# SUPPLEMENTARY INFORMATION

## Functional analysis of related CrRLK1L receptor-like kinases in pollen tube reception

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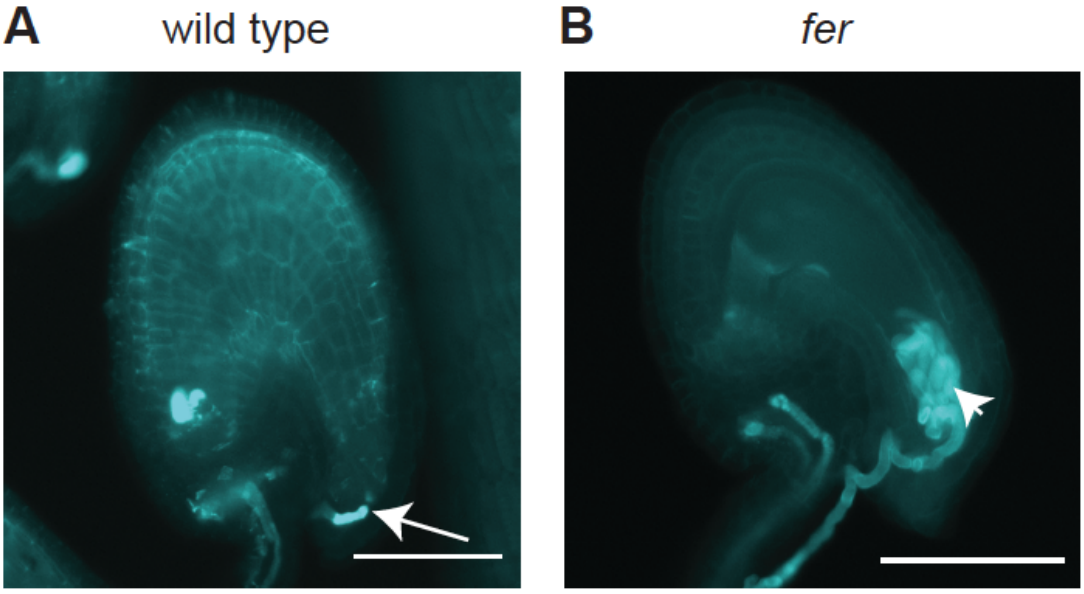
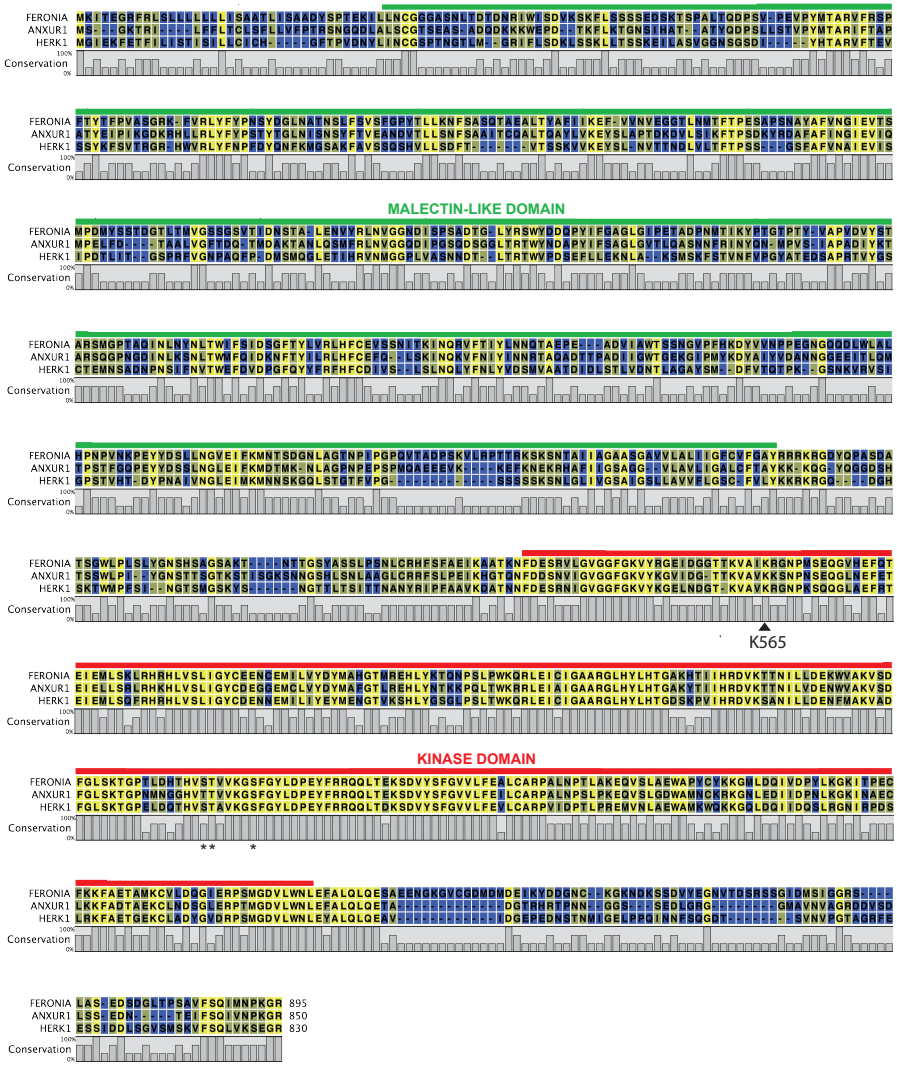
## Supplementary Figures



