

Genome-wide identification, characterization and expression analysis of the NAC transcription factor in *Chenopodium quinoa*

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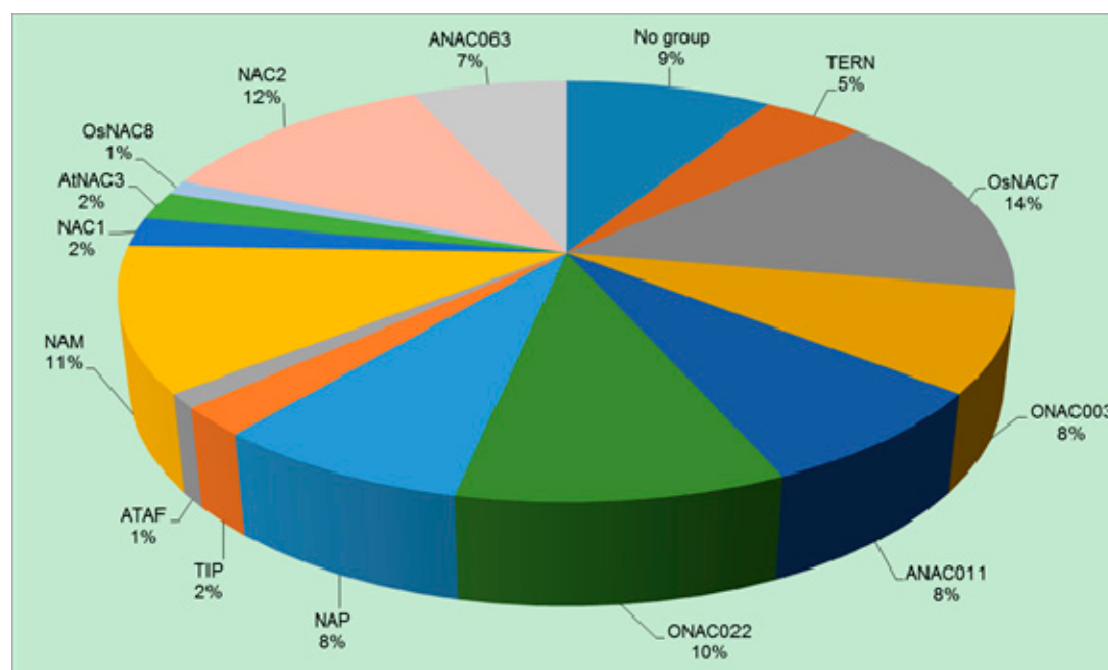


Figure S1. The percentage of members in each NAC subfamily in quinoa.

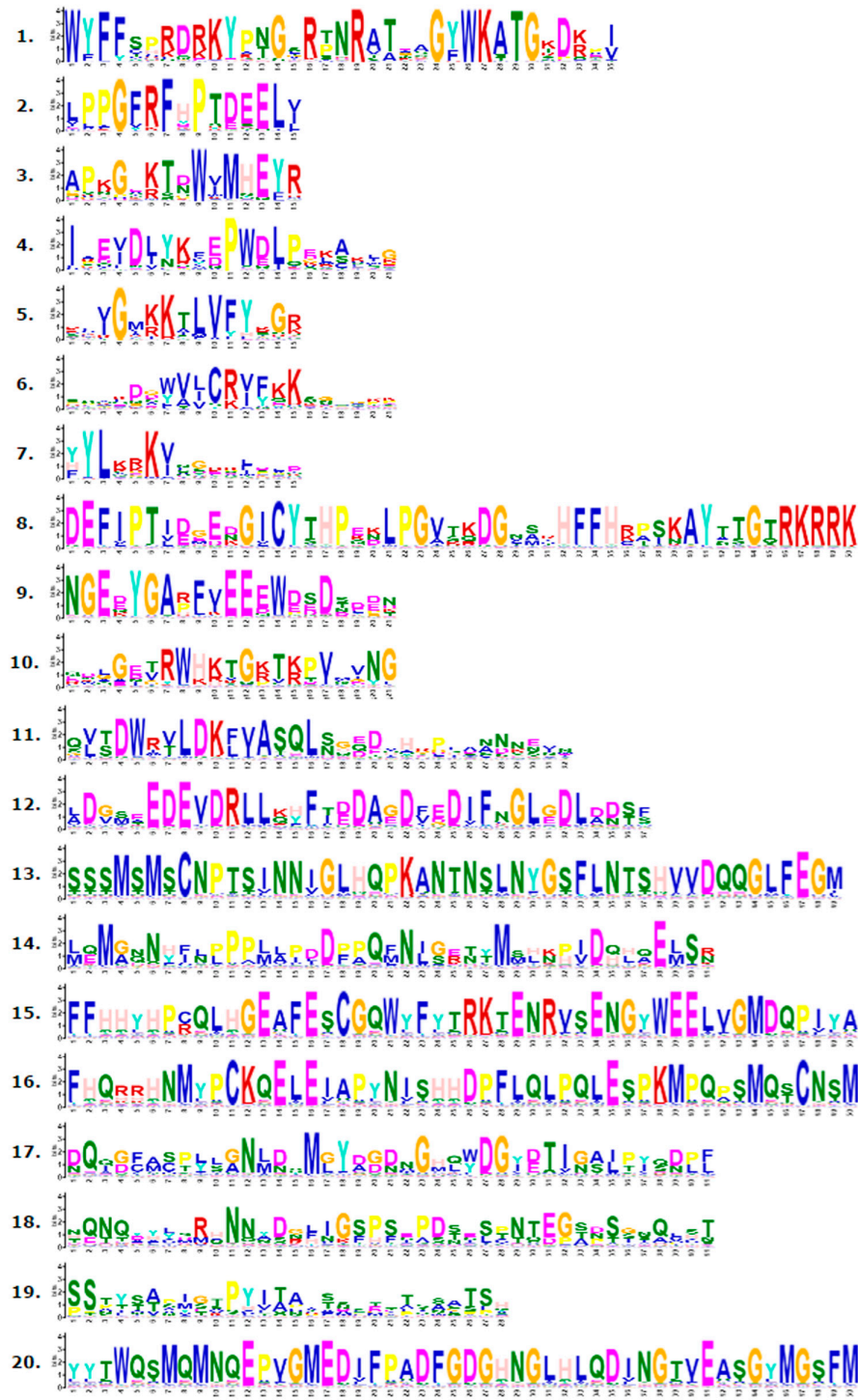


Figure S2. Multilevel consensus sequence and their logo of CqNAC proteins as predicted by MEME web server.

