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Supplemental Methods

Approximate estimation of the affinity of GST-RabA and GST-RabB for GTP

Affinities of GST-RabA and GST-RabB for GTP were estimated using a filter binding assay and [γ - 32 P]-GTP, as described below.

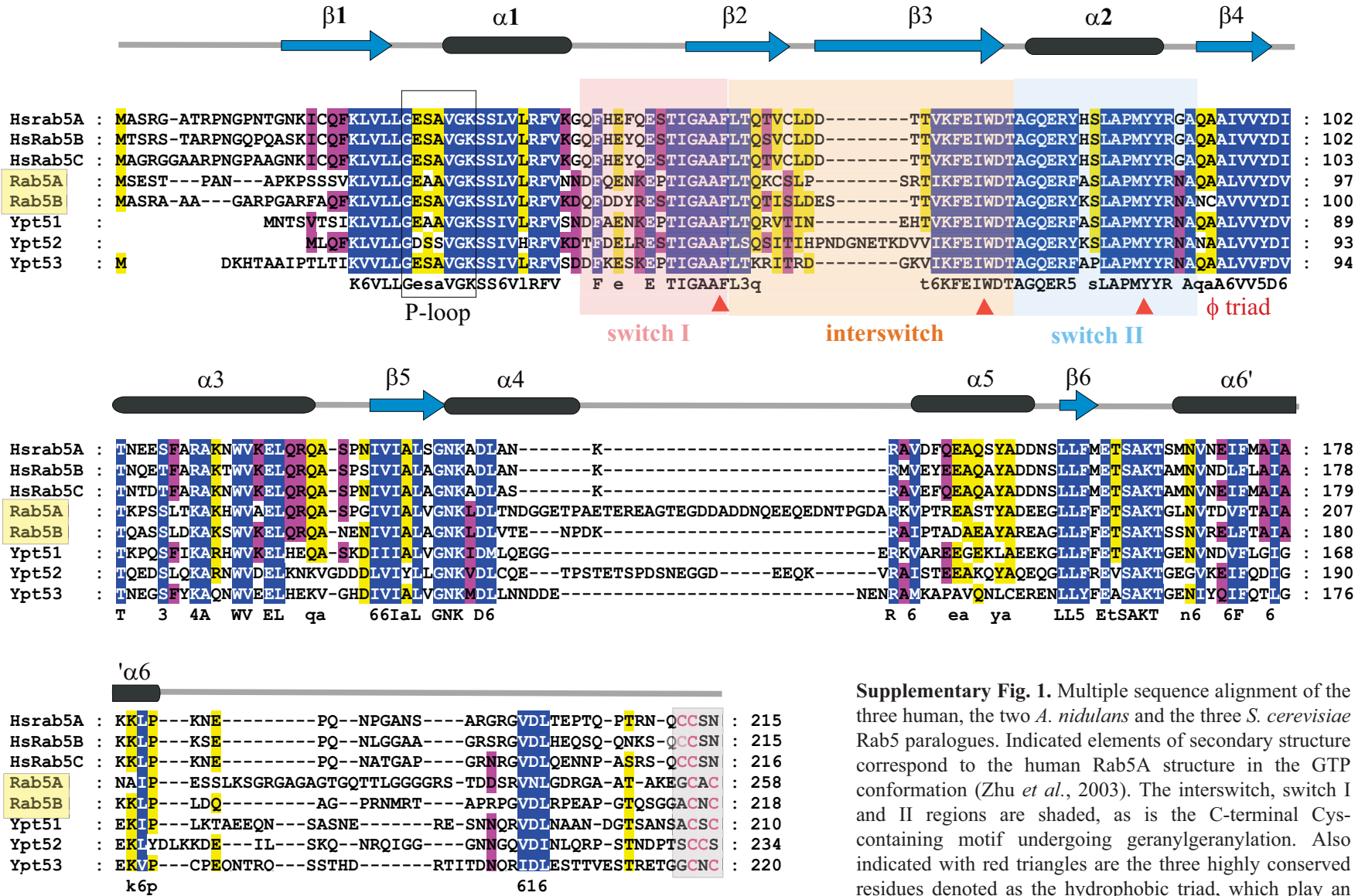
a) Protein purification. To efficiently load GST-Rabs with labeled nucleotide, it is important to ensure that the proteins are in the apo form (Burstein and Macara, 1992). To remove endogenous nucleotides bound to bacterially-expressed GST-Rab proteins, 0.2 ml of glutathione-Sepharose beads containing immobilized GST-Rab fusion proteins or GST (control) were washed, resuspended in 2 ml BB buffer lacking MgCl_2 ($-\text{Mg}^{2+}$) and containing 10 mM EDTA and incubated for 30 min at 30°C. After two additional washes with the same buffer, proteins were eluted with $-\text{Mg}^{2+}$ BB containing 25 mM glutathione. Pooled fractions containing the relevant protein (by SDS-PAGE) were passed through 2 ml Zeba Spin Desalting Columns equilibrated with $-\text{Mg}^{2+}$ BB. Protein concentrations were accurately determined using 2D-Quant kit (Amersham).