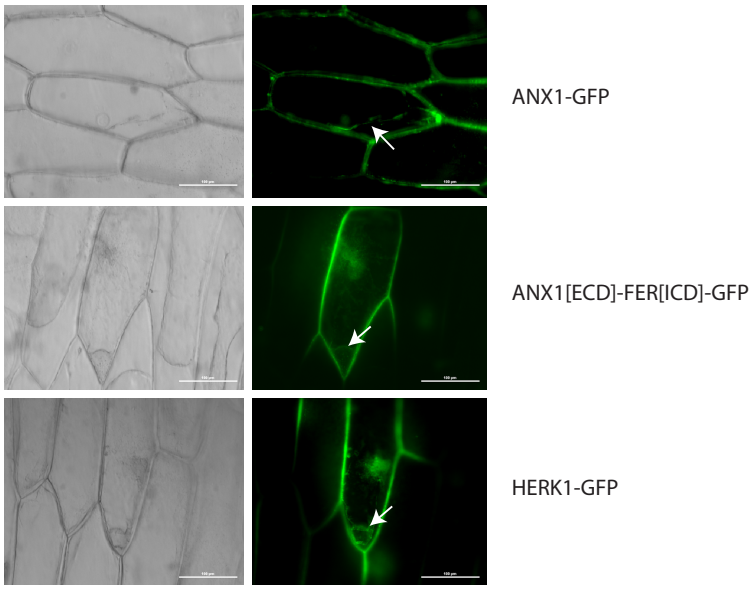

**Supplementary Figure S1. PT reception is disrupted in *fer* mutants.**

Aniline blue staining of PTs in wild-type (A) and *fer-1* (B) ovules. Arrow indicates normal PT reception and arrowhead indicates PT overgrowth. Staining was performed according to [1].



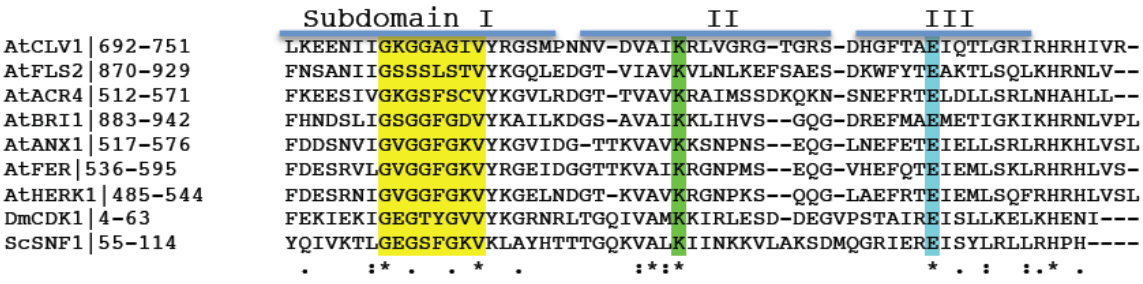

**Supplementary Figure S2. Protein alignment of FER, ANX1 and HERK1.**

The level of conservation between proteins is indicated by heat-map coloring (blue: low conservation; yellow: high conservation). The malectin-like domain (green) and the kinase domain (red) are indicated. The critical lysine for ATP binding in the kinase domain is marked by an arrowhead, and the S and T residues in the activation loop are indicated by asterisks.



