

BW820RMPEfp-seq1-000001
SEQUENCE LISTING

<110> Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile (ENEA)
<120> Una nuova carotenoide diossigenasi e metodi per la produzione biotecnologica in microorganismi e piante di composti ad elevato valore aggiunto derivati dallo zafferano
<120> Una nuova carotenoide diossigenasi e metodi per la produzione biotecnologica in microorganismi e piante di composti ad elevato valore aggiunto derivati dallo zafferano

<130> BW820R

<150> IT102014902281465

<151> 2014-07-23

<160> 2

<170> BISSAP 1.3

<210> 1

<211> 1688

<212> DNA

<213> Crocus sativus

<400> 1

atggcaaata aggaggaggc agagaagagg aagaagaagc ccaaaccatt aaaagtacta	60
attaccaaag tggatccgaa gccgaggaag ggcattggcat ccgtcgcagt ggacttactc	120
gagaaggcct ttgtatacct attgtccgga aattctgcag ctgatacgtag tagtagtagt	180
ggctgctgct gtcgtaaaga gcattactac ctctccggca attatgcgcc cgtcggacac	240
gaaaccccg cctccgacca cctccccatt catggatccc ttcctgaatg cttgaatgga	300
gtgtttctga gagttggtcc taacccaag tttgtctccg tagccggata caattgggtc	360
gatggagatg gaatgattca tggattgcgt attaaagatg gaaaagcaac ttatctatct	420
cgatatatta aaacgtcacg gtttaaaca gaagaatatt ttggaagagc aaaatttatg	480
aagattggag atctaagggg attgcttggg ttctttacga tcttaatact agtacttcga	540
acaacattga aagtaataga catttcatat ggaagaggga cgggtaatac agctcttgtg	600
tatcataatg gcttactatt ggctctatca gaagaagata aaccttatgt tgttaaagtt	660
ttagaagatg gagacttgca aactcttggg atattggatt atgacaagaa attgtcacat	720
ccattcaccg ctcatccaaa gatcgatecg ttaactgatg agatgtttac ctttgatat	780
tccatctcgc ctccgtatct tacttatcga gtcatttcca aggatggagt gatgcaagat	840
ccagtgcaaa tctcaattac atccccctacc ataatgcatg attttgctat tactgaaaat	900
tatgccatct tcatggacct gcccttgtat ttccaaccag aggaaatggt aaaggggaaa	960
tttgtctctt catttcaccc tacaaaaaga gtcgatatcg gtgtgcttcc acgatatgca	1020
aaagacgagc atccaattcg atggttcgat cttccaagtt gcttcatgac tcataatgca	1080
aatgcttggg aagagaatga tgaagttgtg ctattcacat gtcgccttga gagtcctgat	1140
cttgacatgc ttagtggacc tgcggaagaa gagattggga attcaaaaag tgagctttac	1200
gaaatgaggt tcaatttgaa aactggaatt acttcacaaa agcaactatc tgtacctagt	1260

BW820RMPEfp-seq1-000001

gttgattttc ctcggatcaa ccaaagttat actggcagga aacagcaata tgttttattgt	1320
actcttggca acaccaagat taagggcatt gtgaagtttg atctgcaa at tgaaccagaa	1380
gccggaaaga caatgcttga agttggagga aatgtacaag gcatctttga gttgggacct	1440
agaagatatg gttcagaggc aatattttgtg ccatgccaac ctggcatcaa atctgatgag	1500
gatgacgggtt acttgatatt ctttgtacac gacgaaaaca atgggaaatc tgaggtcaat	1560
gtcatcgatg caaagacaat gtctgcagaa cctgtggctg ttgtggaact tccaagcagg	1620
gttccatatg gattccatgc cttgtttctg aatgaggaag aacttcagaa gcaccaagca	1680
gagacatga	1689