b) GTP binding assays. Binding mixtures containing different concentrations of GST-RabA, GST-RabB or GST were set up in a buffer containing 20 mM Tris-HCl pH 8, 110 mM KCl, 1 mM DTT, 0.1% Triton X-100, 10 nM EDTA and 2.5 nM [γ - 32 P]-GTP (6000 Ci/mmol) were pre-incubated for 5 min at 30°C in the absence of Mg^{2+} . After cooling in ice for 5 min, 10 mM MgCl_2 was added and the mixtures were incubated in ice for an additional 20 min to further promote nucleotide binding (Burstein and Macara, 1992; Zhang *et al.*, 2000). (Preliminary experiments showed that GTP hydrolysis does not take place under these conditions, even though Mg^{2+} is present). After this second incubation, samples were filtered through pre-wetted nitrocellulose discs (0.45 μm , MF-Millipore) that were washed with 5 ml of ice-cold BB buffer containing 0.1% Triton X-100. The amount of [γ - 32 P]-GTP that was retained with the proteins was determined using a Wallac Beta counter. For each amount of GST-Rab protein, control assays containing the corresponding amount of GST were set up and the radioactivity retained by these assays was considered as the background.

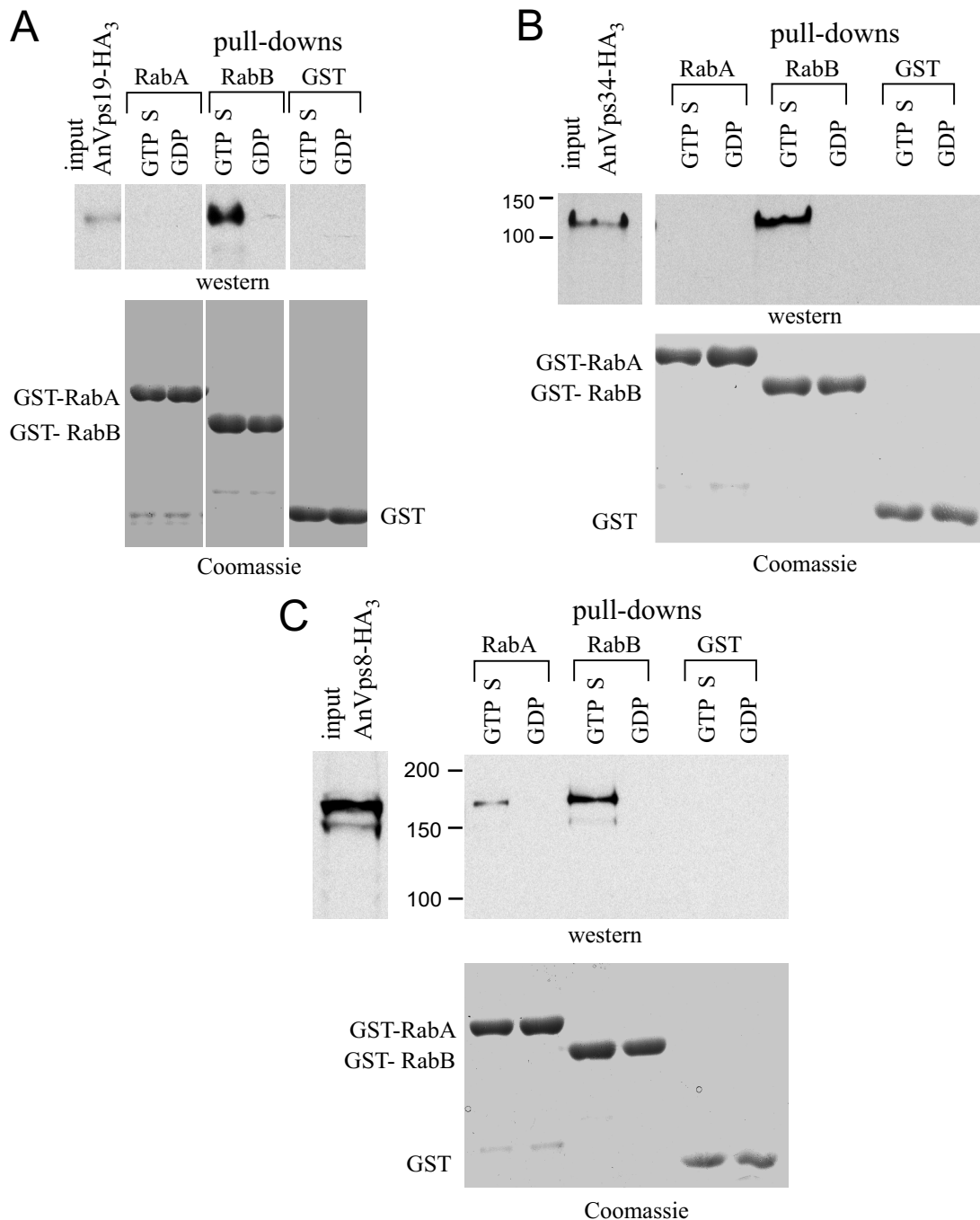
Data were obtained in triplicate and, since the concentration of protein far exceeds that of nucleotide, fitted to the equation $y = ax / (K_d + a)$ (Choo and Klug, 1993), where y corresponds to the concentration of [γ - 32 P]-GTP complexed with the protein, x corresponds to the initial concentration of GST-Rab and K_d is the apparent dissociation constant. An approximate estimation of the dissociation constant was obtained as the concentration of protein required for half maximal binding. Calculations were made using Sigma Plot 11.00 for Windows (Systat Software Inc.)