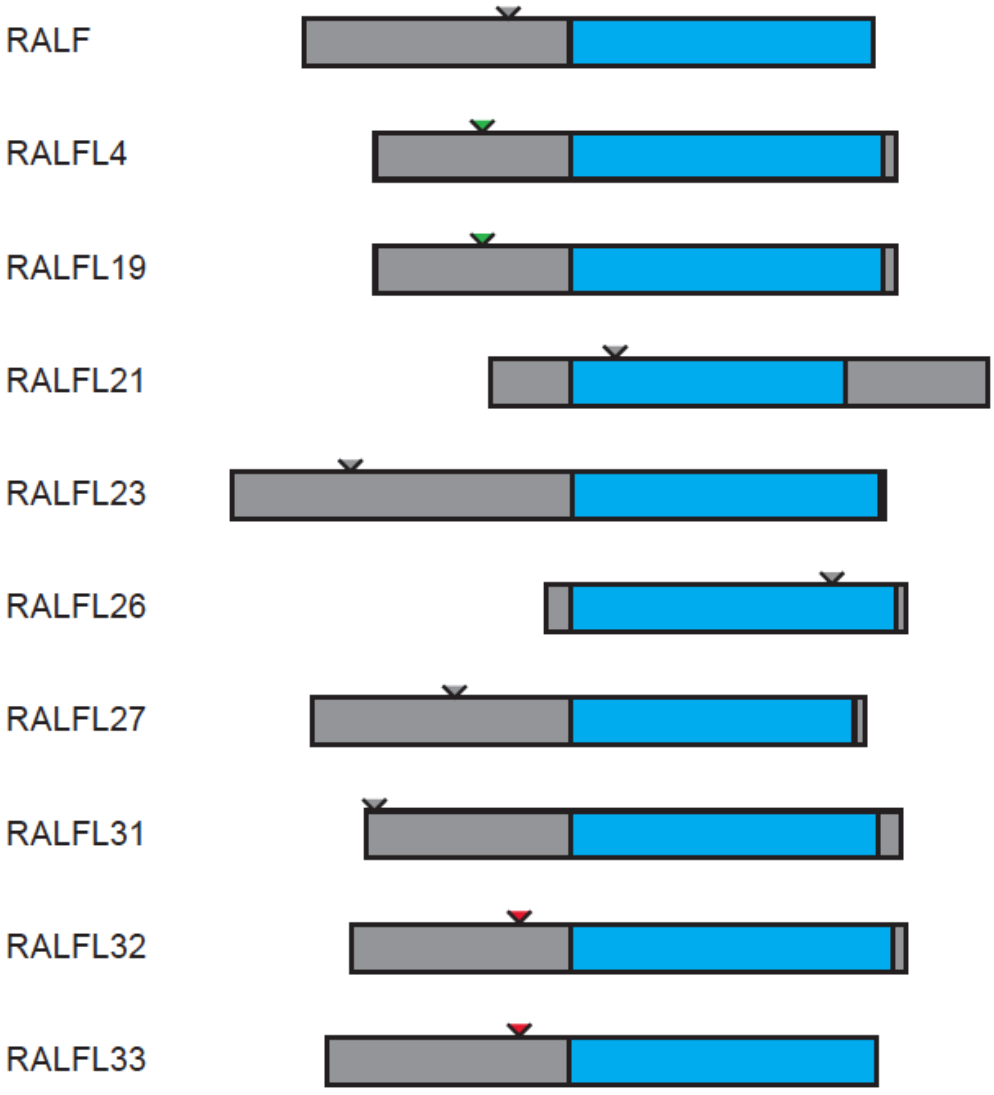

**Supplementary Figure S3. Membrane localization of GFP fusion proteins in onion epidermal cells.**

Left panels, DIC images of onion epidermal cells plasmolyzed in 30% sucrose. Right panels, transient GFP fusion protein expression. Arrows indicate GFP signal in plasma membrane that has retracted from the cell wall upon plasmolysis. Transient onion infections were done with *Agrobacterium tumafaciens* strains carrying the GFP constructs described in Materials and Methods according to the protocol described in [2].




**Supplementary Figure S4. FER, HERK1, and ANX1 have typical kinase domains.**

Amino acid alignment of the first 60 amino acids of kinase domains from *Arabidopsis* RLKs, and *Drosophila* CDK1, and yeast SNF1 kinases. Subdomains are defined based on [3]. The subdomain II critical K of the highly conserved ATP-binding site is highlighted in green, the nearly conserved glycine loop in subdomain I of kinases is shown in yellow, and the conserved E in subdomain II, which forms a salt bridge with the critical K [3], is highlighted in blue. The K565 residue was changed to R, A, and E in FER and all three changes complemented the *fer* phenotype (Fig 4B). A K911E change in BRI1 abolished kinase activity and resulted in a dwarf phenotype [4] and K560L, M, and W changes in ACR4 all led to loss of kinase activity [5-7]. Amino acid sequences and locations of predicted kinase domains were downloaded from the Universal Protein Resource (uniProt) database (CLV1, Q9SYQ8; FLS2, Q9FL28; ACR4, Q9LX29; BRI1, O22476; ANX1, Q9SR05; FER, Q9SCZ4; HERK1, Q9LX66; CDK1, P23572; SNF1, P06782).




**Supplementary Figure S5. Potential glycosylation sites in RALF and RALF-like peptides.**

RALF and RALFL peptides were analyzed for potential glycosylation sites with the NetNGlyc 1.0 Server (http://www.cbs.dtu.dk/services/NetNGlyc/). The 10 peptides with predicted glycosylation sites are shown with the RALF domain (predicted by PFAM analysis) in blue. Conserved glycosylation sites are red and green, while non-conserved sites are in grey. Peptides shown are before potential processing by a protease, which may remove some of the putative glycosylation sites. RALF and RALFL23 were shown to be processed by a Site-1 protease (S1P) [8,9]. Pollen expressed RALFL4 and RALFL26 do not have the motif for S1P recognition, but might be processed by other proteases.