<210> 2

<211> 1123

<212> PRT

<213> Crocus sativus

<400> 2

Met	Ala	Asn	Lys	Glu	Glu	Ala	Glu	Lys	Arg	Lys	Lys	Lys	Pro	Lys	Pro
1				5					10					15	
Leu	Lys	Val	Leu	Ile	Thr	Lys	Val	Asp	Pro	Lys	Pro	Arg	Lys	Gly	Met
			20					25					30		
Ala	Ser	Val	Ala	Val	Asp	Leu	Leu	Glu	Lys	Ala	Phe	Val	Tyr	Leu	Leu
		35					40					45			
Ser	Gly	Asn	Ser	Ala	Ala	Asp	Arg	Ser	Ser	Ser	Ser	Gly	Arg	Arg	Arg
	50					55					60				
Arg	Lys	Glu	His	Tyr	Tyr	Leu	Ser	Gly	Asn	Tyr	Ala	Pro	Val	Gly	His
65					70					75					80
Glu	Thr	Pro	Pro	Ser	Asp	His	Leu	Pro	Ile	His	Gly	Ser	Leu	Pro	Glu
				85					90					95	
Cys	Leu	Asn	Gly	Val	Phe	Leu	Arg	Val	Gly	Pro	Asn	Pro	Lys	Phe	Ala
			100					105					110		
Pro	Val	Ala	Gly	Tyr	Asn	Trp	Val	Asp	Gly	Asp	Gly	Met	Ile	His	Gly
		115					120					125			
Leu	Arg	Ile	Lys	Asp	Gly	Lys	Ala	Thr	Tyr	Leu	Ser	Arg	Tyr	Ile	Lys
	130					135					140				
Thr	Ser	Arg	Phe	Gln	Glu	Tyr	Phe	Gly	Arg	Ala	Lys	Phe	Met	Lys	
145					150				155					160	
Ile	Gly	Asp	Leu	Arg	Gly	Leu	Leu	Gly	Phe	Phe	Thr	Ile	Leu	Ile	Leu
				165					170					175	
Val	Leu	Arg	Thr	Thr	Leu	Lys	Val	Ile	Asp	Ile	Ser	Tyr	Gly	Arg	Gly
			180					185					190		
Thr	Gly	Asn	Thr	Ala	Leu	Val	Tyr	His	Asn	Gly	Leu	Leu	Ala	Leu	
		195					200					205			
Ser	Glu	Glu	Asp	Lys	Pro	Tyr	Val	Val	Lys	Val	Leu	Glu	Asp	Gly	Asp
	210					215					220				
Leu	Gln	Thr	Leu	Gly	Ile	Leu	Asp	Tyr	Asp	Lys	Lys	Leu	Ser	His	Pro
225					230					235					240
Phe	Thr	Ala	His	Pro	Lys	Ile	Asp	Pro	Leu	Thr	Asp	Glu	Met	Phe	Thr
				245					250					255	
Phe	Gly	Tyr	Ser	Ile	Ser	Pro	Pro	Tyr	Leu	Thr	Tyr	Arg	Val	Ile	Ser
			260					265					270		
Lys	Asp	Gly	Val	Met	Gln	Asp	Pro	Val	Gln	Ile	Ser	Ile	Thr	Ser	Pro
		275					280					285			
Thr	Ile	Met	His	Asp	Phe	Ala	Ile	Thr	Glu	Asn	Tyr	Ala	Ile	Phe	Met
	290					295					300				
Asp	Leu	Pro	Leu	Tyr	Phe	Gln	Pro	Glu	Glu	Met	Val	Lys	Gly	Lys	Phe
305					310					315					320
Val	Ser	Ser	Phe	His	Pro	Thr	Lys	Arg	Ala	Arg	Ile	Gly	Val	Leu	Pro
				325					330					335	
Arg	Tyr	Ala	Lys	Asp	Glu	His	Pro	Ile	Arg	Trp	Phe	Asp	Leu	Pro	Ser
			340					345					350		
Cys	Phe	Met	Thr	His	Asn	Ala	Asn	Ala	Trp	Glu	Glu	Asn	Asp	Glu	Val