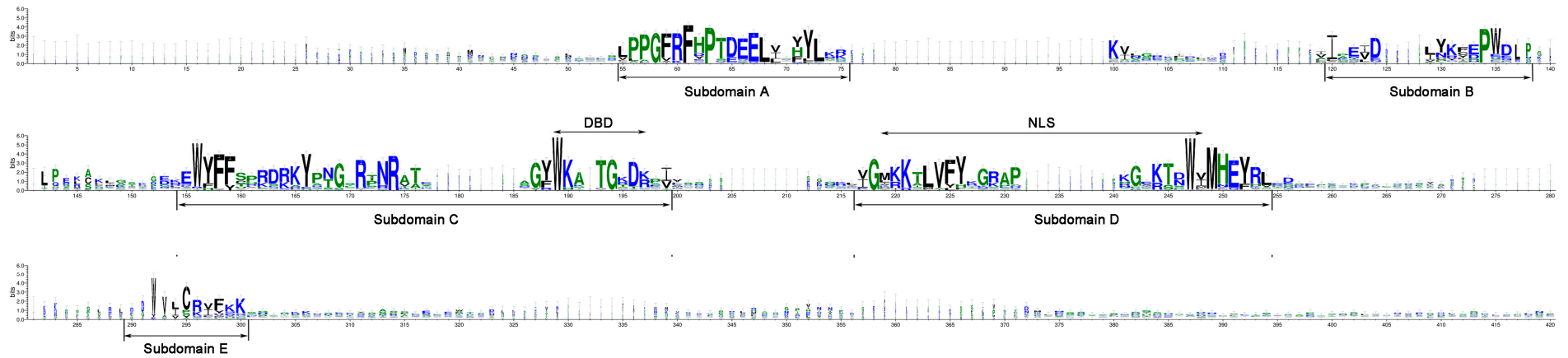


Figure S3. Conserved domain analysis of the CqNACs using the WebLogo program. The height of the letter designating the amino acid residue at each position represents the degree of conservation. The numbers on the x-axis represent the sequence positions in the corresponding conserved domains. The y-axis represents the information content measured in bits.

