

ATR Sequence Listing for BHC143030.txt
SEQUENCE LISTING

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<130> BHC143030

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<170> BiSSAP 1.3

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<212> DNA

<213> synthetic organisms

<220>

<223> Codon-optimized ATR including GST tag

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<212> DNA

<213> synthetic organisms

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<223> Codon-optimized ATRIP including STREP tag

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ATR Sequence Listing for BHC143030.txt

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Gly	Ser	Ala	Thr	Pro	Glu	Glu	Tyr	Asn	Thr	Val	Val	Gln	Lys	Pro	Arg
	275						280					285			
Gln	Ile	Leu	Cys	Gln	Phe	Ile	Asp	Arg	Ile	Leu	Thr	Asp	Val	Asn	Val
	290					295					300				
Val	Ala	Val	Glu	Leu	Val	Lys	Lys	Thr	Asp	Ser	Gln	Pro	Thr	Ser	Val
305					310				315						320
Met	Leu	Leu	Asp	Phe	Ile	Gln	His	Ile	Met	Lys	Ser	Ser	Pro	Leu	Met
			325						330					335	
Phe	Val	Asn	Val	Ser	Gly	Ser	His	Glu	Ala	Lys	Gly	Ser	Cys	Ile	Glu
		340						345					350		
Phe	Ser	Asn	Trp	Ile	Ile	Thr	Arg	Leu	Leu	Arg	Ile	Ala	Ala	Thr	Pro
		355					360					365			
Ser	Cys	His	Leu	Leu	His	Lys	Lys	Ile	Cys	Glu	Val	Ile	Cys	Ser	Leu
	370					375					380				
Leu	Phe	Leu	Phe	Lys	Ser	Lys	Ser	Pro	Ala	Ile	Phe	Gly	Val	Leu	Thr
385					390				395						400
Lys	Glu	Leu	Leu	Gln	Leu	Phe	Glu	Asp	Leu	Val	Tyr	Leu	His	Arg	Arg
			405					410						415	
Asn	Val	Met	Gly	His	Ala	Val	Glu	Trp	Pro	Val	Val	Met	Ser	Arg	Phe
		420					425					430			
Leu	Ser	Gln	Leu	Asp	Glu	His	Met	Gly	Tyr	Leu	Gln	Ser	Ala	Pro	Leu
		435					440					445			