BW820RMPEfp-seq1-000001

Val	Leu	355	Thr	Cys	Arg	Leu	360	Glu	Ser	Pro	Asp	Leu	365	Asp	Met	Leu	Ser
Gly	Pro	370	Ala	Glu	Glu	Glu	375	Ile	Gly	Asn	Ser	Lys	380	Ser	Glu	Leu	Tyr
385	Met	Arg	Phe	Asn	Leu	Lys	390	Thr	Gly	Ile	Thr	395	Ser	Gln	Lys	Gln	Leu
Val	Pro	Ser	Val	Asp	Phe	Pro	Arg	Ile	410	Asn	Gln	Ser	Tyr	Thr	415	Gly	Arg
Lys	Gln	Gln	Tyr	Val	Tyr	Cys	Thr	Leu	425	Gly	Asn	Thr	Lys	Ile	430	Lys	Gly
Ile	Val	435	Lys	Phe	Asp	Leu	Gln	Ile	440	Glu	Pro	Glu	Ala	445	Gly	Lys	Thr
Leu	450	Glu	Val	Gly	Gly	Asn	455	Val	Gln	Gly	Ile	Phe	460	Glu	Leu	Gly	Pro
465	Arg	Tyr	Gly	Ser	Glu	Ala	470	Ile	Phe	Val	Pro	Cys	475	Gln	Pro	Gly	Ile
Ser	Asp	Glu	Asp	Asp	Gly	Tyr	Leu	Ile	490	Phe	Phe	Val	His	Asp	495	Glu	Asn
Asn	Gly	Lys	500	Ser	Glu	Val	Asn	Val	505	Ile	Asp	Ala	Lys	510	Thr	Met	Ser
Glu	Pro	Val	Ala	Val	Val	Glu	520	Leu	Pro	Ser	Arg	Val	525	Pro	Tyr	Gly	Phe
His	530	Ala	Leu	Phe	Leu	Asn	535	Glu	Glu	Glu	Leu	Gln	540	Lys	His	Gln	Ala
545	Thr	Met	Ala	Asn	Lys	550	Glu	Ala	Glu	Lys	555	Arg	560	Lys	Lys	Lys	Pro
Pro	Leu	Lys	Val	Leu	Ile	Thr	Lys	Val	570	Asp	Pro	Lys	575	Pro	Arg	Lys	Gly
Met	Ala	Ser	Val	Ala	Val	Asp	Leu	585	Leu	Glu	Lys	Ala	590	Phe	Val	Tyr	Leu
Leu	Ser	610	Gly	Asn	Ser	Ala	Ala	615	Asp	Arg	Ser	Ser	620	Ser	Gly	Arg	Arg
Arg	Arg	Lys	Glu	His	Tyr	Tyr	Leu	Ser	Gly	Asn	Tyr	Ala	635	Pro	Val	Gly	640
His	Glu	Thr	Pro	Pro	Ser	Asp	His	Leu	Pro	Ile	His	Gly	650	Ser	Leu	Pro	655
Glu	Cys	Leu	Asn	Gly	Val	Phe	Leu	Arg	665	Val	Gly	Pro	670	Asn	Pro	Lys	Phe
Ala	Pro	Val	Ala	Gly	Tyr	Asn	Trp	Val	680	Asp	Gly	Asp	685	Gly	Met	Ile	His
Gly	Leu	Arg	Ile	Lys	Asp	Gly	Lys	Ala	695	Thr	Tyr	Leu	700	Ser	Arg	Tyr	Ile
Lys	705	Thr	Ser	Arg	Phe	Lys	710	Gln	Glu	Tyr	Phe	Gly	715	Arg	Ala	Lys	Phe
Met	Lys	Ile	Gly	Asp	Leu	Arg	Gly	Leu	730	Leu	Gly	Phe	735	Phe	Thr	Ile	Leu
Ile	Leu	Val	Leu	Arg	Thr	Thr	Leu	Lys	745	Val	Ile	Asp	750	Ile	Ser	Tyr	Gly
Arg	Gly	Thr	Gly	Asn	Thr	Ala	Leu	Val	760	Tyr	His	Asn	765	Gly	Leu	Leu	Leu
Ala	Leu	Ser	Glu	Glu	Asp	Lys	775	Pro	Tyr	Val	Val	Lys	780	Val	Leu	Glu	Asp
Gly	785	Asp	Leu	Gln	Thr	Leu	Gly	Ile	Leu	Asp	Tyr	Asp	795	Lys	Lys	Leu	Ser
His	Pro	Phe	Thr	Ala	His	Pro	Lys	Ile	Asp	Pro	Leu	Thr	805	Asp	Glu	Met	810
Phe	Thr	Phe	Gly	Tyr	Ser	Ile	Ser	Pro	825	Pro	Tyr	Leu	830	Thr	Tyr	Arg	Val
Ile	Ser	Lys	Asp	Gly	Val	Met	Gln	Asp	840	Pro	Val	Gln	845	Ile	Ser	Ile	Thr
Ser	Pro	850	Thr	Ile	Met	His	Asp	Phe	855	Ala	Ile	Thr	860	Glu	Asn	Tyr	Ala
Phe	865	Met	Asp	Leu	Pro	Leu	Tyr	Phe	870	Gln	Pro	Glu	875	Glu	Met	Val	Lys
Lys	Phe	Val	Ser	Ser	Phe	His	Pro	Thr	885	Lys	Arg	Ala	890	Arg	Ile	Gly	Val
Leu	Pro	Arg	Tyr	Ala	Lys	Asp	Glu	His	Pro	Ile	Arg	Trp	Phe	Asp	Leu		

BW820RMPEfp-seq1-000001

[illegible]