Supplemental Methods References

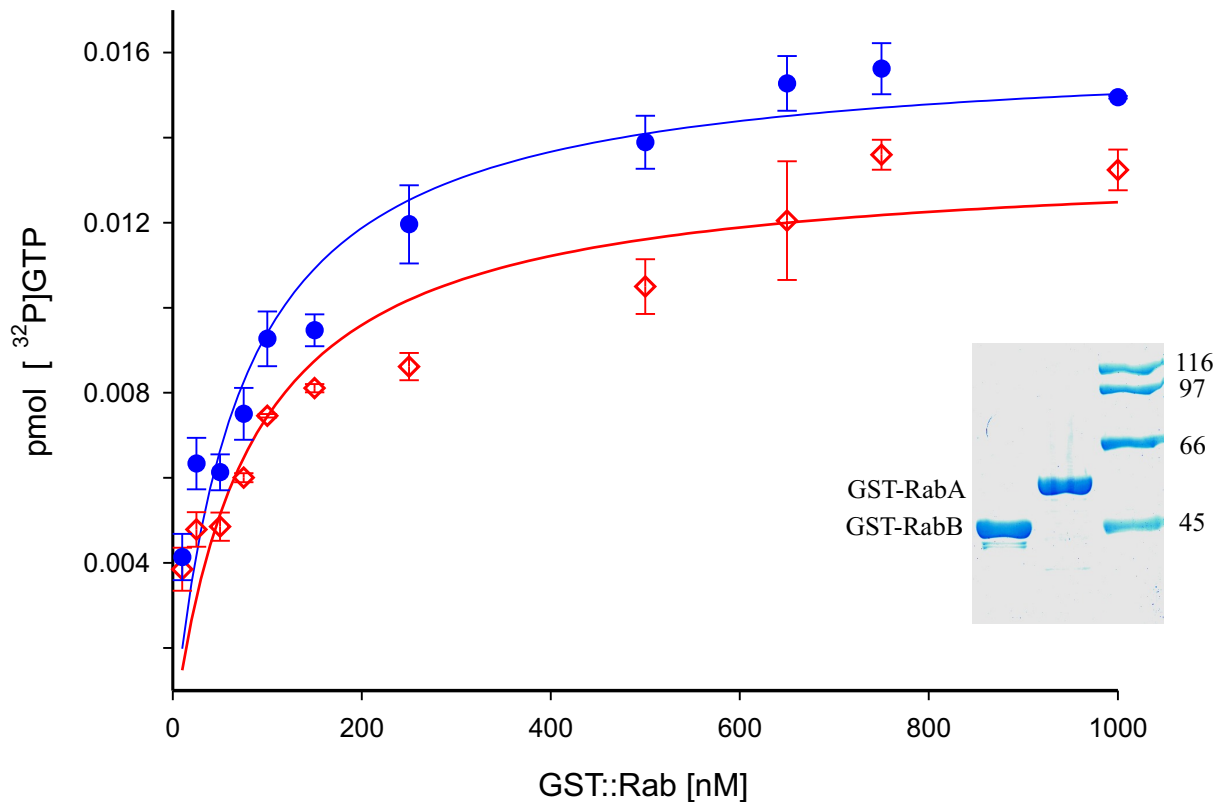
- Burstein, E. S., and Macara, I. G. (1992). Interactions of the ras-like protein p25^{rab3A} with Mg^{2+} and guanine nucleotides. *Biochem. J.* 282, 387-392.
- Choo, Y., and Klug, A. (1993). A role in DNA binding for the linker sequences of the first three zinc fingers of TFIIIA. *Nucleic Acids Res.* 21, 3341-3346.
- Zhang, B., Zhang, Y., Wang, Z., and Zheng, Y. (2000). The role of Mg^{2+} cofactor in the guanine nucleotide exchange and GTP hydrolysis reactions of Rho family GTP-binding proteins. *J. Biol. Chem.* 275, 25299-25307.



Supplementary Fig. 1. Multiple sequence alignment of the three human, the two *A. nidulans* and the three *S. cerevisiae* Rab5 paralogues. Indicated elements of secondary structure correspond to the human Rab5A structure in the GTP conformation (Zhu *et al.*, 2003). The interswitch, switch I and II regions are shaded, as is the C-terminal Cys-containing motif undergoing geranylgeranylation. Also indicated with red triangles are the three highly conserved residues denoted as the hydrophobic triad, which play an important role in receptor recruitment. Note the long insertions sharing sequence similarity which are present between α4 and α5 in *A. nidulans* RabA and *S. cerevisiae* Ypt52p.



Supplementary Fig. 2. Data complementing GST-pull down experiments in Fig. 6 and 10. AnVps19 (panel A) and AnVps34 (panel B), which are pulled-down by GST-RabB but not by GST-RabA, are not pulled-down by GST either. Panel (C) AnVps8 is pulled-down by GST-RabB and to a lesser extent by GST-RabA, but not at all by GST alone. Extracts from cells expressing AnVps19-(HA)₃, AnVps34-(HA)₃ and AnVps8-(HA)₃ at physiological levels were incubated with GST protein baits that were loaded with GTP- γ -S or GDP, as indicated. Proteins co-purifying with the baits on glutathione-Sepharose beads were analyzed by anti-HA western blots. Input lanes contain 10% (AnVps19), 10% (AnVps34) and 7.5% (AnVps8) of the total material used in the pull-downs.



