Supplemental information

PABP/purine-rich motif as an initiation module for cap-independent translation in pattern-triggered immunity

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### Table S1. Information on UBQ10 and eight R-motif-containing gene transcripts, related to Figures 1 and S1.

| Gene name | R-motif | uORF existence | Molecular function | Source          |
|-----------|---------|----------------|--------------------|-----------------|
| ASG5      | AGAGAAGAAACAGAG | Yes          | Probable serine/threonine-protein kinase PBL21 | Xu et al., 2017 |
| ATG8E     | GACGAAAAGAAAAAG | No           | Involved in autophagy | Xu et al., 2017 |
| ERDJ3B    | AAAACAAATAGAGAG | No           | Required for the proper accumulation of EFR | Xu et al., 2017 |
| I4G1      | GCAGGAGAGAGAGAG | No           | Eukaryotic translation initiation factor | Xu et al., 2017 |
| MPK6      | AAAAAAAAAAAAAAA | No           | MAP kinase          | Xu et al., 2017 |
| PAB2      | CAAAAAAACGAAAAA | Yes          | Poly-A binding protein | Xu et al., 2017 |
| PEPKR1    | TGCCAAAAAAAGAG | Yes          | Phosphoenolpyruvate carboxylase-related kinase 1 | Xu et al., 2017 |
| ZIK3      | GCAGAAGAAAGAGAG | No           | Serine/threonine-protein kinase WNK2 | Xu et al., 2017 |
| UBQ10     | GCAGAAGAAAGAGAG | No           | Ubiquitin 10        | This study      |
| mR1          | tctagaaacagcatccgtaatatttcctacaacaagttgacacccacctcactcactctacaagatatttagcttacaaaggtaggaccaacatttgtgatctataaatcttcctactacgttatatatagagacccttcgacataacacttaactcgtttatatatttgtttacttgttttgacacatacataCACACTACTA | mR2          | tctagaaacagcatccgtaatatttcctacaacaagttgacacccacctcactcactctacaagatatttagcttacaaaggtaggaccaacatttgtgatctataaatcttcctactacgttatatatagagacccttcgacataacacttaactcgtttatatatttgtttacttgttttgacacatacataCACACTACTA | mR3          | tctagaaacagcatccgtaatatttcctacaacaagttgacacccacctcactcactctacaagatatttagcttacaaaggtaggaccaacatttgtgatctataaatcttcctactacgttatatatagagacccttcgacataacacttaactcgtttatatatttgtttacttgttttgacacatacataCACACTACTA | mR123        | tctagaaacagcatccgtaatatttcctacaacaagttgacacccacctcactcactctacaagatatttagcttacaaaggtaggaccaacatttgtgatctataaatcttcctactacgttatatatagagacccttcgacataacacttaactcgtttatatatttgtttacttgttttgacacatacataCACACTACTA |
|-------------|-------------------------------------------------|-------------|-------------------------------------------------|-------------|-------------------------------------------------|-------------|-------------------------------------------------|
| mR1         | Probe-R-motif-1: gauguacacaaaaauuuuagac         | mR2         | Probe-R-motif-2: gaugaAuGGAAGAAACAAACAGAAAA     | mR3         | Probe-R-motif-3: gaugacguguuuaauuuuuuuu          | mR123       | Probe-polyA: gaugAAAAAAAAAAAAAAAAAAAAAAAAAAAA     |
| Table S2. DNA and RNA sequences synthesized by IDT, related to Figures 2, 5 and S2. | | | | | | | |
### Table S3. PAB2-interactors identified by LC-MS/MS shown in Figure 3A, related to Figure 3.