# Supplementary Tables

### Supplementary Table S1: Seed count data from domain swap complementation experiment (see also Figure 3)

| Construct | Plant number | genotype | unfertilized ovules | fertilized ovules | % unfertilized |
|---|---|---|---|---|---|
| L*er* untransformed control | Ler-1 | *FER/FER* | 11 | 355 | 3.0 |
| | Ler-2 | *FER/FER* | 13 | 338 | 3.7 |
| | Ler-3 | *FER/FER* | 4 | 357 | 1.1 |
| | Ler-4 | *FER/FER* | 4 | 363 | 1.1 |
| | Ler-5 | *FER/FER* | 5 | 469 | 1.1 |
| | Ler-6 | *FER/FER* | 21 | 442 | 4.5 |
| | Ler-7 | *FER/FER* | 7 | 457 | 1.5 |
| *fer-1/FER* untransformed control | SAK543-1 | *fer-1/FER* | 171 | 234 | 42.2 |
| | SAK543-2 | *fer-1/FER* | 135 | 221 | 37.9 |
| | SAK543-3 | *fer-1/FER* | 169 | 203 | 45.4 |
| | SAK543-4 | *fer-1/FER* | 176 | 224 | 44.0 |
| | SAK543-5 | *fer-1/FER* | 178 | 207 | 46.2 |
| | SAK543-6 | *fer-1/FER* | 187 | 234 | 44.4 |
| | SAK543-7 | *fer-1/FER* | 192 | 225 | 46.0 |
| | SAK543-8 | *fer-1/FER* | 147 | 208 | 41.4 |
| *fer-1/fer-1* untransformed control | SAK534-1 | *fer-1/fer-1* | 267 | 53 | 83.4 |
| | SAK534-2 | *fer-1/fer-1* | 262 | 50 | 84.0 |
| | SAK534-3 | *fer-1/fer-1* | 200 | 41 | 83.0 |
| | SAK534-4 | *fer-1/fer-1* | 203 | 50 | 80.2 |
| *pFER::FER-GFP/- (complements)* | SAK836-31 | *fer-1/FER* | 66 | 220 | 23.1 |
| | SAK836-30 | *fer-1/FER* | 75 | 241 | 23.7 |
| | SAK836-35 | *fer-1/FER* | 62 | 231 | 21.2 |
| | SAK836-42 | *fer-1/FER* | 66 | 243 | 21.3 |
| | SAK836-44 | *fer-1/FER* | 69 | 211 | 24.6 |
| | SAK836-39 | *fer-1/fer-1* | 101 | 112 | 47.4 |
| | SAK836-40 | *fer-1/fer-1* | 72 | 100 | 41.9 |
| | SAK836-45 | *fer-1/fer-1* | 103 | 135 | 43.3 |
| *pFER::ANX1-GFP/-* | SAK540-2 | *FER/FER* | 8 | 407 | 1.9 |

| | | | | | |
|---|---|---|---|---|---|
| *(does not complement)* | SAK540-3 | *FER/FER* | 11 | 281 | 3.8 |
| | SAK540-7 | *FER/FER* | 19 | 319 | 5.6 |
| | SAK540-10 | *FER/FER* | 12 | 422 | 2.8 |
| | SAK540-11 | *FER/FER* | 15 | 425 | 3.4 |
| | SAK540-12 | *FER/FER* | 16 | 342 | 4.5 |
| | SAK540-13 | *FER/FER* | 22 | 382 | 5.4 |
| | SAK540-19 | *FER/FER* | 25 | 382 | 6.1 |
| | SAK540-24 | *FER/FER* | 20 | 312 | 6.0 |
| | SAK540-26 | *FER/FER* | 12 | 375 | 3.1 |
| | SAK540-30 | *FER/FER* | 14 | 407 | 3.3 |
| | SAK540-1 | *fer-1/FER* | 141 | 210 | 40.2 |
| | SAK540-8 | *fer-1/FER* | 148 | 169 | 46.7 |
| | SAK540-15 | *fer-1/FER* | 159 | 226 | 41.3 |
| | SAK540-16 | *fer-1/FER* | 152 | 220 | 40.9 |
| | SAK540-20 | *fer-1/FER* | 152 | 206 | 42.5 |
| | SAK540-23 | *fer-1/FER* | 171 | 220 | 43.7 |
| | SAK540-25 | *fer-1/FER* | 170 | 238 | 41.7 |
| | SAK540-28 | *fer-1/FER* | 162 | 235 | 40.8 |
| | | | | | |
| *pFER::ANX1[ECD]-FER[ICD]-GFP/-* *(does not complement)* | SAK537-1 | *FER/FER* | 11 | 347 | 3.1 |
| | SAK537-3 | *FER/FER* | 10 | 373 | 2.6 |
| | SAK537-4 | *FER/FER* | 21 | 337 | 5.9 |
| | SAK537-5 | *FER/FER* | 21 | 331 | 6.0 |
| | SAK537-8 | *FER/FER* | 12 | 388 | 3.0 |
| | SAK537-9 | *FER/FER* | 21 | 388 | 5.1 |
| | SAK537-10 | *FER/FER* | 24 | 408 | 5.6 |
| | SAK537-2 | *fer-1/FER* | 94 | 121 | 43.7 |
| | SAK537-6 | *fer-1/FER* | 184 | 240 | 43.4 |
| | SAK537-7 | *fer-1/FER* | 175 | 200 | 46.7 |
| | SAK537-26 | *fer-1/FER* | 113 | 161 | 41.2 |
| | SAK537-27 | *fer-1/FER* | 122 | 165 | 42.5 |
| | SAK537-30 | *fer-1/FER* | 98 | 132 | 42.6 |
| | SAK537-38 | *fer-1/FER* | 79 | 126 | 38.5 |
| | | | | | |
| *pFER::FER[ECD]-ANX1[ICD]-GFP/-* *(complements)* | SAK538-1 | *FER/FER* | 35 | 307 | 10.2 |
| | SAK538-7 | *FER/FER* | 22 | 386 | 5.4 |
| | SAK538-12 | *FER/FER* | 11 | 368 | 2.9 |
| | SAK538-18 | *FER/FER* | 15 | 408 | 3.5 |
| | SAK538-19 | *FER/FER* | 22 | 401 | 5.2 |
| | SAK538-20 | *FER/FER* | 12 | 420 | 2.8 |