Supplemental Figure 3. GST-RabA and GST-RabB do not show major differences in GTP binding, as determined by filter binding assays with $[\gamma\text{-}^{32}\text{P}]\text{-GTP}$ and purified GST-Rabs. The plots shown were used to determine the apparent dissociation constants (K_d) of GTP::GST-RabA (blue) and GTP::GST-RabB (red) complexes. Reaction mixtures containing 2.5 nM $[\gamma\text{-}^{32}\text{P}]\text{-GTP}$ (6000 Ci/mmol) were incubated with increasing concentrations (10-1000 nM) of the corresponding fusion protein as described under Supplemental Methods. Values are the mean of three independent experiments. Error bars indicate standard error. The apparent K_d values obtained as the concentration of protein at half-maximal binding were 81 nM for GST-RabA and 71 nM for GST-RabB. While the values thus obtained do not intend to represent accurate determinations of the K_d (for example, only the total protein and not the proportion of active protein in the samples is known), these data strongly indicate that GST-RabA and GST-RabB do not show major differences in GTP binding relative to each other.

Supplementary Table I. Strains used in this work

| | | |
|---------|--|--------------------|
| MAD0002 | <i>biA1</i> | our collection |
| MAD0005 | <i>wild-type</i> | our collection |
| MAD1437 | <i>yA2; argB2::[argB*-alcAp::gfp::rabA]</i> | Abenza et al, 2009 |
| MAD1739 | <i>pyrG89; pyroA4; nkuAΔ::bar</i> | H.N.Arst |
| MAD1740 | <i>wA4; inoB2 nkuAΔ::bar pyroA4; niiA4</i> | H.N.Arst |
| MAD2006 | <i>pabaA1 pyrG89? wA2; rabAΔ::pyrG^{AF}; pyroA4</i> | This study |
| MAD2038 | <i>wA4; pyroA4[pyroA*-rabBp::gfp::rabB] inoB2 nkuAΔ::bar; niiA4</i> | This study |
| MAD2050 | <i>agtA::gfp::pyrG^{AF} pabaA1 pyrG89? yA2</i> | Abenza et al, 2009 |
| MAD2054 | <i>wA4; inoB2 nkuAΔ::bar pyroA4[pyroA*-alcA^P::mrfp::rabB]; niiA4</i> | This study |
| MAD2063 | <i>argB2::[argB*-alcAp::gfp::rabA]; pyroA4[pyroA*-alcAp::mrfp::rabB] nkuA?; niiA4</i> | This study |
| MAD2065 | <i>wA4; inoB2 nkuAΔ::bar pyroA4:: [pyroA*-alcA^P:: (vps27-FYVE)₂::gfp]; niiA4</i> | This study |
| MAD2090 | <i>yA2 agtA::gfp::pyrG^{AF} pyrG89?; rabBΔ::pyroA^{AF}; inoB2 pyroA4?</i> | This study |
| MAD2095 | <i>agtA::gfp::pyrG^{AF} pabaA1 wA2, rab5BΔ::pyroA^{AF}; pyroA4</i> | This study |
| MAD2132 | <i>pabaA1 pyrG89?; wA4; rabAΔ::pyrG^{AF}; inoB2 nkuAΔ::bar pyroA4 [pyroA*-alcA^P:: (vps27-FYVE)₂::gfp]; niiA4</i> | This study |
| MAD2182 | <i>pyrG89; synA::gfp::pyrGAF; nkuAΔ::bar pyroA4</i> | This study |
| MAD2193 | <i>pabaA1; rabBΔ::pyroA^{AF} wA4;; inoB2 nkuAΔ::bar pyroA4:: [pyroA*-alcA^P:: (vps27-FYVE)₂::gfp], niiA4</i> | This study |
| MAD2207 | <i>pyrG89; pyroA4, Δnku::bar; vps19::(HA)3::pyrG^{AF}</i> | This study |
| MAD2210 | <i>pyrG89; vps34::(HA)3-pyrG^{AF}; pyroA4, Δnku::bar</i> | This study |
| MAD2236 | <i>wa4; rabBΔ::pyroA^{AF}; argB2::[argB*-alcA^P::gfp-rabA]; pyroA4?</i> | This study |
| MAD2273 | <i>biA1; wA4 rabBΔ::pyroAAF; pyroA4?; pacC900; pantoB100</i> | This study |
| MAD2408 | <i>agtA::(HA)3::pyrG^{AF} pyrG89?; pyroA4 nkuAΔ::argB^{AF}?; pantoB100</i> | This study |
| MAD2416 | <i>agtA::(HA)3::pyrG^{AF} pyrG89?;rabBΔ::pyroA^{AF}; pyroA4?; pantoB100</i> | This study |
| MAD2502 | <i>pyrG89, vps45::(HA)3-pyrG^{AF}; pyroA4, Δnku::bar</i> | This study |
| MAD2514 | <i>yA2 pabaA1; argB2::[argB*-alcAp::gfp::rabB^{S31N}]</i> | This study |
| MAD2525 | <i>pyrG89; rabAΔ::pyrG^{AF}; nkuAΔ::bar pyroA4</i> | This study |
| MAD2526 | <i>pyrG89; wA4 rabBΔ::pyroA^{AF}; pyroA4 nkuAΔ::bar</i> | This study |
| MAD2551 | <i>yA2 pabaA1; argB2::[argB*-alcAp::gfp::rabB]</i> | This study |
| MAD2679 | <i>pyrG89; pyroA4, Δnku::bar; vps8::(HA)3-pyrG^{AF}</i> | This study |
| MAD2685 | <i>rabBΔ::pyroA^{AF}; pyroA4?</i> | This study |
| MAD2865 | <i>yA2; pabaA1; argB2::[argB*-alcAp::gfp::rabB^{C216A,C218A}]</i> | This study |
| MAD2906 | <i>pyrG89?; rabBΔ::pyroA^{AF}; synA::gfp::pyrG^{AF}; pyroA4? nkuA?</i> | This study |
| MAD2912 | <i>pabaA1 yA2 pyrG89?; argB2::[argB*-alcAp::gfp::rabB] rabAΔ::pyrG^{AF}; nkuAΔ::bar</i> | This study |
| MAD2931 | <i>pabaA1; rabBΔ::pyroA^{AF}; argB2::[argB*-alcAp::mrfp::rabB]; pyroA4? nkuA?; pacC900?</i> | This study |
| MAD2932 | <i>pabaA1; argB2::[argB*-alcAp::mrfp::rabB]; nkuA?; pacC900; pantoB100</i> | This study |
| MAD2933 | <i>pabaA1; rabBΔ::pyroA^{AF}; pyroA4?; pantoB100</i> | This study |
| MAD3122 | <i>pyrG89, gdiA::(HA)3-pyrG^{AF}; pyroA4; nkuAΔ::bar</i> | This study |