ATR Sequence Listing for BHC143030.txt

Gln	Leu	Met	Ser	Met	Gln	Asn	Leu	Glu	Phe	Ile	Glu	Val	Thr	Leu	Leu
450						455					460				
Met	Val	Leu	Thr	Arg	Ile	Ile	Ala	Ile	Val	Phe	Phe	Arg	Arg	Gln	Glu
465					470					475					480
Leu	Leu	Leu	Trp	Gln	Ile	Gly	Cys	Val	Leu	Leu	Glu	Tyr	Gly	Ser	Pro
				485					490					495	
Lys	Ile	Lys	Ser	Leu	Ala	Ile	Ser	Phe	Leu	Thr	Glu	Leu	Phe	Gln	Leu
			500					505					510		
Gly	Gly	Leu	Pro	Ala	Gln	Pro	Ala	Ser	Thr	Phe	Phe	Ser	Ser	Phe	Leu
		515					520					525			
Glu	Leu	Leu	Lys	His	Leu	Val	Glu	Met	Asp	Thr	Asp	Gln	Leu	Lys	Leu
530						535					540				
Tyr	Glu	Glu	Pro	Leu	Ser	Lys	Leu	Ile	Lys	Thr	Leu	Phe	Pro	Phe	Glu
545					550					555					560
Ala	Glu	Ala	Tyr	Arg	Asn	Ile	Glu	Pro	Val	Tyr	Leu	Asn	Met	Leu	Leu
				565					570					575	
Glu	Lys	Leu	Cys	Val	Met	Phe	Glu	Asp	Gly	Val	Leu	Met	Arg	Leu	Lys
			580					585					590		
Ser	Asp	Leu	Leu	Lys	Ala	Ala	Leu	Cys	His	Leu	Leu	Gln	Tyr	Phe	Leu
		595					600					605			
Lys	Phe	Val	Pro	Ala	Gly	Tyr	Glu	Ser	Ala	Leu	Gln	Val	Arg	Lys	Val
	610					615					620				
Tyr	Val	Arg	Asn	Ile	Cys	Lys	Ala	Leu	Leu	Asp	Val	Leu	Gly	Ile	Glu
625					630					635					640
Val	Asp	Ala	Glu	Tyr	Leu	Leu	Gly	Pro	Leu	Tyr	Ala	Ala	Leu	Lys	Met
				645					650					655	
Glu	Ser	Met	Glu	Ile	Ile	Glu	Glu	Ile	Gln	Cys	Gln	Thr	Gln	Gln	Glu
			660					665					670		
Asn	Leu	Ser	Ser	Asn	Ser	Asp	Gly	Ile	Ser	Pro	Lys	Arg	Arg	Arg	Leu
		675					680					685			
Ser	Ser	Ser	Leu	Asn	Pro	Ser	Lys	Arg	Ala	Pro	Lys	Gln	Thr	Glu	Glu
		690				695					700				
Ile	Lys	His	Val	Asp	Met	Asn	Gln	Lys	Ser	Ile	Leu	Trp	Ser	Ala	Leu
705					710					715					720
Lys	Gln	Lys	Ala	Glu	Ser	Leu	Gln	Ile	Ser	Leu	Glu	Tyr	Ser	Gly	Leu
				725					730					735	
Lys	Asn	Pro	Val	Ile	Glu	Met	Leu	Glu	Gly	Ile	Ala	Val	Val	Leu	Gln
			740					745					750		
Leu	Thr	Ala	Leu	Cys	Thr	Val	His	Cys	Ser	His	Gln	Asn	Met	Asn	Cys
		755					760					765			
Arg	Thr	Phe	Lys	Asp	Cys	Gln	His	Lys	Ser	Lys	Lys	Lys	Pro	Ser	Val
		770				775					780				
Val	Ile	Thr	Trp	Met	Ser	Leu	Asp	Phe	Tyr	Thr	Lys	Val	Leu	Lys	Ser
785					790					795					800
Cys	Arg	Ser	Leu	Leu	Glu	Ser	Val	Gln	Lys	Leu	Asp	Leu	Glu	Ala	Thr
				805					810					815	
Ile	Asp	Lys	Val	Val	Lys	Ile	Tyr	Asp	Ala	Leu	Ile	Tyr	Met	Gln	Val
			820					825					830		
Asn	Ser	Ser	Phe	Glu	Asp	His	Ile	Leu	Glu	Asp	Leu	Cys	Gly	Met	Leu
		835				840						845			
Ser	Leu	Pro	Trp	Ile	Tyr	Ser	His	Ser	Asp	Asp	Gly	Cys	Leu	Lys	Leu
	850					855					860				