| | | | | | |
|---|---|---|---|---|---|
| | SAK538-23 | *FER/FER* | 18 | 436 | 4.0 |
| | SAK538-2 | *fer-1/FER* | 89 | 317 | 21.9 |
| | SAK538-3 | *fer-1/FER* | 101 | 257 | 28.2 |
| | SAK538-13 | *fer-1/FER* | 103 | 332 | 23.7 |
| | SAK538-24 | *fer-1/FER* | 111 | 301 | 26.9 |
| | SAK538-27 | *fer-1/FER* | 95 | 263 | 26.5 |
| | SAK538-4 | *fer-1/fer-1* | 172 | 231 | 42.7 |
| | SAK538-8 | *fer-1/fer-1* | 151 | 181 | 45.5 |
| | SAK538-17 | *fer-1/fer-1* | 153 | 224 | 40.6 |
| | | | | | |
| *pFER::HERK1-GFP/-*<br>*(does not complement)* | SAK541-1 | *FER/FER* | 19 | 324 | 5.5 |
| | SAK541-3 | *FER/FER* | 16 | 388 | 4.0 |
| | SAK541-4 | *FER/FER* | 16 | 395 | 3.9 |
| | SAK541-9 | *FER/FER* | 19 | 334 | 5.4 |
| | SAK541-13 | *FER/FER* | 15 | 304 | 4.7 |
| | SAK541-24 | *FER/FER* | 16 | 376 | 4.1 |
| | SAK541-26 | *FER/FER* | 19 | 389 | 4.7 |
| | SAK541-6 | *fer-1/FER* | 155 | 253 | 38.0 |
| | SAK541-7 | *fer-1/FER* | 166 | 224 | 42.6 |
| | SAK541-10 | *fer-1/FER* | 153 | 212 | 41.9 |
| | SAK541-16 | *fer-1/FER* | 180 | 220 | 45.0 |
| | SAK541-23 | *fer-1/FER* | 152 | 228 | 40.0 |
| | SAK541-25 | *fer-1/FER* | 165 | 209 | 44.1 |
| | | | | | |
| *pFER::FER[ECD]-*<br>*HERK1[ICD]-GFP/-*<br>*(complements)* | SAK539-3 | *FER/FER* | 14 | 416 | 3.3 |
| | SAK539-5 | *FER/FER* | 34 | 392 | 8.0 |
| | SAK539-7 | *FER/FER* | 25 | 386 | 6.1 |
| | SAK539-10 | *FER/FER* | 66 | 345 | 16.1 |
| | SAK539-11 | *FER/FER* | 20 | 413 | 4.6 |
| | SAK539-12 | *FER/FER* | 33 | 364 | 8.3 |
| | SAK539-15 | *FER/FER* | 23 | 396 | 5.5 |
| | SAK539-16 | *FER/FER* | 15 | 420 | 3.4 |
| | SAK539-2 | *fer-1/FER* | 94 | 252 | 27.2 |
| | SAK539-6 | *fer-1/FER* | 83 | 272 | 23.4 |
| | SAK539-9 | *fer-1/FER* | 91 | 270 | 25.2 |
| | SAK539-27 | *fer-1/FER* | 63 | 277 | 18.5 |
| | SAK539-28 | *fer-1/FER* | 85 | 171 | 33.2 |
| | SAK539-29 | *fer-1/FER* | 81 | 242 | 25.1 |
| | SAK539-33 | *fer-1/FER* | 70 | 291 | 19.4 |
| | SAK539-39 | *fer-1/FER* | 69 | 182 | 27.5 |
| | SAK539-40 | *fer-1/FER* | 38 | 205 | 15.6 |

