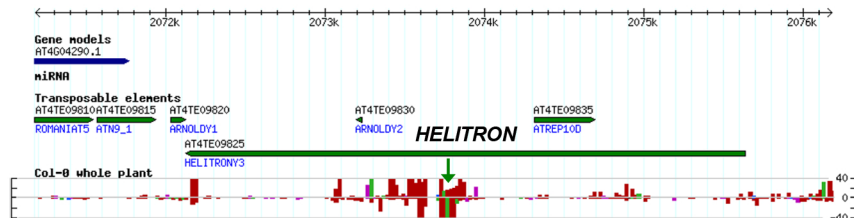


**Figure S8. Potential trans-targets of siRNAs derived from transposable elements, repeats and TASIRNA-target loci**

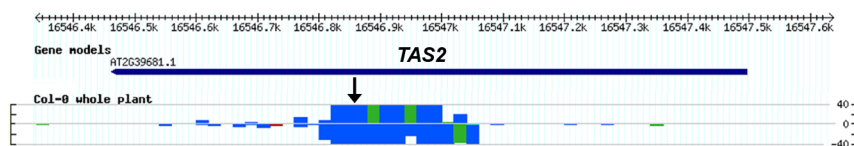
The AGO1-IP approach was combined to the use of a second, high-stringency filter for genes that are up-regulated (>1.5 fold) in common in the three VSR lines. This allowed identification and qRT-PCR-based validation of At4g22470 (encoding an extensin-like protein) as being a possible target for a 22nt-long siRNA derived from a unique *HELITRON* locus on chromosome 4 (A). This siRNA is clearly nested into a larger population of 24nt siRNAs generally thought to promote heterochromatin formation and TGS of transposable elements in *cis*, via AGO4 or AGO6. This example thus illustrates how detailed analyses might unravel additional *trans*-targeting potential for such heterochromatic loci *via* the production of AGO1-loaded siRNA variants. The same high-stringency filter allowed identification of putative novel targets for *TAS* loci, including *TAS2* (B), and notably unraveled a potential for *trans*-targeting by 21nt-long siRNAs produced from known *TAS3* target transcripts. These include members of the pentatricopeptide-repeat (PPR) protein gene family (e.g. At1g63130), of which some were previously shown to support second waves of RDR6/DCL4-dependent siRNA production following their primary cleavage by discrete *ta*-siRNA species, as in the example depicted in panel C. In this case, two distinct *PPR*-derived siRNAs show extensive complementary target sites within the ORF of the latex allergen-like protein At2g26560, which they likely contribute to regulate post-transcriptionally as assessed by qRT-PCR. Combining the AGO1-IP approach to a query of a genomic hairpin database was also successful in identifying novel transposable elements-derived IRs as sources of 20-21nt-long siRNAs with a potential to inhibit gene expression in *trans* (D-E).

A



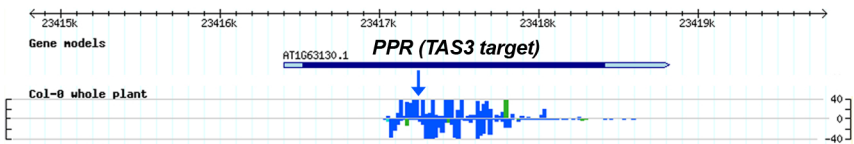
```
sRNA_AG01_SoIexa_mi2008_2_43577_hit1
5' UGGUGGUGGUGACG-UUGGUGGU
   ||||| ||||| ||||| |||||
   ACCACCACCACU-CUAACAACCA 5'
AT4G22470.1 778 799
extensin-like protein
```

B



```
sRNA_AG01_SoIexa_mi2008_2_2764_hit1
5' AUCAAGAUCCAUCUUAUCU-CU
   ||| | ||||| ||||| ||
   UAGCU-UAGGUAGAAUGAUGA 5'
AT1G67750.1 1439 1458
pectate lyase 1-like protein
```

C



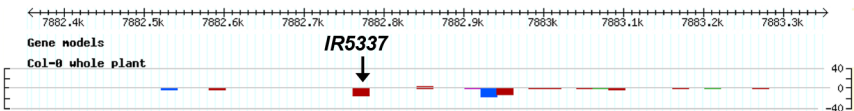
```
sRNA_AG01_SoIexa_mi2008_1_14490_hit1
5' GCAUCAUGAUAGUGUUGUAG
   CGUAGUUAUCUUC-C-ACAUC 5'
AT2G26560.1 961 979
similar to latex allergen

sRNA_AG01_SoIexa_mi2008_1_806_hit1
5' AAGAGCAUCAUGAUAG-UGUU
   UU-UCGUAGUUAUCUCCACAU 5'
AT2G26560.1 962 982
similar to latex allergen
```

E



D



```
sRNA_AG01_SoIexa_mi2008_2_13650_hit1
5' GACAUCCAGAUAGAAGCUUU
   CUGUUGGUUUUUUUUUGGAAA 5'
AT3G59210.1 913 932
unknown protein
```