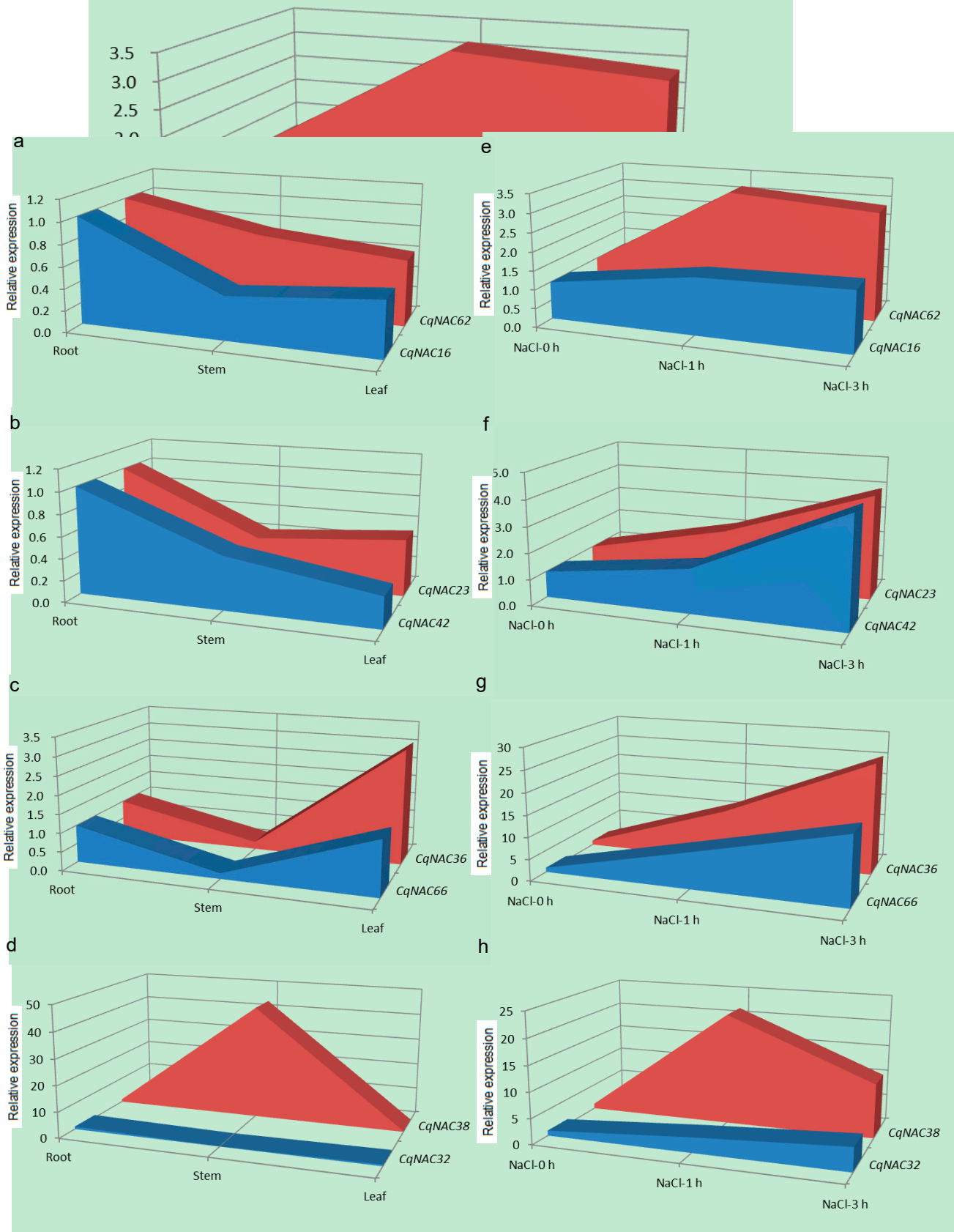


Figure S4. Expression patterns of some duplicated *CqNAC* genes in different organs (a–d) and in root under salt stress treatment (e–h).

Table 1. The structural analysis of CqNACs identified in this study.

Name	Locus name	Protein length (AA)	α -helix	Extended strand	β -turn	Random coil	Molecular weight	Theoretical pI
CqNAC1	AUR62000492-RA	327	28.75%	12.84%	4.89%	53.52%	36465.01	5.21
CqNAC2	AUR62000493-RA	329	28.27%	11.85%	4.26%	55.62%	36054.67	5.15
CqNAC3	AUR62000898-RA	418	12.68%	29.19%	8.85%	49.28%	46498.08	6.47
CqNAC4	AUR62001365-RA	307	34.20%	15.64%	3.26%	46.91%	35908.02	5.42
CqNAC5	AUR62001522-RA	268	21.64%	16.79%	3.73%	57.84%	30289.73	8.74
CqNAC6	AUR62002191-RA	249	19.28%	17.67%	6.02%	57.03%	28433.49	6.07
CqNAC7	AUR62002922-RA	339	22.12%	17.70%	5.31%	54.87%	38180.40	4.88
CqNAC8	AUR62003400-RA	573	27.92%	11.52%	4.01%	56.54%	65093.66	5.67
CqNAC9	AUR62003583-RA	224	27.23%	16.07%	5.80%	50.89%	26274.26	5.27
CqNAC10	AUR62004554-RA	334	24.25%	13.47%	5.69%	56.59%	38417.87	6.47
CqNAC11	AUR62004572-RA	388	24.23%	15.98%	5.41%	54.38%	42975.83	5.18
CqNAC12	AUR62004648-RA	334	20.66%	15.27%	4.19%	59.88%	38928.20	6.34
CqNAC13	AUR62004778-RA	576	27.08%	11.98%	4.34%	56.60%	65290.07	5.84
CqNAC14	AUR62005772-RA	446	23.77%	12.11%	6.95%	57.17%	50303.27	5.27
CqNAC15	AUR62005821-RA	288	35.76%	11.11%	4.17%	48.96%	32911.82	5.52
CqNAC16	AUR62005966-RA	631	26.31%	17.12%	5.71%	50.87%	70214.52	5.11
CqNAC17	AUR62006223-RA	276	15.22%	18.84%	3.62%	62.32%	31807.15	8.44
CqNAC18	AUR62006407-RA	372	25.27%	13.17%	3.49%	58.06%	40436.27	4.64
CqNAC19	AUR62006836-RA	315	34.29%	15.87%	4.13%	45.71%	34978.40	4.79
CqNAC20	AUR62006837-RA	319	22.57%	13.79%	5.02%	58.62%	35107.58	4.97
CqNAC21	AUR62006885-RA	329	20.06%	11.25%	5.17%	63.53%	37188.40	8.05

CqNAC22	AUR62007071-RA	279	20.07%	14.70%	5.38%	59.86%	32176.90	6.08
CqNAC23	AUR62007247-RA	327	10.40%	12.23%	3.98%	73.39%	37313.61	5.03
CqNAC24	AUR62007469-RA	370	20.27%	14.32%	2.97%	62.43%	42954.10	6.34
CqNAC25	AUR62008438-RA	364	20.33%	11.26%	4.40%	64.01%	40914.70	6.32
CqNAC26	AUR62010080-RA	352	23.58%	9.66%	4.26%	62.50%	40279.01	5.35
CqNAC27	AUR62011638-RA	414	20.53%	18.12%	11.59%	49.76%	46988.95	4.89
CqNAC28	AUR62011853-RA	145	16.55%	25.52%	9.66%	48.28%	16945.51	9.25
CqNAC29	AUR62012948-RA	146	10.27%	23.97%	11.64%	54.11%	17407.86	9.61
CqNAC30	AUR62013074-RA	352	21.59%	9.66%	5.11%	63.64%	40140.84	5.35
CqNAC31	AUR62013541-RA	346	24.57%	13.01%	3.47%	58.96%	**	**
CqNAC32	AUR62014768-RA	343	9.91%	18.37%	3.50%	68.22%	38527.15	8.34
CqNAC33	AUR62014879-RA	252	9.52%	22.22%	8.33%	59.92%	28592.20	8.35
CqNAC34	AUR62015520-RA	248	19.76%	20.16%	4.44%	55.65%	28310.33	5.91
CqNAC35	AUR62015629-RA	302	20.20%	17.22%	3.97%	58.61%	33805.23	9.02
CqNAC36	AUR62015630-RA	278	22.66%	15.11%	3.96%	58.27%	30847.92	8.97
CqNAC37	AUR62016213-RA	389	20.57%	17.48%	10.28%	51.67%	44124.93	5.19
CqNAC38	AUR62016954-RA	327	15.29%	18.65%	2.14%	63.91%	36484.83	8.68
CqNAC39	AUR62017681-RA	418	16.27%	18.90%	4.55%	60.29%	46777.01	8.28
CqNAC40	AUR62017896-RA	224	25.45%	14.73%	4.91%	54.91%	26482.56	5.10
CqNAC41	AUR62018102-RA	333	12.91%	14.71%	3.60%	68.77%	38348.33	5.25
CqNAC42	AUR62018752-RA	325	9.85%	12.62%	3.08%	74.46%	37194.42	5.41
CqNAC43	AUR62019477-RA	400	15.25%	25.75%	7.50%	51.50%	**	**
CqNAC44	AUR62019936-RA	341	24.05%	12.02%	4.11%	59.82%	39174.79	6.72
CqNAC45	AUR62020251-RA	430	28.37%	12.09%	5.58%	53.95%	48339.23	9.30