| | | | | | |
|---|---|---|---|---|---|
| | SAK539-44 | *fer-1/FER* | 59 | 146 | 28.8 |
| | SAK539-45 | *fer-1/FER* | 48 | 166 | 22.4 |
| | SAK539-46 | *fer-1/FER* | 125 | 373 | 25.1 |
| | SAK539-8 | *fer-1/fer-1* | 143 | 178 | 44.5 |
| | SAK539-9 | *fer-1/fer-1* | 160 | 157 | 50.5 |
| | SAK539-14 | *fer-1/fer-1* | 143 | 147 | 49.3 |
| | SAK539-19 | *fer-1/fer-1* | 127 | 196 | 39.3 |
| | SAK539-21 | *fer-1/fer-1* | 154 | 180 | 46.1 |
| | | | | | |
| *pFER::FERΔICD-GFP/-* | SAK542-3 | *FER/FER* | 21 | 349 | 5.7 |
| *(does not complement)* | SAK542-4 | *FER/FER* | 28 | 319 | 8.1 |
| | SAK542-6 | *FER/FER* | 6 | 271 | 2.2 |
| | SAK542-7 | *FER/FER* | 11 | 271 | 3.9 |
| | SAK542-9 | *FER/FER* | 5 | 270 | 1.8 |
| | SAK542-1 | *fer-1/FER* | 151 | 222 | 40.5 |
| | SAK542-2 | *fer-1/FER* | 172 | 217 | 44.2 |
| | SAK542-3 | *fer-1/FER* | 133 | 147 | 47.5 |
| | SAK542-4 | *fer-1/FER* | 145 | 181 | 44.5 |
| | SAK542-5 | *fer-1/FER* | 175 | 134 | 56.6 |
| | SAK542-7 | *fer-1/FER* | 196 | 217 | 47.5 |
| | SAK542-10 | *fer-1/FER* | 91 | 158 | 36.5 |
| | SAK542-11 | *fer-1/FER* | 131 | 175 | 42.8 |
| | SAK542-15 | *fer-1/FER* | 121 | 178 | 40.5 |
| | SAK542-18 | *fer-1/FER* | 75 | 72 | 51.0 |
| | SAK542-20 | *fer-1/FER* | 124 | 199 | 38.4 |
| | SAK542-21 | *fer-1/FER* | 120 | 166 | 42.0 |
| | SAK542-23 | *fer-1/FER* | 93 | 164 | 36.2 |
| | SAK542-24 | *fer-1/FER* | 99 | 173 | 36.4 |
| | | | | | |
| *pFER::FER[ECD]-BRI1[ICD]-GFP/-* | SAK837-3 | *FER/FER* | 30 | 211 | 12.4 |
| *(does not complement)* | SAK837-17 | *FER/FER* | 19 | 241 | 7.3 |
| | SAK837-13 | *FER/FER* | 17 | 238 | 6.7 |
| | SAK837-1 | *fer-1/FER* | 94 | 164 | 36.4 |
| | SAK837-4 | *fer-1/FER* | 102 | 167 | 37.9 |
| | SAK837-5 | *fer-1/FER* | 107 | 143 | 42.8 |
| | SAK837-7 | *fer-1/FER* | 111 | 143 | 43.7 |
| | SAK837-8 | *fer-1/FER* | 94 | 163 | 36.6 |
| | SAK837-9 | *fer-1/FER* | 107 | 169 | 38.8 |
| | SAK837-11 | *fer-1/FER* | 94 | 158 | 37.3 |

**Supplementary Table S2: Seed count data from FER point mutation complementation experiments (see also Figure 4).**

| Construct | line number | genotype | unfertilized ovules | fertilized ovules | % unfertilized |
|---|---|---|---|---|---|
| L*er* untransformed control | L*er*-1 | *FER/FER* | 14 | 330 | 4.1 |
| | L*er*-2 | *FER/FER* | 7 | 315 | 2.2 |
| | L*er*-3 | *FER/FER* | 15 | 322 | 4.5 |
| | | | | | |
| *fer-1/FER* untransformed control | SAK433-1 | *fer-1/FER* | 149 | 232 | 39.1 |
| | SAK433-2 | *fer-1/FER* | 157 | 221 | 41.5 |
| | SAK433-3 | *fer-1/FER* | 155 | 220 | 41.3 |
| | SAK433-4 | *fer-1/FER* | 154 | 230 | 40.1 |
| | SAK433-5 | *fer-1/FER* | 159 | 245 | 39.4 |
| | SAK433-6 | *fer-1/FER* | 151 | 256 | 37.1 |
| | SAK433-7 | *fer-1/FER* | 126 | 198 | 38.9 |
| | | | | | |
| *fer-1/fer-1* untransformed control | SAK429-1 | *fer-1/fer-1* | 141 | 33 | 81.0 |
| | SAK429-2 | *fer-1/fer-1* | 153 | 39 | 79.7 |
| | SAK429-3 | *fer-1/fer-1* | 138 | 39 | 78.0 |
| | SAK429-4 | *fer-1/fer-1* | 159 | 33 | 82.8 |
| | SAK429-5 | *fer-1/fer-1* | 168 | 39 | 81.2 |
| | | | | | |
| *pFER::FER[K-R]-GFP/- (complements)* | SAK91-3 | *FER/FER* | 14 | 336 | 4.0 |
| | SAK91-6 | *FER/FER* | 12 | 387 | 3.0 |
| | SAK91-7 | *FER/FER* | 16 | 302 | 5.0 |
| | SAK91-2 | *fer-1/FER* | 103 | 310 | 24.9 |
| | SAK91-5 | *fer-1/FER* | 84 | 338 | 19.9 |
| | SAK91-9 | *fer-1/FER* | 78 | 268 | 22.5 |
| | SAK116-2 | *fer-1/fer-1* | 91 | 130 | 41.2 |
| | SAK116-3 | *fer-1/fer-1* | 81 | 102 | 44.3 |
| | SAK118-5 | *fer-1/fer-1* | 86 | 129 | 40.0 |
| | SAK118-6 | *fer-1/fer-1* | 88 | 128 | 40.7 |
| | | | | | |
| *pFER::FER[K-A]-GFP/- (complements)* | SAK839-5 | *fer-1/FER* | 73 | 167 | 30.4 |
| | SAK839-9 | *fer-1/FER* | 75 | 214 | 26.0 |
| | SAK839-12 | *fer-1/FER* | 54 | 226 | 19.3 |
| | SAK839-15 | *fer-1/FER* | 77 | 213 | 26.6 |
| | SAK839-20 | *fer-1/FER* | 73 | 222 | 24.7 |
| | SAK839-10 | *fer-1/FER* | 64 | 228 | 21.9 |

