specific phytoene synthase (PSY1)

Gene effect: plants with the mutated allele present a yellow color of ripe fruit, probably due to the poor carotenoid content and the prevalence of the yellow flavonoid (rutin) of the fruit skin.

Phenotypes: yellow color of ripe fruit; associated with paler corolla color in plants harboring the strong allele

Description of accessions available: MT-*r* is a BC6Fn introgressed from a mutation discovered in cv Santa Clara.

Comments: The green-fruited wild species (*S. pennellii*, *S. chilense*, *S. peruvianum*, *S. habrochaitis*, *S. chmielewskii* and *S. neorickii*) also have the allele *r*, which is under epistatic interaction with other alleles that causes the green fruit color at maturity (except for *S. chmielewskii*, which already has yellow fruits). When crossing these species with cultivated tomato, some lines with yellow fruits will appear, besides some with orange fruits (due to the *B* and *Del* alleles also present in the parental green-fruited wild species). The combination of *r* and *y* alleles will produce the “white tomatoes” varieties. The *r* allele cloned in 1993 was probably originated by an insertion of the *Rider* retrotransposon.

Figures:



MT-*r* (left) showing paler corolla color



MT-*r* full ripe fruits.

Bibliography

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