CqNAC46	AUR62020261-RA	258	20.54%	12.40%	3.10%	63.95%	29053.47	8.57
CqNAC47	AUR62020634-RA	297	18.52%	14.14%	3.37%	63.97%	33732.06	8.90
CqNAC48	AUR62021621-RA	198	27.27%	20.20%	7.58%	44.95%	22824.18	9.30
CqNAC49	AUR62021652-RA	361	18.84%	13.02%	4.16%	63.99%	40521.21	6.32
CqNAC50	AUR62022486-RA	386	32.64%	16.32%	4.40%	46.63%	43144.30	7.13
CqNAC51	AUR62022669-RA	250	20.00%	19.20%	7.60%	53.20%	28785.28	8.67
CqNAC52	AUR62022685-RA	374	18.72%	17.11%	5.08%	59.09%	41416.33	5.17
CqNAC53	AUR62022690-RA	571	25.04%	19.79%	6.13%	49.04%	64944.45	6.49
CqNAC54	AUR62024101-RA	248	25.04%	21.37%	8.47%	44.76%	28076.95	9.10
CqNAC55	AUR62024698-RA	149	16.11%	24.16%	8.72%	51.01%	17465.06	9.06
CqNAC56	AUR62025580-RA	342	12.87%	25.15%	9.36%	52.63%	39460.28	5.56
CqNAC57	AUR62025636-RA	354	30.79%	17.23%	5.08%	46.89%	41347.03	5.22
CqNAC58	AUR62026741-RA	283	19.79%	18.37%	4.95%	56.89%	32508.34	6.90
CqNAC59	AUR62026904-RA	344	16.86%	15.70%	4.07%	63.37%	39416.95	6.46
CqNAC60	AUR62027152-RA	222	17.57%	22.97%	4.95%	54.50%	25666.26	8.37
CqNAC61	AUR62027390-RA	168	17.26%	21.43%	5.95%	55.36%	19591.24	7.02
CqNAC62	AUR62028103-RA	630	28.41%	13.17%	2.86%	55.56%	70372.71	5.19
CqNAC63	AUR62029057-RA	524	27.67%	11.45%	3.05%	57.82%	58769.41	4.96
CqNAC64	AUR62029330-RA	328	17.99%	16.77%	4.27%	60.98%	36617.18	8.80
CqNAC65	AUR62029331-RA	327	19.57%	17.13%	2.45%	60.86%	36697.29	8.23
CqNAC66	AUR62029344-RA	298	17.45%	17.45%	4.70%	60.40%	33304.44	9.31
CqNAC67	AUR62029755-RA	368	21.74%	14.13%	4.35%	59.78%	40136.91	4.66
CqNAC68	AUR62031086-RA	251	13.55%	19.52%	6.37%	60.56%	28513.14	7.92
CqNAC69	AUR62031305-RA	158	18.99%	13.92%	3.80%	63.29%	18487.95	7.06

CqNAC70	AUR62032816-RA	272	23.16%	16.18%	3.31%	57.35%	30891.77	8.65
CqNAC71	AUR62033276-RA	319	27.59%	16.30%	4.70%	51.41%	35952.06	6.83
CqNAC72	AUR62033952-RA	530	29.62%	12.08%	3.02%	55.28%	59469.49	5.05
CqNAC73	AUR62034400-RA	385	20.00%	8.05%	3.38%	68.57%	43291.89	8.27
CqNAC74	AUR62034435-RA	341	15.54%	14.37%	3.52%	66.57%	39116.19	5.19
CqNAC75	AUR62035283-RA	365	24.66%	16.44%	4.93%	53.97%	4101.73	5.02
CqNAC76	AUR62035514-RA	153	16.34%	24.84%	5.23%	53.59%	17543.23	9.51
CqNAC77	AUR62036158-RA	324	16.05%	19.75%	5.25%	58.95%	35672.96	8.15
CqNAC78	AUR62036626-RA	279	24.73%	18.28%	3.94%	53.05%	31455.38	6.51
CqNAC79	AUR62036991-RA	151	14.57%	20.53%	4.64%	60.26%	17509.63	8.64
CqNAC80	AUR62037478-RA	241	16.18%	20.75%	7.05%	56.02%	27617.77	5.43
CqNAC81	AUR62038748-RA	294	14.29%	10.88%	3.74%	71.09%	33605.95	8.75
CqNAC82	AUR62039815-RA	385	20.26%	6.23%	3.38%	70.13%	43123.80	8.28
CqNAC83	AUR62039927-RA	370	25.41%	13.24%	2.43%	58.92%	42952.16	6.24
CqNAC84	AUR62040120-RA	390	24.10%	15.13%	7.44%	53.33%	43352.17	9.15
CqNAC85	AUR62040889-RA	213	26.76%	20.19%	5.16%	47.89%	24342.91	9.15
CqNAC86	AUR62041525-RA	550	20.91%	17.27%	5.64%	56.18%	61100.19	4.60
CqNAC87	AUR62041539-RA	556	23.20%	16.37%	5.40%	55.04%	61749.78	4.60
CqNAC88	AUR62043491-RA	393	29.52%	9.67%	5.09%	55.73%	43868.48	5.37
CqNAC89	AUR62043497-RA	155	10.32%	29.68%	4.52%	55.48%	17813.61	9.51
CqNAC90	AUR62044373-RA	454	25.77%	11.23%	3.96%	59.03%	51258.61	5.15

Table S2: The classification and gene structures of *NACs* in quinoa.

