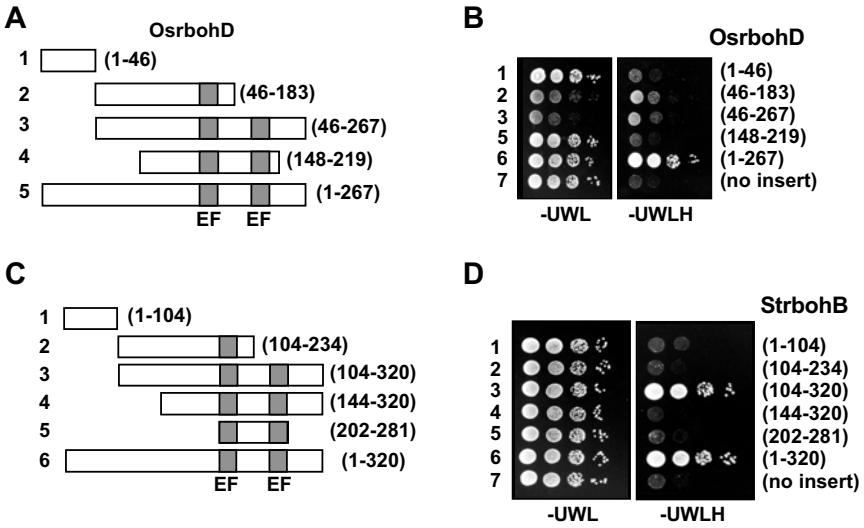
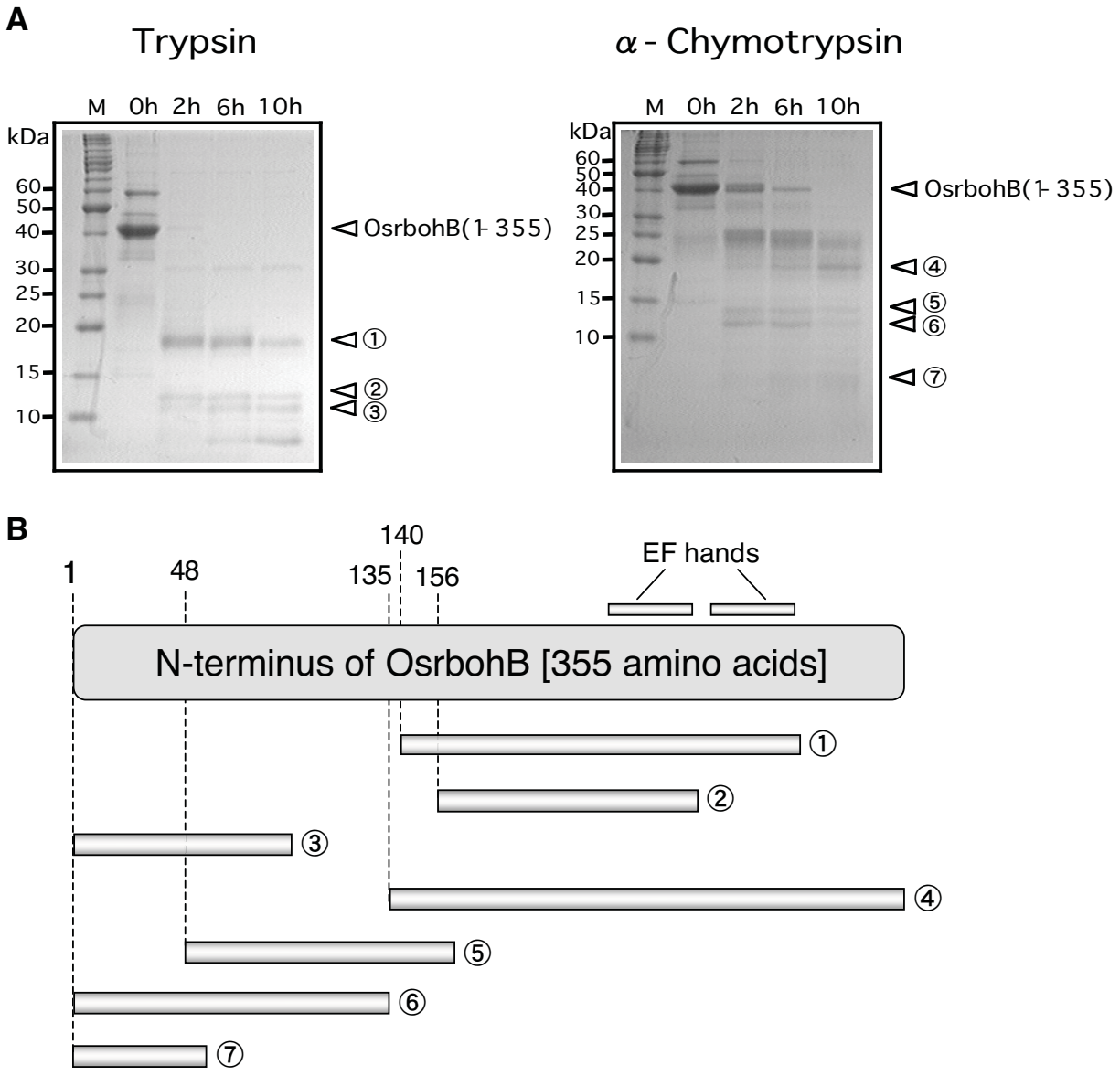
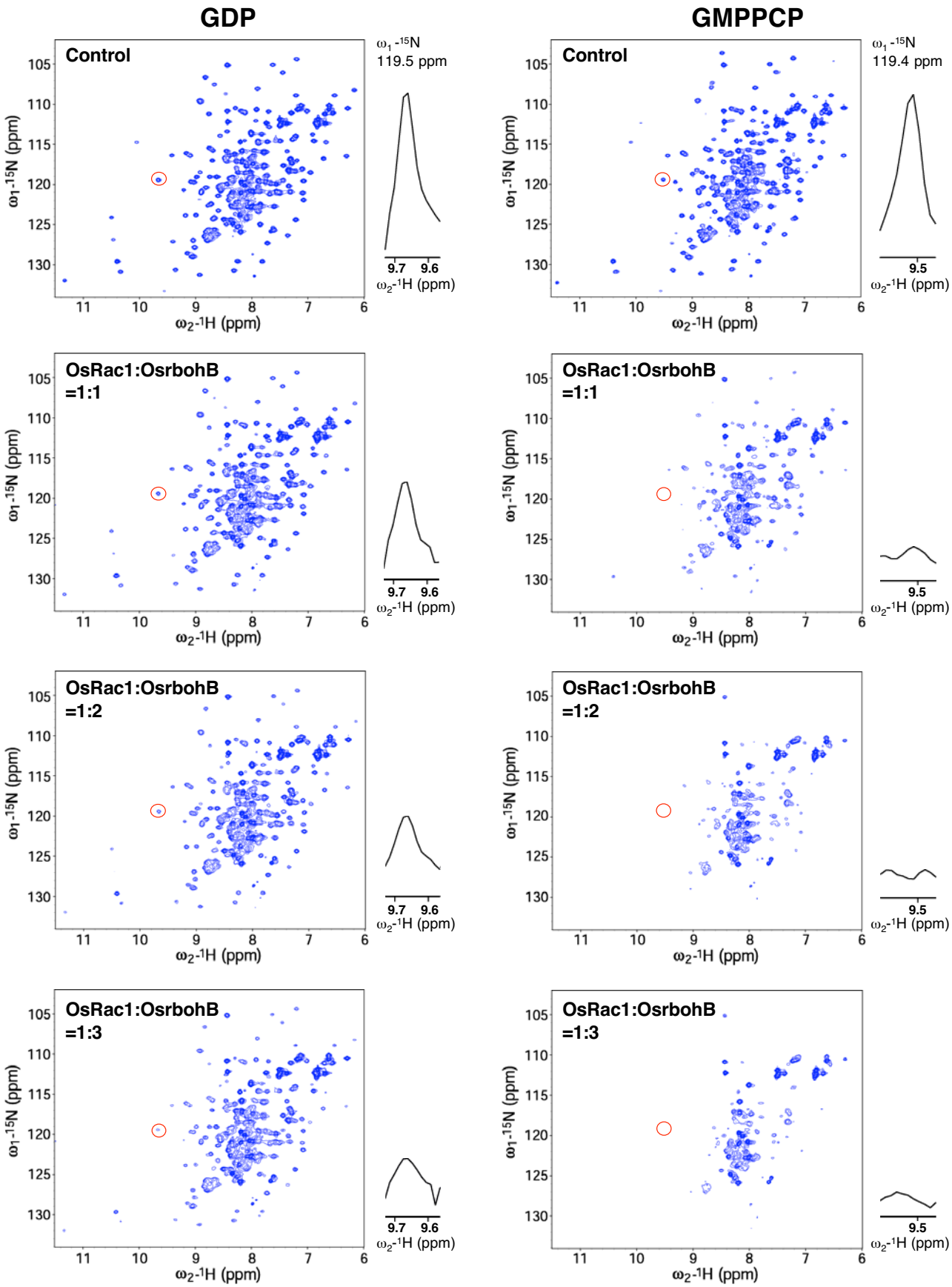
Supplemental Data. Wong et al. (2007). Regulation of rice NADPH oxidase by binding of Rac GTPase to its N-terminal extension.