| | | | | | |
|---|---|---|---|---|---|
| | SAK839-11 | *fer-1/fer-1* | 126 | 160 | 44.1 |
| | SAK839-27 | *fer-1/fer-1* | 100 | 156 | 39.1 |
| | | | | | |
| *pFER::FER[K-E]-GFP/-* | SAK840-6 | *fer-1/FER* | 59 | 182 | 24.5 |
| *(complements)* | SAK840-19 | *fer-1/FER* | 70 | 185 | 27.5 |
| | SAK840-23 | *fer-1/FER* | 64 | 205 | 23.8 |
| | SAK840-27 | *fer-1/FER* | 75 | 206 | 26.7 |
| | SAK840-10 | *fer-1/fer-1* | 100 | 88 | 53.2 |
| | | | | | |
| *pFER::FER[STS-AAA]-GFP/-* | SAK309-3 | *fer-1/FER* | 50 | 117 | 29.9 |
| *(complements)* | SAK309-5 | *fer-1/FER* | 50 | 168 | 22.9 |
| | SAK393-1 | *fer-1/FER* | 103 | 279 | 27.0 |
| | SAK393-2 | *fer-1/FER* | 74 | 323 | 18.6 |
| | SAK393-3 | *fer-1/FER* | 75 | 255 | 22.7 |
| | SAK393-4 | *fer-1/FER* | 74 | 239 | 23.6 |
| | | | | | |
| *pFER::FER[STS-DDD]-GFP/-* | SAK92-2 | *FER/FER* | 12 | 288 | 4.0 |
| *(does not complement)* | SAK92-6 | *FER/FER* | 5 | 190 | 2.6 |
| | SAK92-7 | *FER/FER* | 6 | 203 | 2.9 |
| | SAK92-8 | *FER/FER* | 9 | 180 | 4.8 |
| | SAK92-12 | *FER/FER* | 9 | 221 | 3.9 |
| | SAK446-2 | *fer-1/FER* | 159 | 220 | 42.0 |
| | SAK446-4 | *fer-1/FER* | 146 | 208 | 41.2 |
| | SAK446-11 | *fer-1/FER* | 151 | 190 | 44.3 |
| | SAK446-14 | *fer-1/FER* | 150 | 221 | 40.4 |
| | SAK446-15 | *fer-1/FER* | 144 | 201 | 41.7 |
| | SAK446-16 | *fer-1/FER* | 142 | 222 | 39.0 |
| | SAK446-17 | *fer-1/FER* | 164 | 224 | 42.3 |
| | SAK446-18 | *fer-1/FER* | 156 | 218 | 41.7 |
| | SAK446-20 | *fer-1/FER* | 141 | 231 | 37.9 |
| | | | | | |
| *pFER::FER[S695A]-GFP/-* | SAK305-1 | *fer-1/FER* | 38 | 118 | 24.4 |
| *(complements)* | SAK305-2 | *fer-1/FER* | 36 | 117 | 23.5 |
| | SAK305-4 | *fer-1/FER* | 43 | 127 | 25.3 |
| | | | | | |
| *pFER::FER[T696A]-GFP/-* | SAK306-3 | *fer-1/FER* | 47 | 103 | 31.3 |
| *(complements)* | SAK306-4 | *fer-1/FER* | 53 | 118 | 31.0 |
| | SAK306-5 | *fer-1/FER* | 44 | 125 | 26.0 |
| | | | | | |
| *pFER::FER[S701A]-GFP/-* | SAK308-1 | *fer-1/FER* | 44 | 168 | 20.8 |
| *(complements)* | SAK308-3 | *fer-1/FER* | 38 | 145 | 20.8 |

| | | | | | |
|---|---|---|---|---|---|
| *pFER::FER[S695A-T696A]-GFP/-* *(complements)* | SAK307-3 | *fer-1/FER* | 34 | 167 | 16.9 |
| | SAK307-4 | *fer-1/FER* | 36 | 194 | 15.7 |
| *pFER::FER[S695D]-GFP/-* *(complements)* | SAK96-1 | *fer-1/fer-1* | 74 | 81 | 47.7 |
| | SAK96-4 | *fer-1/fer-1* | 69 | 73 | 48.6 |
| | SAK96-5 | *fer-1/FER* | 56 | 164 | 25.5 |
| *pFER::FER[T696D]-GFP/-* *(complements)* | SAK123-1 | *fer-1/fer-1* | 71 | 80 | 47.0 |
| | SAK123-2 | *fer-1/fer-1* | 56 | 71 | 44.1 |
| *pFER::FER[S701D]-GFP/-* *(complements)* | SAK124-1 | *fer-1/FER* | 52 | 179 | 22.5 |
| | SAK124-7 | *fer-1/FER* | 42 | 141 | 23.0 |
| | SAK124-28 | *fer-1/fer-1* | 46 | 58 | 44.2 |
| *pFER::FER[S695D-T696D]-GFP/-* *(complements)* | SAK122-2 | *fer-1/fer-1* | 71 | 74 | 49.0 |
| | SAK122-5 | *fer-1/fer-1* | 76 | 76 | 50.0 |
| | SAK122-6 | *fer-1/fer-1* | 67 | 77 | 46.5 |