Name	Subfamily	Extron number	Intron number
<i>CqNAC1</i>	NAC2	2	1
<i>CqNAC2</i>	NAC2	1	0
<i>CqNAC3</i>	ANAC063	3	2
<i>CqNAC4</i>	ANAC063	3	2
<i>CqNAC5</i>	TERN	4	3
<i>CqNAC6</i>	OsNAC7	4	3
<i>CqNAC7</i>	ONAC003	5	4
<i>CqNAC8</i>	ANAC011	6	5
<i>CqNAC9</i>	No group	3	2
<i>CqNAC10</i>	OsNAC7	2	1
<i>CqNAC11</i>	ONAC003	5	4
<i>CqNAC12</i>	OsNAC7	3	2
<i>CqNAC13</i>	ANAC011	6	5
<i>CqNAC14</i>	ONAC022	3	2
<i>CqNAC15</i>	NAP	5	4
<i>CqNAC16</i>	TIP	5	4
<i>CqNAC17</i>	TERN	3	2
<i>CqNAC18</i>	NAC2	1	0
<i>CqNAC19</i>	NAC2	2	1
<i>CqNAC20</i>	NAC2	2	1
<i>CqNAC21</i>	ATAF	4	3
<i>CqNAC22</i>	OsNAC7	3	2
<i>CqNAC23</i>	ANAC011	4	3
<i>CqNAC24</i>	OsNAC7	3	2
<i>CqNAC25</i>	NAM	3	2
<i>CqNAC26</i>	ANAC011	4	3
<i>CqNAC27</i>	ANAC063	3	2
<i>CqNAC28</i>	NAC1	2	1
<i>CqNAC29</i>	ONAC022	2	1
<i>CqNAC30</i>	ANAC011	4	3
<i>CqNAC31</i>	OsNAC7	3	2
<i>CqNAC32</i>	NAP	3	2
<i>CqNAC33</i>	ONAC003	2	1
<i>CqNAC34</i>	OsNAC7	4	3
<i>CqNAC35</i>	NAP	3	2
<i>CqNAC36</i>	AtNAC3	4	3
<i>CqNAC37</i>	ANAC063	3	2

<i>CqNAC38</i>	NAP	3	2
<i>CqNAC39</i>	OsNAC7	4	3
<i>CqNAC40</i>	No group	3	2
<i>CqNAC41</i>	NAM	3	2
<i>CqNAC42</i>	ANAC011	4	3
<i>CqNAC43</i>	NAM	3	2
<i>CqNAC44</i>	OsNAC7	3	2
<i>CqNAC45</i>	OsNAC8	5	4
<i>CqNAC46</i>	TERN	3	2
<i>CqNAC47</i>	NAM	4	3
<i>CqNAC48</i>	NAM	4	3
<i>CqNAC49</i>	NAM	3	2
<i>CqNAC50</i>	No group	6	5
<i>CqNAC51</i>	OsNAC7	3	2
<i>CqNAC52</i>	ONAC003	5	4
<i>CqNAC53</i>	OsNAC7	5	4
<i>CqNAC54</i>	NAM	4	3
<i>CqNAC55</i>	NAC1	3	2
<i>CqNAC56</i>	ANAC063	3	2
<i>CqNAC57</i>	ANAC063	3	2
<i>CqNAC58</i>	OsNAC7	4	3
<i>CqNAC59</i>	ONAC022	3	2
<i>CqNAC60</i>	ONAC022	3	2
<i>CqNAC61</i>	No group	2	1
<i>CqNAC62</i>	TIP	5	4
<i>CqNAC63</i>	NAC2	4	3
<i>CqNAC64</i>	NAP	4	3
<i>CqNAC65</i>	NAP	4	3
<i>CqNAC66</i>	AtNAC3	4	3
<i>CqNAC67</i>	NAC2	1	0
<i>CqNAC68</i>	ONAC003	2	1
<i>CqNAC69</i>	No group	2	1
<i>CqNAC70</i>	NAP	3	2
<i>CqNAC71</i>	ONAC003	5	4
<i>CqNAC72</i>	NAC2	5	4
<i>CqNAC73</i>	ONAC022	3	2
<i>CqNAC74</i>	NAM	3	2
<i>CqNAC75</i>	ONAC003	6	5
<i>CqNAC76</i>	No group	2	1
<i>CqNAC77</i>	NAM	5	4

<i>CqNAC78</i>	No group	3	2
<i>CqNAC79</i>	TERN	2	1
<i>CqNAC80</i>	ANAC011	3	2
<i>CqNAC81</i>	NAM	4	3
<i>CqNAC82</i>	ONAC022	3	2
<i>CqNAC83</i>	OsNAC7	3	2
<i>CqNAC84</i>	ONAC022	5	4
<i>CqNAC85</i>	ONAC022	3	2
<i>CqNAC86</i>	NAC2	6	5
<i>CqNAC87</i>	NAC2	6	5
<i>CqNAC88</i>	NAC2	4	3
<i>CqNAC89</i>	No group	2	1
<i>CqNAC90</i>	ONAC022	3	2

Table S3: Subcellular localization of NAC proteins in quinoa.