Supplementary Table 2. Plasmids constructed for this work

| | |
|---|--|
| p1760 pGEX-2T:: <i>rabB</i> | <i>rabB</i> coding region amplified with primers 5'BamHIRabBG and 3'EcoRIRabB2H and cloned into pGEX-2T |
| p1773 pGEX-2T:: <i>rabA</i> | <i>rabA</i> coding region amplified with primers 5'BamHIRabA and 3'EcoRIRabA and cloned into pGEX-2T |
| p1795 <i>rabB^P::GFP-RabB</i> | Constructed by fusion PCR of three fragments: (i) 559 bps of the 5'-UTR of <i>rabB</i> were PCR-ed from genomic DNA with primers JF58 and JF59 ; (ii) The GFP coding region was amplified with primers Fw5UTRRabBjointGFP and RevORFRabBjointGFP ; (iii) The <i>rabB</i> (AN3842) ORF was amplified from genomic DNA with primers FwRabBORF and RevpyrojointRabB . The fusion PCR product was cloned in pGEM-t-Easy to yield p1794. <i>rabB^P::gfp::rabB</i> was amplified from p1794 with primers KpnI5UTRRabBFw and EcoRIRabBRev and KpnI/EcoRI-cloned into pgpdA003 (Pantazopoulou and Peñalva, 2009). The resulting plasmid drives GFP-RabB expression under the control of the physiological <i>rabB</i> promoter and includes a <i>gpdA</i> transcriptional terminator, as well as <i>pyroA[*]</i> , which targets integration into the <i>pyroA</i> locus. |
| p1815 pGEX-2T:: <i>rabE^{Ypt31}</i> | <i>rabE</i> coding region amplified with primers 5'BamHI Ypt31/pGEX and 3'EcoRI Ypt7/pGEX and cloned into pGEX-2T |
| p1816 pGEX-2T:: <i>rabN^{Ypt7}</i> | <i>rabN</i> coding region amplified with primers 5'BamHI Ypt7/pGEX and 3'EcoRI Ypt7/pGEX and cloned into pGEX-2T |
| p1822 <i>alcA^P::mRFP-RabB</i> | The RabB ORF was amplified from genomic DNA with primers FwRabBKpnI and RevRabBAgeI and KpnI/AgeI cloned in pALC ^{pyroA} (Calcagno-Pizarelli et al., 2007). <i>mrfp</i> was amplified by PCR using primers Fw RFPKpnI and RevRFPKpnI and attached in frame (KpnI) to the 5'-end of the <i>rabB</i> coding sequence. This plasmid contains <i>pyroA[*]</i> for <i>pyroA</i> targeting. p1822 drives expression of mRFP-RabB under the control of the <i>alcA^P</i> |
| p1832 <i>alcA^P::[vps27-FYVE]2-GFP</i> | The FYVE domain of AnVps27 (AN2071) was PCR-amplified from genomic DNA (primers FW KpnFYVE and Rev AgeI FYVE , see oligonucleotide list) and KpnI/AgeI cloned in pALC ^{pyroA} (Calcagno-Pizarelli et al., 2007). PCR-amplified GFP (primers Fw GFP AgeI and Rev GFP AgeI was attached in frame to the FYVE domain C-terminus AgeI site. A second FYVE domain was appended in frame to the N-terminus of the resulting fusion protein as a KpnI fragment (primers FW KpnFYVE and Rev KpnFYVE). p1832 thus drives expression of [AnVps27-FYVE]2::GFP under the control of the <i>alcA^P</i> . It carries a mutated <i>pyroA[*]</i> allele that targets integration at the <i>pyroA</i> locus. |
| p1885 <i>alcA^P::GFP-RabB</i> | The RabB coding sequence was amplified from cDNA with primers JFA29 and JFA30 and topo-cloned. After attachment of 5'-BamHI and 3'-EcoRI sites (primers JFA115 and JFA116), the ORF was cloned into pALC1 (Mingot et al., 1999) and the GFP was appended to the RabB N-terminus as a BamHI fragment. pALC1 carries an <i>argB[*]</i> allele to target integration to <i>argB2</i> . |
| p1896 <i>alcA^P::GFP-RabB^{S21N}</i> | Constructed as above. The missense mutation leading to Ser21Asn substitution predictably locking RabB in the GDP conformation was introduced by site directed mutagenesis with primers JFA70 and JFA71 . |
| p1944 <i>alcA^P::GFP-RabB^{C216A, C218A}</i> | Constructed as above. The missense mutations leading to Cys216Ala and Cys218Ala substitutions were introduced by site-directed mutagenesis using primers JFA125 and JFA126 . |