| Gene ID       | Molecular Weight | Control | PAB2-FLAG repeat 1 | PAB2-FLAG repeat 2 | Description                                                   |
|---------------|------------------|---------|--------------------|--------------------|---------------------------------------------------------------|
| AT4G34110.1   | 69 kDa           | 74      | 75                 |                    | PAB2 | poly(A) binding protein 2                                    |
| AT1G49760.1   | 73 kDa           | 46      | 45                 |                    | PAB8 | poly(A) binding protein 8                                    |
| AT2G23350.1   | 72 kDa           | 51      | 52                 |                    | PAB4 | poly(A) binding protein 4                                    |
| AT1G55500.3   | 65 kDa           | 26      | 24                 |                    | ECT4 | evolutionarily conserved C-terminal region 4                 |
| AT3G13460.1   | 72 kDa           | 21      | 21                 |                    | ECT2 | evolutionarily conserved C-terminal region 2                 |
| AT1G48110.1   | 71 kDa           | 14      | 16                 |                    | ECT7 | evolutionarily conserved C-terminal region 7                 |
| AT1G79270.1   | 60 kDa           | 19      | 18                 |                    | ECT8 | evolutionarily conserved C-terminal region 8                 |
| AT5G61020.1   | 55 kDa           | 12      | 14                 |                    | ECT3 | evolutionarily conserved C-terminal region 3                 |
| AT1G76810.1   | 142 kDa          | 9       | 7                  |                    | EIF-2 | eukaryotic translation initiation factor 2 family protein |
| AT5G26742.2   | 81 kDa           | 11      | 10                 |                    | EMB1138 | DEAD box RNA helicase (RH3) |
| AT3G13060.2   | 69 kDa           | 3       | 6                  |                    | ECT5 | evolutionarily conserved C-terminal region 5                 |
| AT3G03950.1   | 48 kDa           | 7       | 6                  |                    | ECT1 | evolutionarily conserved C-terminal region 1                 |
| AT1G17220.1   | 110 kDa          | 10      | 8                  |                    | FUG1 | Translation initiation factor 2, small GTP-binding protein |
| AT3G60240.2   | 188 kDa          | 8       | 3                  |                    | EIF4G | eukaryotic translation initiation factor 4G                 |
| AT1G54270.1   | 47 kDa           | 1       | 3                  | 4                  | EIF4A-2                                                   |
| AT1G18080.1   | 36 kDa           | 1       | 3                  |                    | RACK1A | Transducin/WD40 repeat-like superfamily protein |
| AT5G25780.1   | 82 kDa           | 4       | 2                  |                    | EIF3B-2 | eukaryotic translation initiation factor 3B-2 |
| AT1G04170.1   | 51 kDa           | 2       | 2                  |                    | EIF2γ | eukaryotic translation initiation factor 2 gamma subunit |
| AT3G11400.1   | 33 kDa           | 1       | 3                  |                    | EIF3G1 | eukaryotic translation initiation factor 3G1 |
| AT4G11420.1   | 114 kDa          | 2       | 2                  |                    | EIF3A | eukaryotic translation initiation factor 3A |
| AT3G01540.1   | 68 kDa           | 1       | 2                  |                    | DRH1, ATDRH1 | DEAD box RNA helicase 1 |
| AT5G20920.1   | 31 kDa           | 2       | 1                  |                    | EIF2β | eukaryotic translation initiation factor 2 beta subunit |
| AT3G58510.1   | 66 kDa           | 3       | 1                  |                    | DEA(D/H)-box RNA helicase family protein |
**Cluc construct**

PA2b-Klap-F (Work with FLAG-Sal1-Cluc-R)  
PA4-Klap-F (Work with FLAG-Sal1-Cluc-R)  
MPK6-Klap-F (Work with FLAG-Sal1-Cluc-R)  
PA8b-Klap-F (Work with FLAG-Sal1-Cluc-R)  
RACK1A-Klap-F (Work with FLAG-Sal1-Cluc-R)  
RACK1B-Klap-F (Work with FLAG-Sal1-Cluc-R)  
MPK6^In-F (Work with FLAG-Sal1-Cluc-R)  
FLA2-Sal1-Cluc-R

**Nuc construct**

eIF4G-Klap-F (Work with FLAG-Sal1-Nuc-R)  
eIF3o-Klap-1-Klap-F (Work with FLAG-Sal1-Nuc-R)  
PA2b-Klap-F (Work with FLAG-Sal1-Nuc-R)  
FLA2-Sal1-Nuc-R

**pblm43GW**

amR1-amR1-P1  
amR-Dcp2-P2  
amR-Dcp2-P3  
amR-Dcp2-P4  
amR-Dcp2-P5  
atb2-amR2-P6

**Dual reporter**

R: Sal1-1x-F  
R: Sal1-2x-F

**Wheat-Germ system**

RLUC-BglII-down2  
RLUC-down1  
RLUC-Apa1-up1  
M6-Sal1-fusion-1  
TIE-2F (work with Rtbf1-Spe1-mR3-exon-R to amplify TBF1 leader sequence)  
TIE-1R (work with TIE-Sal1-1F to amplify TIE)

**Dual reporter**

R: Sal1-1x-F  
R: Sal1-2x-F

**Wheat-Germ system**

TB1-F-T (First round PCR with TBF1-T7p-F)  
TB1-F-T (Second round PCR with TBF1-T7p-F)

**pUC19**

PAB2-Sal1-F  
PAB2-Bstb1-FLAG-R  
PAB2-Sal1-HA-R  
PAB8-Rnf1-F  
PAB8-Bstb1-FLAG-R  
PAB8-Sal1-HA-R  
eIF4G-Bstb1-F  
eIF3o-Klap-1-Sal1-F  
eIF3o-Klap-1-Bstb1-F  
eIF3o-Klap-1-Sal1-HA-R  
RACK1A-Klap-F  
RACK1A-Sal1-R  
Mjkl-kan1-inf1-pecuc1  
Mjkl-pecuc1-inf2  

**Primers for qRT-PCR**

TB1-F  
TB1-R  
TB1-F  
TB1-R  
ASG-S  
ASG-R  
ATG6-EF  
ATG8-E  
ERD338-R  
ERD338-R  
I4G1-F  
I4G1-R  
MPK6-F  
MPK6-R  
PEPKR1-F  
PEPKR1-R  
PAB2-F  
PAB2-R  
ZIK3-F  
ZIK3-R  
UBD101-R  
UBD101-R  
RIP-Infer-3PCR-F  
RIP-Infer-3PCR-R  
TB1-f1PCR-R-F  
TB1-f1PCR-R-R