Name	PSORT result	Cello result
CqNAC1	Nuclear protein	Nuclear protein
CqNAC2	Nuclear protein	Chloroplast protein
CqNAC3	Nuclear protein	Nuclear protein
CqNAC4	Nuclear protein	Nuclear protein
CqNAC5	Nuclear protein	Nuclear protein
CqNAC6	Peroxisomal protein	Nuclear protein
CqNAC7	Nuclear protein	Nuclear protein
CqNAC8	Nuclear protein	Nuclear protein
CqNAC9	Nuclear protein	Nuclear protein
CqNAC10	Nuclear protein	Nuclear protein
CqNAC11	Nuclear protein	Nuclear protein
CqNAC12	Nuclear protein	Nuclear protein
CqNAC13	Nuclear protein	Nuclear protein
CqNAC14	Nuclear protein	Nuclear protein
CqNAC15	Nuclear protein	Nuclear protein
CqNAC16	Nuclear protein	Nuclear protein
CqNAC17	Nuclear protein	Nuclear protein
CqNAC18	Nuclear protein	Nuclear protein
CqNAC19	Nuclear protein	Nuclear protein
CqNAC20	Nuclear protein	Nuclear protein
CqNAC21	Chloroplast protein	Nuclear protein
CqNAC22	Peroxisomal protein	Nuclear protein
CqNAC23	Nuclear protein	Nuclear protein
CqNAC24	Nuclear protein	Nuclear protein
CqNAC25	Nuclear protein	Nuclear protein
CqNAC26	Chloroplast protein	Nuclear protein
CqNAC27	Nuclear protein	Nuclear protein
CqNAC28	Peroxisomal protein	Cytoplasmic protein
CqNAC29	Nuclear protein	Cytoplasmic protein
CqNAC30	Nuclear protein	Nuclear protein
CqNAC31	Peroxisomal protein	Nuclear protein
CqNAC32	Nuclear protein	Nuclear protein
CqNAC33	Nuclear protein	Nuclear protein
CqNAC34	Peroxisomal protein	Nuclear protein
CqNAC35	Nuclear protein	Nuclear protein
CqNAC36	Nuclear protein	Nuclear protein
CqNAC37	Nuclear protein	Nuclear protein
CqNAC38	Nuclear protein	Nuclear protein
CqNAC39	Nuclear protein	Nuclear protein
CqNAC40	Nuclear protein	Nuclear protein

CqNAC41	Nuclear protein	Cytoplasmic protein
CqNAC42	Nuclear protein	Nuclear protein
CqNAC43	Nuclear protein	Nuclear protein
CqNAC44	Nuclear protein	Nuclear protein
CqNAC45	Nuclear protein	Nuclear protein
CqNAC46	Peroxisomal protein	Nuclear protein
CqNAC47	Nuclear protein	Nuclear protein
CqNAC48	Cytoplasmic protein	Cytoplasmic protein
CqNAC49	Nuclear protein	Nuclear protein
CqNAC50	Nuclear protein	PlasmaMembrane protein
CqNAC51	Nuclear protein	Nuclear protein
CqNAC52	Nuclear protein	Nuclear protein
CqNAC53	Extracellular protein	Nuclear protein
CqNAC54	Nuclear protein	Cytoplasmic protein
CqNAC55	Peroxisomal protein	Cytoplasmic protein
CqNAC56	Cytoplasmic protein	Nuclear protein
CqNAC57	Nuclear protein	Nuclear protein
CqNAC58	Peroxisomal protein	Nuclear protein
CqNAC59	Nuclear protein	Nuclear protein
CqNAC60	Cytoplasmic protein	Nuclear protein
CqNAC61	Nuclear protein	Nuclear protein
CqNAC62	Cytoplasmic protein	Nuclear protein
CqNAC63	Goloi protein	Nuclear protein
CqNAC64	Nuclear protein	Nuclear protein
CqNAC65	Nuclear protein	Nuclear protein
CqNAC66	Nuclear protein	Nuclear protein
CqNAC67	Cytoplasmic protein	Chloroplast protein
CqNAC68	Nuclear protein	Nuclear protein
CqNAC69	Nuclear protein	Nuclear protein
CqNAC70	Nuclear protein	Nuclear protein
CqNAC71	Nuclear protein	Nuclear protein
CqNAC72	Goloi protein	Nuclear protein
CqNAC73	Nuclear protein	Nuclear protein
CqNAC74	Nuclear protein	Cytoplasmic protein
CqNAC75	Nuclear protein	Nuclear protein
CqNAC76	Nuclear protein	Cytoplasmic protein
CqNAC77	Nuclear protein	Nuclear protein
CqNAC78	Chloroplast protein	Nuclear protein
CqNAC79	Nuclear protein	Nuclear protein
CqNAC80	Nuclear protein	Nuclear protein
CqNAC81	Nuclear protein	Nuclear protein
CqNAC82	Nuclear protein	Nuclear protein

CqNAC83	Nuclear protein	Nuclear protein
CqNAC84	Nuclear protein	Nuclear protein
CqNAC85	Cytoplasmic protein	Nuclear protein
CqNAC86	Chloroplast protein	Cytoplasmic protein
CqNAC87	Chloroplast protein	Vacuole protein
CqNAC88	Chloroplast protein	Nuclear protein
CqNAC89	Nuclear protein	Cytoplasmic protein
CqNAC90	Nuclear protein	Nuclear protein

Table S4: Genomic location of NACs in quinoa.