Supplementary Table 3. List of oligonucleotides used in this work

| cDNA cloning into pGEX-2T | |
|--|---|
| <i>rabA</i> | |
| 5' BamHI RabA | GGATCCATGTCTGAATCAACGCCCG |
| 3' EcoRI RabA | GAATTCTTAACAGGCGCATCCCTC |
| <i>rabS (ypt7)</i> | |
| 5' BamHI Ypt7/pGEX | AAAGGATCCATGTCATCACGGAAGAAGGTC |
| 3' EcoRI Ypt7/pGEX | AAAGAATTCAGCAGGCGCAACCGTC |
| <i>rabE (ypt31)</i> | |
| 5' BamHI Ypt31/pGEX | AAAGGATCCATGGCTAACGACGAGTATG |
| 3' BamHI Ypt31/pGEX | AAAGGATCCTTAACAGCATCCACCCTTG |
| <i>rabB</i> | |
| 5' BamHIRabBG | GGATCCATGGCATCCAGAGCCGC |
| 3' EcoRI RabB2H | GAATTCTAACAAATTACACGCTCCGCC |
| C-terminal (HA)₃ tagging | |
| <i>vps8 (AN0244)</i> | |
| 5' Vps8 | GTGGGTATCCTACAGAGCGTCCAGG |
| 3' Vps8 | TTCGCTATGTACAGGACAAACCGGAC |
| 5' Vps8TAG | GTGTCCGGTTGTCTGTACATAGCGAAGGAGCTGGTGCAGGCGCTGGAGCCGGTGCC |
| 3' Vps8TAG | GTAACATAAAATGCAGATCGCTCATGCCTGTCTGAGAGGAGGCACTGATGCGTGATG |
| 5' UTR Vps8 | GCATGAGCGATCTGCATTTTATGTTAC |
| 3' UTR Vps8 | CTGACTCCAGACAAATGCCCTGAC |
| <i>vacA-vps19 (AN3144)</i> | |
| 5' TagVps19 | CGAGTCGTTTGCGGTGATGTCTTGAC |
| 3' TagVps19 | TGTGTGGTTGCCCATATAGGCACCTTC |
| 5' HA Vps19 | CTTTGAAGGTGCTATATGGGCAACCACACAGGAGCTGGTGCAGGCGCTGGAGCCGGTGCC |
| 3' HA-Vps19 | GAAGAGAAAAGGATGTGAATATGGAGGGGTGCTGTCTGAGAGGAGGCACTGATGCGTGATG |
| 5' UTR-Vps19 | CACCCCTCCATATTCACATCCTTTTCTC |
| 3' UTR-Vps19 | GTAGCTTGATCCCCGAACCTCCAGCC |
| <i>pika-vps34 (AN4709)</i> | |
| 5' TagVps34 | CCAAGGTGAACTGTGCGCCGTGCTC |
| 3' TagVps34 | CGCTCTCCATCCCTGGACAAAATCATGAAG |
| 5' TagColVps34 | CTTCATGATTTGTCCAGGGATGGAGAGCGGGAGCTGGTGCAGGCGCTGGAGCCGGTGCC |
| 3' TagcolVps34 | GAAAAGTATTATAAATAGGGTTTTGAAAGGCTGTCTGAGAGGAGGCACTGATGCGTGATG |
| 5' UTR Vps34 | CCTTTCAAAACCTATTTATAATACTTTTC |
| 3' UTR Vps34 | CTGCTTTCAGGGCTTGCGTTATACTGATAC |
| <i>vps45 (AN6531)</i> | |
| 5' Vps45 | GAGTTACGGGAAATTGTTCTTTCGC |
| 3' Vps45 | TCGCCAATATTCCTCCGAAGCCGTCC |
| 5' Vps45Tag | GGACGGCTTCGGAGGAATATTGGGCGAGGAGCTGGTGCAGGCGCTGGAGCCGGTGCC |
| 3' Vps45Tag | GTAGAGAATGATAACATAAATTGAAATCTGTCTGAGAGGAGGCACTGATGCGTGATG |
| 5' UTR Vps45 | ATTTCCAATTATGTTTATCATTCTCTAC |
| 3' UTR Vps45 | CTCCATGAGTCCCTCAACAGCATAC |