ATR Sequence Listing for BHC143030.txt

Thr	Thr	Phe	Ala	Ala	Asn	Leu	Leu	Thr	Leu	Ser	Cys	Arg	Ile	Ser	Asp
865					870					875					880
Ser	Tyr	Ser	Pro	Gln	Ala	Gln	Ser	Arg	Cys	Val	Phe	Leu	Leu	Thr	Leu
				885					890						895
Phe	Pro	Arg	Arg	Ile	Phe	Leu	Glu	Trp	Arg	Thr	Ala	Val	Tyr	Asn	Trp
			900					905					910		
Ala	Leu	Gln	Ser	Ser	His	Glu	Val	Ile	Arg	Ala	Ser	Cys	Val	Ser	Gly
		915					920					925			
Phe	Phe	Ile	Leu	Leu	Gln	Gln	Gln	Asn	Ser	Cys	Asn	Arg	Val	Pro	Lys
	930					935					940				
Ile	Leu	Ile	Asp	Lys	Val	Lys	Asp	Asp	Ser	Asp	Ile	Val	Lys	Lys	Glu
945				950						955					960
Phe	Ala	Ser	Ile	Leu	Gly	Gln	Leu	Val	Cys	Thr	Leu	His	Gly	Met	Phe
			965						970					975	
Tyr	Leu	Thr	Ser	Ser	Leu	Thr	Glu	Pro	Phe	Ser	Glu	His	Gly	His	Val
			980					985					990		
Asp	Leu	Phe	Cys	Arg	Asn	Leu	Lys	Ala	Thr	Ser	Gln	His	Glu	Cys	Ser
		995					1000					1005			
Ser	Ser	Gln	Leu	Lys	Ala	Ser	Val	Cys	Lys	Pro	Phe	Leu	Phe	Leu	Leu
	1010					1015					1020				
Lys	Lys	Lys	Ile	Pro	Ser	Pro	Val	Lys	Leu	Ala	Phe	Ile	Asp	Asn	Leu
1025				1030						1035					1040
His	His	Leu	Cys	Lys	His	Leu	Asp	Phe	Arg	Glu	Asp	Glu	Thr	Asp	Val
			1045					1050						1055	
Lys	Ala	Val	Leu	Gly	Thr	Leu	Leu	Asn	Leu	Met	Glu	Asp	Pro	Asp	Lys
		1060						1065					1070		
Asp	Val	Arg	Val	Ala	Phe	Ser	Gly	Asn	Ile	Lys	His	Ile	Leu	Glu	Ser
	1075						1080					1085			
Leu	Asp	Ser	Glu	Asp	Gly	Phe	Ile	Lys	Glu	Leu	Phe	Val	Leu	Arg	Met
	1090				1095					1100					
Lys	Glu	Ala	Tyr	Thr	His	Ala	Gln	Ile	Ser	Arg	Asn	Asn	Glu	Leu	Lys
1105				1110					1115						1120
Asp	Thr	Leu	Ile	Leu	Thr	Thr	Gly	Asp	Ile	Gly	Arg	Ala	Ala	Lys	Gly
			1125					1130						1135	
Asp	Leu	Val	Pro	Phe	Ala	Leu	Leu	His	Leu	Leu	His	Cys	Leu	Leu	Ser
		1140						1145					1150		
Lys	Ser	Ala	Ser	Val	Ser	Gly	Ala	Ala	Tyr	Thr	Glu	Ile	Arg	Ala	Leu
	1155					1160						1165			
Val	Ala	Ala	Lys	Ser	Val	Lys	Leu	Gln	Ser	Phe	Phe	Ser	Gln	Tyr	Lys
	1170					1175					1180				
Lys	Pro	Ile	Cys	Gln	Phe	Leu	Val	Glu	Ser	Leu	His	Ser	Ser	Gln	Met
1185				1190					1195						1200
Thr	Ala	Leu	Pro	Asn	Thr	Pro	Cys	Gln	Asn	Ala	Asp	Val	Arg	Lys	Gln
			1205					1210						1215	
Asp	Val	Ala	His	Gln	Arg	Glu	Met	Ala	Leu	Asn	Thr	Leu	Ser	Glu	Ile
		1220						1225				1230			
Ala	Asn	Val	Phe	Asp	Phe	Pro	Asp	Leu	Asn	Arg	Phe	Leu	Thr	Arg	Thr
	1235						1240					1245			
Leu	Gln	Val	Leu	Leu	Pro	Asp	Leu	Ala	Ala	Lys	Ala	Ser	Pro	Ala	Ala
	1250					1255				1260					
Ser	Ala	Leu	Ile	Arg	Thr	Leu	Gly	Lys	Gln	Leu	Asn	Val	Asn	Arg	Arg
1265				1270					1275						1280