Name	Chromosome Name	Gene Start (bp)	Gene End (bp)
<i>CqNAC1</i>	C_Quinoa_Scaffold_2088	5104189	5105235
<i>CqNAC2</i>	C_Quinoa_Scaffold_2088	5126097	5127086
<i>CqNAC3</i>	C_Quinoa_Scaffold_2088	10436292	10439135
<i>CqNAC4</i>	C_Quinoa_Scaffold_2716	3667151	3670126
<i>CqNAC5</i>	C_Quinoa_Scaffold_2716	5750306	5754005
<i>CqNAC6</i>	C_Quinoa_Scaffold_4480	3338123	3340057
<i>CqNAC7</i>	C_Quinoa_Scaffold_1000	16136114	16139389
<i>CqNAC8</i>	C_Quinoa_Scaffold_2370	206197	210326
<i>CqNAC9</i>	C_Quinoa_Scaffold_2370	2346420	2348358
<i>CqNAC10</i>	C_Quinoa_Scaffold_4250	4675233	4677254
<i>CqNAC11</i>	C_Quinoa_Scaffold_4250	4929761	4932822
<i>CqNAC12</i>	C_Quinoa_Scaffold_4250	5835845	5837591
<i>CqNAC13</i>	C_Quinoa_Scaffold_3820	2201216	2205271
<i>CqNAC14</i>	C_Quinoa_Scaffold_1214	7730160	7733025
<i>CqNAC15</i>	C_Quinoa_Scaffold_1214	8710235	8716062
<i>CqNAC16</i>	C_Quinoa_Scaffold_1001	780823	785367
<i>CqNAC17</i>	C_Quinoa_Scaffold_1001	4184394	4188756
<i>CqNAC18</i>	C_Quinoa_Scaffold_1001	7434695	7435813
<i>CqNAC19</i>	C_Quinoa_Scaffold_3429	5501991	5503001
<i>CqNAC20</i>	C_Quinoa_Scaffold_3429	5506671	5507714
<i>CqNAC21</i>	C_Quinoa_Scaffold_3429	6081924	6086002
<i>CqNAC22</i>	C_Quinoa_Scaffold_1971	870150	871578
<i>CqNAC23</i>	C_Quinoa_Scaffold_1971	3145691	3147716
<i>CqNAC24</i>	C_Quinoa_Scaffold_1971	5582799	5584443
<i>CqNAC25</i>	C_Quinoa_Scaffold_3422	4681091	4683124
<i>CqNAC26</i>	C_Quinoa_Scaffold_1257	1424158	1428569
<i>CqNAC27</i>	C_Quinoa_Scaffold_3333	4561449	4562989
<i>CqNAC28</i>	C_Quinoa_Scaffold_2008	1858490	1862276
<i>CqNAC29</i>	C_Quinoa_Scaffold_1040	720134	720757
<i>CqNAC30</i>	C_Quinoa_Scaffold_1040	1973115	1977583
<i>CqNAC31</i>	C_Quinoa_Scaffold_1611	4650646	4653648
<i>CqNAC32</i>	C_Quinoa_Scaffold_2947	2498542	2500028
<i>CqNAC33</i>	C_Quinoa_Scaffold_2947	4419915	4428541
<i>CqNAC34</i>	C_Quinoa_Scaffold_2751	7542231	7544163
<i>CqNAC35</i>	C_Quinoa_Scaffold_1529	902046	903275
<i>CqNAC36</i>	C_Quinoa_Scaffold_1529	916768	917919
<i>CqNAC37</i>	C_Quinoa_Scaffold_3256	2959547	2961121
<i>CqNAC38</i>	C_Quinoa_Scaffold_3787	1019205	1020764

<i>CqNAC39</i>	C_Quinoa_Scaffold_3458	2937169	2943353
<i>CqNAC40</i>	C_Quinoa_Scaffold_3086	1470978	1472880
<i>CqNAC41</i>	C_Quinoa_Scaffold_2048	3674508	3675854
<i>CqNAC42</i>	C_Quinoa_Scaffold_1817	1668340	1670371
<i>CqNAC43</i>	C_Quinoa_Scaffold_2127	1427472	1429718
<i>CqNAC44</i>	C_Quinoa_Scaffold_1480	2644016	2645684
<i>CqNAC45</i>	C_Quinoa_Scaffold_2465	2584216	2586669
<i>CqNAC46</i>	C_Quinoa_Scaffold_2465	2723997	2725875
<i>CqNAC47</i>	C_Quinoa_Scaffold_3966	1391082	1397450
<i>CqNAC48</i>	C_Quinoa_Scaffold_1675	1474377	1481074
<i>CqNAC49</i>	C_Quinoa_Scaffold_1675	1933365	1935019
<i>CqNAC50</i>	C_Quinoa_Scaffold_3163	7127974	7137645
<i>CqNAC51</i>	C_Quinoa_Scaffold_1870	1636666	1638400
<i>CqNAC52</i>	C_Quinoa_Scaffold_1870	1836151	1839245
<i>CqNAC53</i>	C_Quinoa_Scaffold_1870	1883018	1891940
<i>CqNAC54</i>	C_Quinoa_Scaffold_4119	171296	172432
<i>CqNAC55</i>	C_Quinoa_Scaffold_1992	1842893	1846940
<i>CqNAC56</i>	C_Quinoa_Scaffold_1677	29928	31688
<i>CqNAC57</i>	C_Quinoa_Scaffold_1677	723492	725417
<i>CqNAC58</i>	C_Quinoa_Scaffold_2081	4392587	4400244
<i>CqNAC59</i>	C_Quinoa_Scaffold_2185	2906263	2914672
<i>CqNAC60</i>	C_Quinoa_Scaffold_2314	1809369	1810776
<i>CqNAC61</i>	C_Quinoa_Scaffold_4446	2447430	2449183
<i>CqNAC62</i>	C_Quinoa_Scaffold_2933	546240	550841
<i>CqNAC63</i>	C_Quinoa_Scaffold_2412	3029866	3035495
<i>CqNAC64</i>	C_Quinoa_Scaffold_2939	1713207	1715584
<i>CqNAC65</i>	C_Quinoa_Scaffold_2939	1736295	1738669
<i>CqNAC66</i>	C_Quinoa_Scaffold_2939	1941693	1943007
<i>CqNAC67</i>	C_Quinoa_Scaffold_2858	1227921	1229027
<i>CqNAC68</i>	C_Quinoa_Scaffold_1829	406399	409549
<i>CqNAC69</i>	C_Quinoa_Scaffold_4413	2894460	2896172
<i>CqNAC70</i>	C_Quinoa_Scaffold_3751	595767	597199
<i>CqNAC71</i>	C_Quinoa_Scaffold_2896	1183564	1190468
<i>CqNAC72</i>	C_Quinoa_Scaffold_4191	561057	566172
<i>CqNAC73</i>	C_Quinoa_Scaffold_2742	830479	831969
<i>CqNAC74</i>	C_Quinoa_Scaffold_2742	2425950	2427349
<i>CqNAC75</i>	C_Quinoa_Scaffold_2868	2813158	2817413
<i>CqNAC76</i>	C_Quinoa_Scaffold_1186	6601758	6605376
<i>CqNAC77</i>	C_Quinoa_Scaffold_2702	2127273	2129646
<i>CqNAC78</i>	C_Quinoa_Scaffold_3901	1027330	1037429

