

**Name:** *Regeneration1 (Rg1)*

**Accessions:** Br1

**Gene ID:**

**Map position:** chromosome 3 (short arm)

**Gene function:**

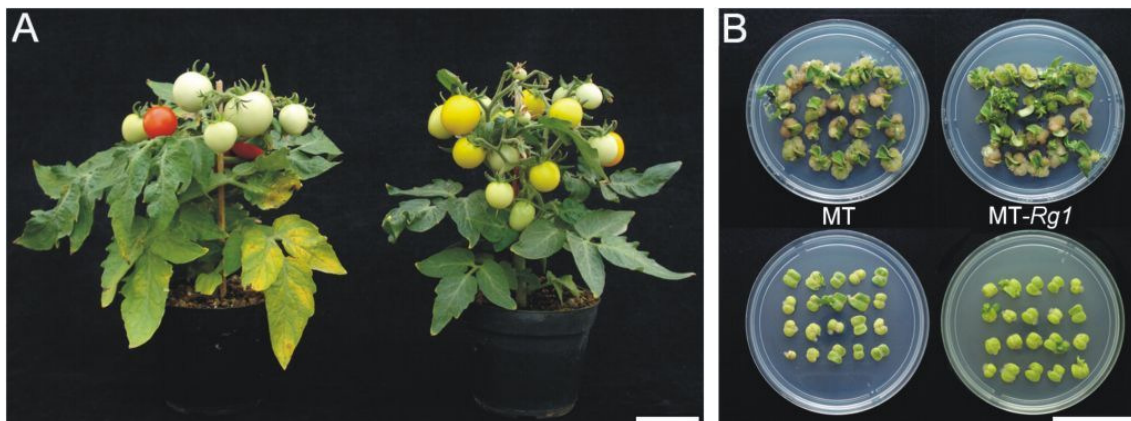
**Gene effect:** Controls the phase of acquisition of competence for cell differentiation, which determines the capacity for both shoot and root formation *in vitro* from different explants.

**Phenotypes:** *MT-Rg1* presents high *in vitro* regeneration, and excessively shoot branching. 10% of *MT-Rg1* seedlings present bifurcate or tri cotyledons.

**Comments:**

**Description of accessions available:** *MT-Rg1* is a BC6Fn introgressed from LA4136.

**Figures:**



*MT-Rg1* (right) showing excessively branching (A). The yellow fruits are due to the presence of *yellow flesh (r)* allele linked to *Rg1*. (B) high *in vitro* shoot regeneration from cotyledonary explants in *Rg1*. The plates in the bottom contain kanamycin for transgenic shoot selection upon infection with *Agrobacterium*.

## Bibliography

Boiten H, Azmi A, Dillen W, De Schepper S, Debergh P, Gerats T, Van Onckelen H, Prinsen H (2004) The *Rg-1* encoded regeneration capacity of tomato is not related to an altered cytokinin homeostasis. *New Phytologist* 161:761-771.

Koornneef M, Bade J, Hanhart C, Horsman K, Schel J, Soppe W, Verkerk R, Zabel P (1993) Characterization and mapping of a gene controlling shoot regeneration in tomato. *Plant Journal* 3:131-141.

Lima JE, Benedito VA, Figueira A, Peres LE (2009) Callus, shoot and hairy root formation in vitro as affected by the sensitivity to auxin and ethylene in tomato mutants. *Plant Cell Reports* 28:1169-77.

Lima JE, Carvalho RF, Tulmann Neto A, Figueira A, Peres LEP (2004) Micro-MsK Micro-MsK: a tomato genotype with miniature size, short life cycle, and improved in vitro shoot regeneration. *Plant Science* 167:753-757.

Pino LE, Lombardi-Crestana S, Azevedo MS, Farinha TB, Borgo L, Quecini V, Figueira A, Peres LEP (2010) The *Rg1* allele as a valuable tool for genetic transformation of the tomato Micro-Tom model system. *Plant Methods* 6:23.