| | |
|--|---|
| <i>gdiA</i> (AN5895) | |
| 3'UTR- <i>gdi</i> | CAACCACCTCGATCAGTATCTTTAAC |
| 5'UTR- <i>gdi</i> | ATATCTCAAACCCATATCGGGATTAATATAC |
| 3' <i>gdi</i> | CTCCTGGGCGAGAGTTTGGCCCTC |
| 5' <i>gdi</i> | CCATTGATGGCGCTAACACAGTC |
| 3' <i>gdi</i> -tag | GTATATTAATCCCAGATATGGGTTTGAGATATCTGTCTGAGAGGAGGCACTGATGCGTG |
| 5' <i>gdi</i> -tag | GAGAGGGCCAAACTCTCGCCCAGGAGGGAGCTGGTGCAGGCGCTGGAGCCGG |
| Constructs for fluorescent fusion proteins | |
| alcAp::[vps27-FYVE]2-GFP | |
| FW KpnFYVE | GGGTACCATGCCGAATGGATCGACTCCGAC |
| Rev KpnFYVE | GGGTACCTGAAGTTAGCTTCGCGTAGCAC |
| Rev AgeI FYVE | GGGACCGGTTGAAGTTAGCTTCGCGTAGCAC |
| Fw GFP AgeI | GGGACCGGTATGGTGAGCAAGGGCGAGG |
| Rev GFP AgeI | GGGACCGGTTACTTGTACAGCTCGTCCA |
| rabB ^P ::GFP-RabB | |
| JFA58 5'UTR rabB fw | GGCATCTTCGTCATGATCGTGC |
| JFA59 5'UTR rabB rev | GATGGGGACGGTTGGACAATGAGC |
| Fw5UTRRabBjointGFP | GCTCATTGTCCAACCGTCCCATCATGGTGAGCAAGGGCGAGGAGCTG |
| RevORFRabBjointGFP | TGCTGCGGCTCTGGATGCCATTTGTACAGCTCGTCCATGCCGTG |
| FwRabBORF | ATGGCATCCAGAGCCGAGGC |
| RevpyrojointRabB | GTAATCCAGCATCTGATGTCCATCGGCTCTAACAATTACACGCTCCGCCA |
| KpnI5UTRRabBFw | GGGTACCCGGAGGGATACTGAATGAGAG |
| EcoRI RabBRev | GGAATTCGCTCTAACAATTACACGCTCC |
| alcA ^P ::mRFP-RabB | |
| FwRabBKpnI | GGGTACCATGGCATCCAGAGCCGAGC |
| RevRabBAgeI | GGGACCGGTCTAACAATTACACGCTCCGC |
| Fw RFPKpnI | GGGTACCATGGCCTCCTCCGAGGACGTC |
| RevRFPKpnI | GGGTACCGGCGCCGTTGGAGTGGC |
| alcA ^P ::GFP-RabB wild-type and mutants | |
| JFA029 5'rabB fw | ATGGCATCCAGAGCCGAGC |
| JFA030 3'rabB rev | CTAACAATTACACGCTCCGCC |
| JFA115 5'BamHI rabB fw | GGATCCATGGCATCCAGAGCCGC |
| JFA116 3'EcoRI rabB rev | GAATTCTAACAATTACACGCTCCGCC |
| JFA070 S31N rabB fw | CCTCGGAGAATCTGCCGTAGGAAAGAACTCATTAGTCCTGAG |
| JFA071 S31N rabB rev | CTCAGGACTAATGAGTTCTTCTACGGCAGATTCTCCGAGG |
| JFA125 C216A C218A rabB fw | CCCAAAGTGGCGGAGCGGCTAATGCTTAGAATTCCAGC |
| JFA126 C216A C218A rabB rev | GCTGGAATTCTAAGCATTAGCCGCTCCGCCACTTGGG |
| Deletion PCRs | |
| <i>rabB</i> deletion PCR | |
| JFA058 5'UTR rabB fw | GGCATCTTCGTCATGATCGTGC |
| JFA059 5'UTR rabB rev | GATGGGGACGGTTGGACAATGAGC |
| JFA060 3'UTR rabB fw | AGCCTATTCGATCCGTCGG |
| JFA061 3'UTR rabB rev | GCTCCAGCTCTCGCAAGCC |
| JFA062 5' delta rabB-pyrGfum | GCTCATTGTCCAACCGTCCCATCCGATGGACATCAGATGCTGG |
| JFA063 3' delta rabB-pyrGfum | CGGACGGATCGAATAGGCTGGACAAATGCACAGAACACCC |

| <i>Anvps8</i> deletion PCR | |
|------------------------------|---|
| JFA127 5'UTR vps8 fw | CTCGGCGACAAACCAGTCAG |
| JFA128 5'UTR vps8 rev | CAGCGGTATGTCCGAATGTTC |
| JFA129 3'UTR vps8 fw | GTTCATATAGGCGTTATTCATCGG |
| JFA130 3'UTR vps8 rev | GGCCATCTTCCACTTCCTTCG |
| JFA131 5' delta vps8-pyrGfum | GAACATTCGGACATACCGCTGGTAACGGCCGCCAGTGTGCTG |
| JFA132 3' delta vps8-pyrGfum | CCGATGAATAACGCCTATATGAACCTGTCTGAGAGGAGGCACTGATGCC |

| <i>Anvps45</i> deletion PCR | |
|-----------------------------|--|
| JFA136 5'UTR vps45 fw | GTCAAACGCAGGACCGCC |
| JFA137 5'UTR vps45 rev | GGCGAATGGAAGATTGAAAAATG |
| JFA138 3'UTR vps45 fw | CGGTGTGCTGGCGTTCATATG |
| JFA139 3'UTR vps45 rev | GTTTGTCTCAAATTGGTCGCGG |
| JFA140 delta vps45-pyrG fw | CATTTTCAATCTTCCATTCGCCGTAACGGCCGCCAGTGTGCTG |
| JFA141 delta vps45-pyrG rev | CATATGAACGCCAGCACACCGCTGTCTGAGAGGAGGCACTGATGCC |

