SQUAMOSA PROMOTER BINDING PROTEIN-LIKE (SPL)

miR156 targeted genes

SPLs size range

SPLs roles

SPLs and flowering

miR156

SPL9

SPL10

ADULT LEAF TRAITS

Floral Transition & Floral Meristem Identity

COPPER TOLERANCE

FLOWERING TIME

FLOWERING TIME

TOXIN SENSITIVITY

PLASTOCHRON LENGTH

SPOROGENESIS

Non-miR156 targeted genes

0.1

Adapted from Xing et al., 2010

Adapted from Poethig, 2009

Adapted from Preston and Hileman, 2013
**MIR156 CONTROLS PHASE TRANSITIONS**

- **Juvenile to Adult Transition**
  - Abaxial trichomes
  - Shorter petiole
  - Leaf shape changes
  - Competence to flower

- **Floral Transition**

**Wild type**

**miR156 overexpressor**

**miR156-resistant SPL3 overexpressor**

**miR156 REPRESSIONS ADULT LEAF TRAITS**

Adapted from Wu and Poethig, 2006.

**miR156 OVEREXPRESSION DELAYS FLOWERING**

Adapted from Yu et al., 2013; Yang et al., 2011; Yang et al., 2013.

**SUGARS REGULATE MIR156 EXPRESSION**

- **Sucrose content**
- **miR156 expression level**

**WORKING MODEL**

- SUGARS FROM PHOTOSYNTHESIS
- LONG DISTANCE TRANSPORT THROUGH PHLOEM
- INHIBITION OF MIR156

**Old leaves**

**Young leaves**

**ADULT TRAITS**

Results from Yu et al., 2013; Yang et al., 2011; Yang et al., 2013.

WWW.FLOR-ID.ORG
miRNA/antisense miRNA* duplex

RISC (RNA-induced silencing complex)
mRNA clivage

Primary microRNA · pri-miRNA ·
D/SmD3-body

RNA POLYMERASE II

Cap-Binding Complex

Precursor microRNA · pre-miRNA ·

miRNA/antisense miRNA* duplex

Degradation of antisense microRNA

HSP90

SQN

ARGONAUTE1/10

RISC (RNA-induced silencing complex)
mRNA

Adapted from Spanudakis and Jackson 2014

WWW.FLORID.FSC.ULG.AB.BE