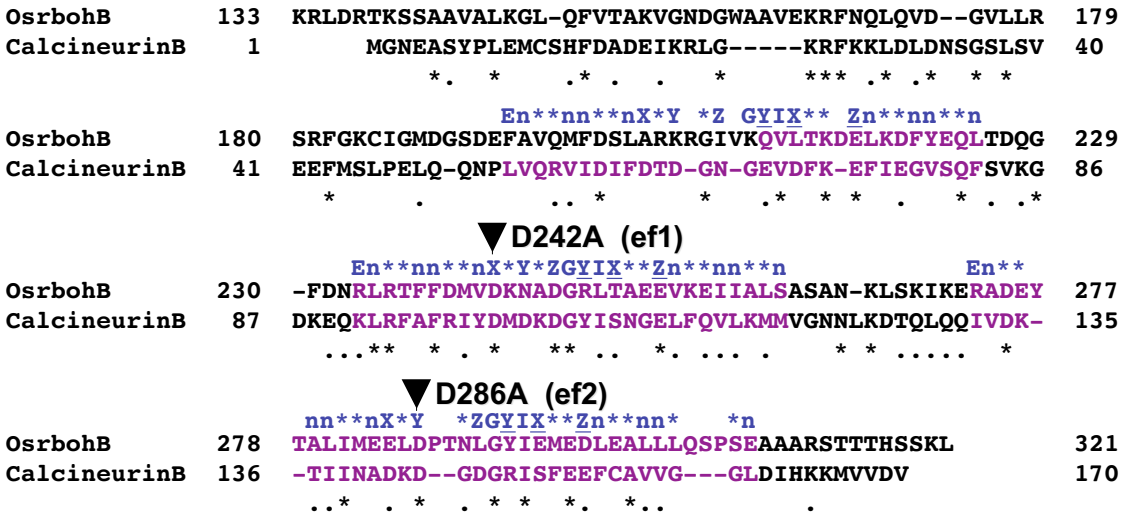
Supplemental Figure 1. Interaction of various fragments of the N-terminal region of OsrbohD or StrbohB with OsRac2. (**A** and **C**) Schematic representations of OsrbohD and StrbohB showing the size and position of each fragment of the N-terminal region of OsrbohD and StrbohB used for the assays. (**B** and **D**) Interaction between the N-terminal fragments of OsrbohD and StrbohB with CA-OsRac2 in yeast.



