

chr5 short arm — FALSE DECOUPLING

** ssc5.1/ssc5.2 = re-tabulated classical QTL (Lin 2014, from ref 30/31)
chaining of 5 peaks (0.82–4.65 Mb) + 3 different sugars*

SSC
(G)

ssc5.1*
(E)

glu/fru
(B)

sucrose
(A)

ssc5.2*
(E)

±2 Mb

**positional call:
decoupling
(no fw QTL within ±2 Mb)**

**functional truth:
ssc5.1 historically
yield-NEGATIVE**

0

1

2

3

4

5

6

position (Mb, SL4.0)



sugar locus



fruit-weight locus

chr11 distal — FALSE ANTAGONISM

*sugar gene (SICDPK27) and size gene (CSR) are DISTINCT, linked genes
→ positional rule conflates linkage with pleiotropy*

SSC11.1
/ SICDPK27 (B,G)

±2 Mb

fw11.3 / CSR
Solyc11g071940

**positional call:
antagonistic
(fw QTL within ±2 Mb)**

**functional truth:
SICDPK27 functionally
weight-INDEPENDENT
(Zhang 2024)**

49

50

51

52

53

54

position (Mb, SL4.0)