<i>CqNAC79</i>	C_Quinoa_Scaffold_1847	379048	380885
<i>CqNAC80</i>	C_Quinoa_Scaffold_4036	284851	288100
<i>CqNAC81</i>	C_Quinoa_Scaffold_3144	508634	514678
<i>CqNAC82</i>	C_Quinoa_Scaffold_1828	2728236	2729766
<i>CqNAC83</i>	C_Quinoa_Scaffold_3651	230705	236209
<i>CqNAC84</i>	C_Quinoa_Scaffold_2690	869497	871434
<i>CqNAC85</i>	C_Quinoa_Scaffold_2272	2995932	3001176
<i>CqNAC86</i>	C_Quinoa_Scaffold_1660	1227409	1230573
<i>CqNAC87</i>	C_Quinoa_Scaffold_3313	554469	558083
<i>CqNAC88</i>	C_Quinoa_Scaffold_2828	440003	448032
<i>CqNAC89</i>	C_Quinoa_Scaffold_2828	1153363	1157531
<i>CqNAC90</i>	C_Quinoa_Scaffold_2741	24164	26939

Table S5: PCR primers used for qRT-PCR in this study.

Gene name	Forward primer (5'-3')	Reverse primer (5'-3')
<i>Actin</i>	GGTATTGGAACGGTGCCAGT	GGACTCGTGGTGCATCTCAA
<i>CqNAC16</i>	AAGGAGAGTGGATCATGTAGCG	CCTTGTAGCCCTCTGGTTCA
<i>CqNAC21</i>	ACACGTGTCTAGGCTGCGGT	GAAGCACATTCCAAAAGCGG
<i>CqNAC23</i>	GGCAACTGATTACATCCCACAA	GCCAATTTGATTAAGATCATCAACAT
<i>CqNAC32</i>	TTACCCTCAGCTACCTCCCG	TCGACCTCAGCTATGATCGC
<i>CqNAC36</i>	TGACCGTTCATTCGCTTTGC	ATTCAGGTGCCGCGGTTAAC
<i>CqNAC38</i>	TTTCGCTTCCATCCGACTGA	CTCCAAATATCGCCTCGGCT
<i>CqNAC42</i>	ACTGATTACATCCCACAATG	TTAAGATCATGTTCAATCTCG
<i>CqNAC45</i>	ATTGAGCAGAGCAGAGGAGA	CGAGGTGAGAAGAAAAACCA
<i>CqNAC62</i>	CATGTGGAAGAATTCATCTG	AGCTAACGGGTAATTCTGAT
<i>CqNAC66</i>	GAGTGCGGCAAAGCCTACAA	ACCCGGTAAAGGCGAATTCA
<i>CqNAC85</i>	GGAGGTGTCATCGACGATCA	GGACGTCGCTTCTCAACCTT

Table S6: Orthology information of CqNACs and AtNACs from BLASTP.

CqNAC Name	AtNAC Name	Max Score	Total Score	Query Cover	E-Value	Per.ident
CqNAC36	RD26/AT4G27410	372	372	0.86	2.00E-130	75.20%
CqNAC66	RD26/AT4G27410	325	325	0.69	2.00E-111	65.20%
CqNAC36	ANAC019/AT1G52890	342	342	0.83	7.00E-118	67.20%
CqNAC66	ANAC019/AT1G52890	323	323	0.56	3.00E-110	85.71%
CqNAC32	ANAC2/AT3G15510	300	300	0.58	7.00E-100	74.26%
CqNAC38	ANAC2/AT3G15510	263	263	0.66	2.00E-85	61.80%
CqNAC23	NAC096/AT5G46590	283	283	0.79	1.00E-94	54.55%
CqNAC42	NAC096/AT5G46590	279	279	0.79	6.00E-93	54.55%
CqNAC21	ATAF1/AT1G01720	226	226	0.73	4.00E-73	52.21%
CqNAC16	NTL6/AT3G49530	247	283	0.52	3.00E-74	51.10%
CqNAC62	NTL6/AT3G49530	244	276	0.47	2.00E-73	57.51%
CqNAC45	NTL8/AT2G27300	224	224	0.7	2.00E-69	43.85%
CqNAC85	ANAC042/AT2G43000	223	223	0.74	5.00E-73	66.05%