Name: sitiens (sit)

Accessions: H6 (LA4485)

Gene ID:

Map position: chromosome 1 (short arm)

Gene function: ABA-aldehyde oxidase

Gene effect: Plants with the mutated allele are deficient in abscisic acid (ABA).

**Phenotypes**: MT-*sit* plants are smaller and tend to wilt in hot conditions even though well watered. The leaves that over wilt will became necrotic. Seeds tend to germinate inside the fully ripe fruits (viviparous germination).

**Comments**: Seeds need to be saved in fruits not fully ripe to prevent viviparous germination. It is recommend not allowing seeds to ferment more than 6 h.

**Description of accessions available**: MT-*sit* is a BC6Fn introgressed from LA0574 (cv. Rheinlands Ruhm)



## Figure

MT- *sit* (left) appears very weak with very short leaves down-curled and necrotic (due to overwilting).

## Bibliography

Asselbergh B, Curvers K, Franca SC, Audenaert K, Vuylsteke M. Van Breusegem F, Hofte M (2007) Resistance to *Botrytis cinerea* in *sitiens*, an abscisic acid-deficient tomato mutant, involves timely production of hydrogen peroxide and cell wall modifications in the epidermis. Plant physiology 144:1863-77

Carvalho RF, Quecini V, Peres LEP (2010) Hormonal modulation of photomorphogenesis-controlled anthocyanin accumulation in tomato (*Solanum lycopersicum* L. cv Micro-Tom) hypocotyls: Physiological and genetic studies. Plant Science, 178:258-264.

Carvalho RF, Campos ML, Pino LE, Lombardi-Crestana SL, Zsogon A, Lima JE, Benedito VA, Peres LEP (2011) Convergence of developmental mutants into a single tomato model system: Micro-Tom as an effective toolkit for plant development research. Plant Methods, 7:18.

Groot SPC, Karssen CM (1992) Dormancy and germination of abscisic acid-deficient tomato seeds: studies with the *sitiens* mutant. Plant Physiology 99:952-958.

Harrison E, Burbidge A, Okyere P, Thompson J, Taylor IB (2011) Identification of the tomato ABA-deficient mutant *sitiens* as a member of the ABA-aldehyde oxidase gene family using genetic and genomic analysis. Plant Growth Regulation 64:301–309

Holbrook NM, Shashidhar VR, James RA, Munns R (2002) Stomatal control in tomato with ABA-deficient roots: response of grafted plants to soil drying. Journal of Experimental Botany 53:1503-1514.

Taylor IB, Linforth RST, Al-Naieb RJ, Bowman WR, Marples BA (1988) The wilty tomato mutants *flacca* and *sitiens* are imparied in the oxidation of ABA-aldeyde to ABA. Plant Cell Environment 11:739-745.