**Supplementary Table S3: Primers used to generate complementation constructs**

| Primer name | Sequence |
|---|---|
| SKpromFER-attB1 | ggggacaagtttgtacaaaaaagcaggctggtaagcttcgatttaagcg |
| promFER-R | cgatcaagagcacttctccg |
| FERIC-F | gctattattgcaggcgcagc |
| attB2FERIC-R | ggggaccactttgtacaagaaagctgggtacgtccctttggattcatgatc |
| FEREC-R | cgtattgcttttcgatttcct |
| ANX1FER-F | cggagaagtgctcttgatcgatgagcgggaaaactcggattc |
| ANX1FER-R | actggctgcgcctgcaataatagcgtgtctcttttcgttcttg |
| FERANX1-F | aggaaatcgaaaagcaatacggctttcatcattggttcggc |
| attB2ANX1-R | ggggaccactttgtacaagaaagctgggttcgtcctttgggatttacaatc |
| HERK1FER-F | cggagaagtgctcttgatcgatgggtattgaaaagtttgaaac |
| HERK1FER-R | actggctgcgcctgcaataatagcccgagattactcttactgc |
| FERHERK1-F | aggaaatcgaaaagcaatacgttgattgtaggttcagccat |
| attB2HERK1-R | ggggaccactttgtacaagaaagctgggttcttccttcagatttcaccag |
| SKFER-17FattB1 | aaaaagcaggcttcggtaagcttcgatttaagcg |
| SKFER-15RattB2 | agaaagctgggtgaccaccaacaccaagcacc |
| SKFERecdBRI-F | aggaaatcgaaaagcaatacggctggtagtgtggcgatgg |
| SKBRI1-attB2 | ggggaccactttgtacaagaaagctgggttaattttccttcaggaacttcttttatac |

**Supplementary Table S4: Primer combinations used for fusion constructs**

| Construct | Primers |
|---|---|
| ***pFER::ANX1-GFP*** | SKpromFER-attB1 |
| | promFER-R |
| | ANX1FER-F |
| | attB2ANX1-R |
| ***pFER::HERK1-GFP*** | SKpromFER-attB1 |
| | promFER-R |
| | HERK1FER-F |
| ***pFER::ANX1[ECD]-FER[ICD]-GFP*** | SKpromFER-attB1 |
| | promFER-R |
| | ANX1FER-F |
| | ANX1FER-R |
| | FERIC-F |
| | attB2FERIC-R |
| ***pFER::FER[ECD]-ANX1[ICD]-GFP*** | SKpromFER-attB1 |
| | FEREC-R |
| | FERANX1-F |
| | attB2ANX1-R |
| ***pFER::FER[ECD]-HERK1[ICD]-GFP*** | SKpromFER-attB1 |
| | FEREC-R |
| | FERHERK1-F |
| | attB2HERK1-R |
| ***pFER::FERΔICD-GFP*** | SKFER-17FattB1 |
| | SKFER-15RattB2 |
| ***pFER::FER[ECD]-BRI1[ICD]-GFP*** | SKpromFER-attB1 |
| | FEREC-R |
| | SKFERecdBRI-F |
| | SKBRI1-attB2 |

**Supplementary Table S5: Primers used for site-directed mutagenesis**

| | |
|---|---|
| SKFER-5F | tcacgaattccgggtgcttggtgttgg |
| SKFER-6R | tcacggatccacagaacatctcccattg |
| SKferS695DFor | gtagacacagttgtgaaaggaag |
| SKferS695DRev | tcacaactgtgtctacgtgtgtgtggtctagtg |
| SKferS695Afor | gtagccacagttgtgaaaggaag |
| SKferS695Arev | tcacaactgtggctacgtgtgtgtggtctagtg |
| SKferT696Dfor | gtaagcgatgttgtgaaaggaag |
| SKferT696Drev | tcacaacatcgcttacgtgtgtgtggtctagtg |
| SKferT696Afor | gtaagcgcagttgtgaaaggaag |
| SKferT696Arev | tcacaactgcgcttacgtgtgtgtggtctagtg |
| SKferSTDDfor | gtagacgatgttgtgaaaggaag |
| SKferSTDDrev | tcacaacatcgtctacgtgtgtgtggtctagtg |
| SKferSTAAfor | gtagccgcagttgtgaaaggaag |
| SKferSTAArev | tcacaactgcggctacgtgtgtgtggtctagtg |
| SKferS701Dfor | gagatttcggttatcttgacccag |
| SKferS701Drev | gataaccgaaatctcctttcacaactgtgcttac |
| SKferS701Afor | gagctttcggttatcttgacccag |
| SKferS701Arev | gataaccgaaagctcctttcacaactgtgcttac |
| SKferSTSDDDfor | gttgtgaaaggagatttcgg |
| SKferSTSDDDrev | atctcctttcacaacatcgtctacg |
| SKferSTSAAAfor | gttgtgaaaggagctttcgg |
| SKferSTSAAArev | agctcctttcacaactgcggctacg |
| SKFERKA-F | aaggtagccatcgcgagaggcaacccaatgtcc |
| SKFERKA-R | cgcgatggctacctttgtagttc |
| SKFERKE-F | aaggtagccatcgagagaggcaacccaatgtcc |
| SKFERKE-R | ctcgatggctacctttgtagttc |

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