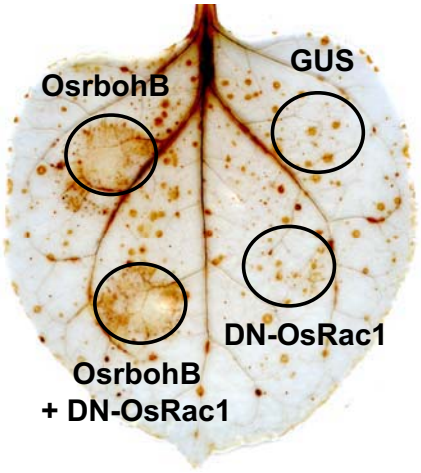
Supplemental Figure 2. Proteolysis of N-terminal region of OsrbohB (1-355). **(A)** OsrbohB (1-355) was incubated with trypsin (left) or α-chymotrypsin (right). Aliquots of samples were taken at the indicated time points. The reaction products were analyzed by SDS-PAGE and detected by staining with CBB. Each of the fragments (1-7) was analyzed by N-terminal protein sequencing. **(B)** Schematic representation of each protein fragment produced by digestion with trypsin or α-chymotrypsin.



Supplemental Figure 3. ^{1}H-^{15}N HSQC spectra of uniformly ^{15}N-labeled OsRac1 with different concentrations of OsrbohB(138-313). GDP-bound form (left column) and GMPPCP-bound form (right column) are shown without OsrbohB (top) or with equimolar (second), 2 (third) and 3 equivalents (bottom), respectively. 1D slice spectra are given for the circled peaks on the right side of each ^{1}H-^{15}N HSQC spectrum.



Supplemental Figure 4. Partial amino acid alignment of OsrbohB and CalcineurinB. Amino acid sequences of OsrbohB and CalcineurinB (Genbank accession no. L03554) were aligned using ClustalW(v1.4) (Thompson et.al 1994). Aligned EF-hand domains are indicated in magenta. Consensus of EF hand domain are shown in blue. A Ca^{2+} is coordinated by oxygen in the side chain of amino acids such as serine (S) aspartate (D), asparagine (N) at X, Y, and Z positions. Residue at position Y can be any amino acid, whereas glutamate (E) or aspartate (D) occupy position Z and binds Ca^{2+} with two oxygen atoms. Glycine (G) at position G permits a bend in the EF-hand loop, and a hydrophobic residue leucine (L), isoleucine (I) or valine (V) is present in position. Two neighboring α-helices contain alternating hydrophilic (*) residue and hydrophobic (n) residues (Gutierrez-Ford et al., 2003). Arrowheads indicate OsrbohB aspartate residues at positions 242 and 286, which occupy positions X and Y, respectively, that were mutated to alanine (A). D242A and D286A mutations are designated as ef1 and ef2 respectively.



Supplemental Figure 5. Transient co-expression of DN-OsRac1 and OsrbohB does not enhanced ROS production **i**n *N. benthamiana*. DAB-stained *N. benthamiana* leaves transiently transformed with GUS (P_{35S}-GUS), OsRac1 (P_{35S}-DN-OsRac1), OsrbohB (P_{35S}-OsrbohB).