Supplementary Table 4. Proteins identified by MALDI-TOF/TOF

| RabB-GTP γ S Interacting proteins | | | | | | | | |
|--|-----------------------------|--------------------------|-----------------------|-------------------------|----------------------------|-------------------------|-------------------------------|-------------------|
| Protein name ^a | Accession code ^b | total score ^c | expect ^d | ions score ^e | MW Da theor ^f . | pI theor ^g . | Matches peptides ^h | Sequence Coverage |
| AnVps8 | XP_657848 | 127 | 1,3x10 ⁻⁶ | 65 | 177571 | 5,52 | 26 | 17 |
| AnVps3 | XP_658367 | 99 | 6x10 ⁻⁵ | n.d. (**) | 126115 | 5,13 | 21 | 20 |
| AnVps18 | XP_659870 | 358 | 8,3x10 ⁻³¹ | 242 | 109018 | 5,61 | 28 | 31 |
| AnVps11 | AN12235.1(*) | 80 | 0.0058 | 33 | 107290 | 5,65 | 21 | 20 |
| AnVps16 | XP_664515 | 274 | 2,1x10 ⁻²² | 108 | 87426 | 5,31 | 27 | 37 |
| AnVps33 | XP_660022 | 474 | 2,1x10 ⁻⁴² | 223 | 72498 | 6,94 | 39 | 56 |
| AnVps45 | XP_664135 | 612 | 3,3x10 ⁻⁵⁶ | 414 | 67027 | 6,28 | 33 | 45 |

| RabB- and RabA-GDP Interacting protein | | | | | | | | |
|--|-----------------------------|--------------------------|---------------------|-------------------------|----------------------------|-------------------------|-------------------------------|-------------------|
| Protein name ^a | Accession code ^b | total score ^c | expect ^d | ions score ^e | MW Da theor ^f . | pI theor ^g . | Matches peptides ^h | Sequence Coverage |
| AnGdiA | XP_663463 | 275 | 2x10 ⁻¹¹ | ND | 52499 | 7,85 | 19 | 74 |

| RabA- GTP γ S Interacting proteins | | | | | | | | |
|---|-----------------------------|--------------------------|-----------------------|-------------------------|----------------------------|-------------------------|-------------------------------|-------------------|
| Protein name ^a | Accession code ^b | total score ^c | expect ^d | ions score ^e | MW Da theor ^f . | pI theor ^g . | Matches peptides ^h | Sequence Coverage |
| AnVps8 | XP_657848 | 104 | 2,1x10 ⁻⁵ | 52 | 177571 | 5,52 | 20 | 23 |
| AnVps3 | XP_658367 | 238 | 1,3x10 ⁻¹⁷ | 117 | 126115 | 5,13 | 33 | 38 |
| AnVps18 | XP_659870 | 285 | 3.3x10 ⁻²⁵ | 243 | 109018 | 5,61 | 15 | 23 |
| AnVps11 | AN12235.1(*) | 174 | 2,1x10 ⁻¹² | 48 | 107290 | 5,65 | 30 | 33 |
| AnVps16 | XP_664515 | 157 | 2,1x10 ⁻¹² | 61 | 87426 | 5,48 | 23 | 20 |
| AnVps33 | XP_660022 | 138 | 8,3x10 ⁻⁹ | 52 | 72498 | 6,94 | 20 | 33 |
| AnHsp70 | XP_663614 | 408 | 1,3x10 ⁻³⁴ | 277 | 72328 | 5,78 | 27 | 43 |

^aProtein name as shown in 1D SDS-PAGE in Figure 9. ^bProtein accession code from Swiss-Prot database, with the exception of AnVps11 (*, see below) ^cMascot score/^dExpected value. ^eMascot ion score. ^fTheoretical molecular weight (Da). ^gTheoretical pI. ^hNumber of matched peptides (**, see below). ⁱProtein sequence coverage for the most probable candidate as provided by Mascot. (*) The amino acid sequence corresponding to this entry (XP_660065) contains an incorrect ~500 residue C-terminal extension due to erroneous prediction of the coding region. The 957 residue AnVps11 protein listed as AN12235.1 in the Broad Institute Aspergillus Database (http://www.broadinstitute.org/annotation/genome/aspergillus_group/MultiHome.html) is correct and was considered for sequence coverage. (**) Data shown refer all to the same GST-RabB experiment, in which no AnVps3 peptides were sequenced. However, in a second experiment with GST-RabB, we determined the sequence of four peptides (63 residues) matching the AnVps3 sequence from this band, leading to an ions score of 330, and thus unequivocally confirming that this band actually represents AnVps3.