

Supplemental Table 1. Summary of the Overlaps in the Differentially Regulated Genes by the *cop1* Mutations and the White Light

Section A: Number and percentage of white light up-regulated genes overlap with those regulated by the three *cop1* mutations in darkness. In this study, 1065 genes were up-regulated in white light in wild type with 2-fold cut-off. Three cut-off values for the differential expression ratios were used for the *cop1* mutations.

(i) Similarly regulated (percentage in bracket)

	<u><i>cop1-1</i></u>	<u><i>cop1-4</i></u>	<u><i>cop1-6</i></u>	<u>N-282</u>
With 2-fold cut-off	566 (53%)	611 (57.4%)	557 (52.3%)	512 (48.1%)
With 1.5-fold cut-off	807 (75.8%)	819 (76.9%)	773 (72.6%)	758 (71.2%)
With 1.2-fold cut-off	936 (87.9%)	938 (88.1%)	915 (85.9%)	906 (85.1%)

(ii) Oppositely regulated (percentage in bracket)

	<u><i>cop1-1</i></u>	<u><i>cop1-4</i></u>	<u><i>cop1-6</i></u>	<u>N-282</u>
With 2-fold cut-off	8 (0.75%)	10 (0.94%)	4 (0.38%)	4 (0.38%)
With 1.5-fold cut-off	19 (1.78%)	17 (1.60%)	16 (1.50%)	12 (1.13%)
With 1.2-fold cut-off	31 (2.9%)	39 (3.7%)	32 (3.00%)	31 (2.9%)

Section B: Number and percentage of white light down-regulated genes overlap with those regulated by the three *cop1* mutations in darkness. In this study, 774 genes were up-regulated in white light in wild type with 2-fold cut-off. Three cut-off values for the differential expression ratios were used for the *cop1* mutations.

(iii) Similarly regulated (percentage in bracket)

	<u><i>cop1-1</i></u>	<u><i>cop1-4</i></u>	<u><i>cop1-6</i></u>	<u>N-282</u>
With 2-fold cut-off	432 ((55.8%)	368 (47.5%)	278 (40%)	268 (34.6%)
With 1.5-fold cut-off	603 (77.9%)	633 (81.8%)	515 (66.5%)	505 (65.2%)
With 1.2-fold cut-off	691 (89.3%)	720 (93.0%)	654 (84.5)	644 (83.2%)

(iv) Oppositely regulated (percentage in bracket)

	<u><i>cop1-1</i></u>	<u><i>cop1-4</i></u>	<u><i>cop1-6</i></u>	<u>N-282</u>
With 2-fold cut-off	10 (1.29%)	2 (0.26%)	14 (1.81%)	7 (0.90%)
With 1.5-fold cut-off	18 (2.33%)	6 (0.78%)	25 (3.33%)	17 (2.20%)
With 1.2-fold cut-off	28 (3.61%)	16 (1.29%)	44 (5.68%)	29 (3.75%)

Section C: Number and percentage of white light total (up and down) regulated genes overlap with those regulated by the three *cop1* mutations in darkness. Together, 1839 genes were up or down-regulated in white light with 2-fold cut-off. Three cut-off values for the differential expression ratios were used for the *cop1* mutations.

(v) Similarly regulated (percentage in bracket)

	<u><i>cop1-1</i></u>	<u><i>cop1-4</i></u>	<u><i>cop1-6</i></u>	<u>N-282</u>
With 2-fold cut-off	998 (54.3%)	979 (53.2%)	835 (45.4%)	780 (42.4%)
With 1.5-fold cut-off	1410 (76.7%)	1452 (79.0%)	1288 (70.0%)	1263 (68.7%)

With 1.2-fold cut-off 1627 (88.5%) 1658 (90.2%) 1569 (85.3%) 1550 (84.3%)

(vi) Oppositely regulated (percentage in bracket)

	<u><i>cop1-1</i></u>	<u><i>cop1-4</i></u>	<u><i>cop1-6</i></u>	<u>N-282</u>
With 2-fold cut-off	18 (0.98%)	12 (0.65%)	18 (0.98%)	11 (0.60%)
With 2-fold cut-off	37 (2.0%)	23 (1.25%)	41 (2.23%)	29 (1.58%)
With 2-fold cut-off	59 (3.21%)	55 (2.99%)	76 (4.13%)	60 (3.26%)

Section D: Number and percentage of differentially regulated genes that overlap among the three *cop1* mutations in darkness. The 2-fold cut-off was used to select those genes regulated by each of the three *cop1* mutations.

(vii) Similarly regulated (percentage in bracket)

	<u><i>cop1-1</i></u>	<u><i>cop1-4</i></u>	<u><i>cop1-6</i></u>	<u>N-282</u>
<i>cop1-1</i>	1321 (100%)			
<i>cop1-4</i>	1176 (70.7%)	1176 (100%)		
<i>cop1-6</i>	1162 (62.5%)	709 (61.0%)	1162 (100%)	
N282	673 (69.1%)	639 (65.7%)	666 (85.3%)	973 (68.4%)

(viii) Oppositely regulated (percentage in bracket)

	<u><i>cop1-1</i></u>	<u><i>cop1-4</i></u>	<u><i>cop1-6</i></u>	<u>N-282</u>
<i>cop1-1</i>	0 (0%)			
<i>cop1-4</i>	8 (0.68%)	0 (0%)		
<i>cop1-6</i>	13 (1.1%)	13 (1.1%)	0 (0%)	
N282	13 (1.34%)	18 (1.85%)	2 (0.21%)	0 (0%)

Section E: Number and percentage of differentially regulated genes by the three different qualities and white light in wild type. The 2-fold cut-off was used to select those genes regulated by each of the light quality.

(ix) Similarly regulated (percentage in bracket)

	<u>White light</u>	<u>Blue light</u>	<u>Red light</u>	<u>Fare red light</u>
White light	1839 (100%)			
Blue light	713 (78.2%)	911 (100%)		
Red light	452 (67.4%)	467 (69.6%)	671 (100%)	
Far red light	793 (73.3%)	498 (46.0%)	335 (31.0%)	1082 (100%)

(x) Oppositely regulated (percentage in bracket)

	<u>White light</u>	<u>Blue light</u>	<u>Red light</u>	<u>Fare red light</u>
White light	0 (0%)			
Blue light	23 (2.52%)	0 (0%)		
Red light	26 (3.87%)	16 (3.38%)	0 (0%)	
Far red light	20 (1.85%)	15 (1.39%)	16 (1.48%)	0 (0%)