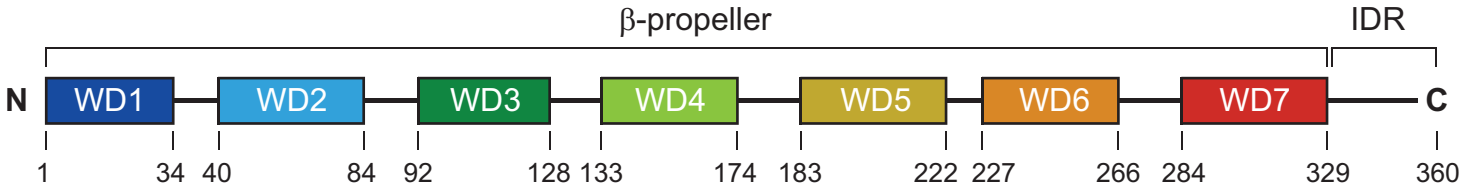
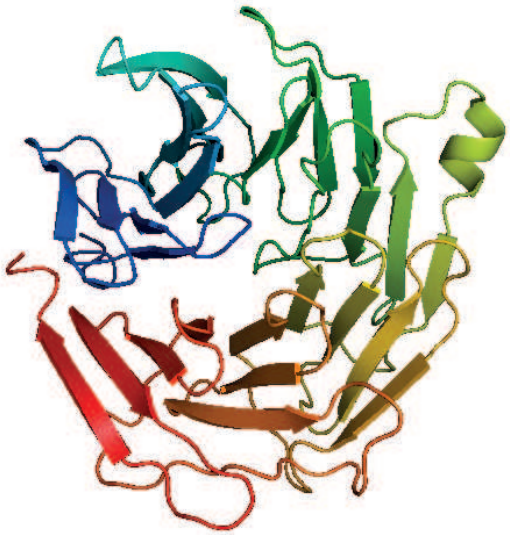
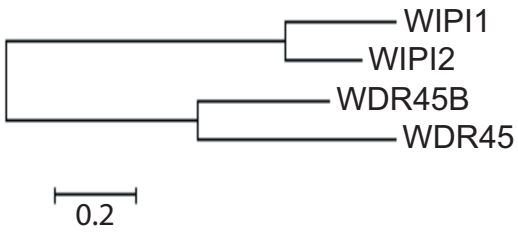
A



B



C



D

```
WIPI1    MEA--EAADAPPGG------------V--ESALSCFSFNQDCTSLATGTKAGYKLFSLSS VEQLDQVHGSNEIPDVYIVERLFSSSL
WIPI2    MNLASQSGEAGAGQLLFANFNQDNTEVKGASRAAGLGRRAVVWSLAVGSKSGYKFFSLSS VDKLEQIYECTDTEDVCIVERLFSSSL
WDR45B   MNL--LPCNPHGNGLLY------------------AGFNQDHGCFACGMENGFRVYNTDP LKEKEKQ-EF-LEGGVGHVEMLFRCNY
WDR45    ------MTQQPLRGVTS------------------LRFNQDQSCFCCAMETGVRIYNVEP LMEKGHL-DHEQVGSMGLVEMLHRSNL
WIPI1    VVVVSHTKPRQM---NVYHF--------KKGTEICNYSYSSNILSIRLNRQRLLVCLEESIYIHNIKDMKLLKTLLDIPANPTGLCAL
WIPI2    VAIVSLKAPRKL---KVCHF--------KKGTEICNYSYSNTILAVKLNRQRLIVCLEESLYIHNIRDMKVLHTIRETPPNPAGLCAL
WDR45B   LALVGGGKKPKYPPNKVMIWDDLK------KKTVIEIEFSTEVKAVKLRRDRIVVVLDSMIKVFTFTHNPHQLHVFETCYNPKGLCVL
WDR45    LALVGGGSSPKFSEISVLIWDDAREGKDSKEKLVLEFTFTKPVLSVRMRHDKIVIVLKNRIYVYSFPDNPRKLFEFDTRDNPKGLCDL
WIPI1    SINHSNSYLAYPGSLTSGEIVLYDGNSL-----KTVCTIAAHEGTLAAITFNASGSKLASASEKGTVIRVFSVPDGQKLYEFRRGMKR
WIPI2    SINNDNCYLAYPGSATIGEVQVFDTINL-----RAANMIPAHDSPLAALAFDASGTKLATASEKGTVIRVFSIPEGQKLFEFRRGVKR
WDR45B   CPNSNNSLLAFPGTHT-GHVQLVDLASTE----KPPVDIPAHEGVLSCIALNLQGTRIATASEKGTLIRIFDTSSGHLIQELRRGSQA
WDR45    CPSLEKQLLVFPGHKC-GSLQLVDLASTKPGTSSAPFTINAHQSDIACVSLNQPGTVVASASQKGTLIRLFDTQSKEKLVELRRGTDP
WIPI1    YVTISSLVFSMDSQFLCASSNTETVHIFKLEQVTNSRPEEPSTWSGYMGKMFMAATNYLPTQVSDMMHQDRAFATARLNFSGQRNICT
WIPI2    CVSICSLAFSMDGMFLSASSNTETVHIFKLETVKEKPPEEPTTWTGYFGKVLMASTSYLPSQVTEMFNQGRAFATVRLPFCGHKNICS
WDR45B   A-NIYCINFNQDASLICVSSDHGTVHIFAAEDPKRNKQSSLA-SA----SF---LPKYFSSK--------WSFSKFQVP-SGSPCICA
WDR45    A-TLYCINFSHDSSFLCASSDKGTVHIFALKDTRLNRRSALA-RVGKVGPM---IGQYVDSQ--------WSLASFTVP-AESACICA
WIPI1    LSTI--QKLPRLLVASSSGHLYMYNLDPQDGGECVLIKTHSLLGSGTTEENKEND---LRPSLPQSYAATVARPS-ASSASTVPGYSE
WIPI2    LATI--QKIPRLLVGAADGYLYMYNLDPQEGGECALMKQHRLDGSLETTNEILDSASHDCPLVTQTYGAAAGKGTYVPSSPTRLAYTD
WDR45B   FGTEP----NAVIAICADGSYYKFLFNPK--GECIRDVYAQFLE---MTDDKL----------------------------------
WDR45    FGRNTSKNVNSVIAICVDGTFHKYVFTPD--GNCNREAFDVYLD---ICDDDDF---------------------------------
WIPI1    DGGALRGEVIPEHEFATGPVCLDDENEFPPIILCRNQKGKTKQS
WIPI2    DLGAVGGACLEDE---ASALRLDEDSEHPPMILRTD--------
WDR45B   ----------------------------------------
WDR45    ----------------------------------------
```

Figure S1