ATR Sequence Listing for BHC143030.txt

Glu Ile Leu Ile Asn Asn Phe Lys Tyr Ile Phe Ser His Leu Val Cys	1285	1290	1295
Ser Cys Ser Lys Asp Glu Leu Glu Arg Ala Leu His Tyr Leu Lys Asn	1300	1305	1310
Glu Thr Glu Ile Glu Leu Gly Ser Leu Leu Arg Gln Asp Phe Gln Gly	1315	1320	1325
Leu His Asn Glu Leu Leu Leu Arg Ile Gly Glu His Tyr Gln Gln Val	1330	1335	1340
Phe Asn Gly Leu Ser Ile Leu Ala Ser Phe Ala Ser Ser Asp Asp Pro	1345	1350	1355
Tyr Gln Gly Pro Arg Asp Ile Ile Ser Pro Glu Leu Met Ala Asp Tyr	1365	1370	1375
Leu Gln Pro Lys Leu Leu Gly Ile Leu Ala Phe Phe Asn Met Gln Leu	1380	1385	1390
Leu Ser Ser Ser Val Gly Ile Glu Asp Lys Lys Met Ala Leu Asn Ser	1395	1400	1405
Leu Met Ser Leu Met Lys Leu Met Gly Pro Lys His Val Ser Ser Val	1410	1415	1420
Arg Val Lys Met Met Thr Thr Leu Arg Thr Gly Leu Arg Phe Lys Asp	1425	1430	1435
Asp Phe Pro Glu Leu Cys Cys Arg Ala Trp Asp Cys Phe Val Arg Cys	1445	1450	1455
Leu Asp His Ala Cys Leu Gly Ser Leu Leu Ser His Val Ile Val Ala	1460	1465	1470
Leu Leu Pro Leu Ile His Ile Gln Pro Lys Glu Thr Ala Ala Ile Phe	1475	1480	1485
His Tyr Leu Ile Ile Glu Asn Arg Asp Ala Val Gln Asp Phe Leu His	1490	1495	1500
Glu Ile Tyr Phe Leu Pro Asp His Pro Glu Leu Lys Lys Ile Lys Ala	1505	1510	1515
Val Leu Gln Glu Tyr Arg Lys Glu Thr Ser Glu Ser Thr Asp Leu Gln	1525	1530	1535
Thr Thr Leu Gln Leu Ser Met Lys Ala Ile Gln His Glu Asn Val Asp	1540	1545	1550
Val Arg Ile His Ala Leu Thr Ser Leu Lys Glu Thr Leu Tyr Lys Asn	1555	1560	1565
Gln Glu Lys Leu Ile Lys Tyr Ala Thr Asp Ser Glu Thr Val Glu Pro	1570	1575	1580
Ile Ile Ser Gln Leu Val Thr Val Leu Leu Lys Gly Cys Gln Asp Ala	1585	1590	1595
Asn Ser Gln Ala Arg Leu Leu Cys Gly Glu Cys Leu Gly Glu Leu Gly	1605	1610	1615
Ala Ile Asp Pro Gly Arg Leu Asp Phe Ser Thr Thr Glu Thr Gln Gly	1620	1625	1630
Lys Asp Phe Thr Phe Val Thr Gly Val Glu Asp Ser Ser Phe Ala Tyr	1635	1640	1645
Gly Leu Leu Met Glu Leu Thr Arg Ala Tyr Leu Ala Tyr Ala Asp Asn	1650	1655	1660
Ser Arg Ala Gln Asp Ser Ala Ala Tyr Ala Ile Gln Glu Leu Leu Ser	1665	1670	1675
Ile Tyr Asp Cys Arg Glu Met Glu Thr Asn Gly Pro Gly His Gln Leu	1685	1690	1695

ATR Sequence Listing for BHC143030.txt

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Trp Arg Arg Phe Pro Glu His Val Arg Glu Ile Leu Glu Pro His Leu
1700 1705 1710
Asn Thr Arg Tyr Lys Ser Ser Gln Lys Ser Thr Asp Trp Ser Gly Val
1715 1720 1725
Lys Lys Pro Ile Tyr Leu Ser Lys Leu Gly Ser Asn Phe Ala Glu Trp
1730 1735 1740
Ser Ala Ser Trp Ala Gly Tyr Leu Ile Thr Lys Val Arg His Asp Leu
1745 1750 1755 1760
Ala Ser Lys Ile Phe Thr Cys Cys Ser Ile Met Met Lys His Asp Phe
1765 1770 1775
Lys Val Thr Ile Tyr Leu Leu Pro His Ile Leu Val Tyr Val Leu Leu
1780 1785 1790
Gly Cys Asn Gln Glu Asp Gln Gln Glu Val Tyr Ala Glu Ile Met Ala
1795 1800 1805
Val Leu Lys His Asp Asp Gln His Thr Ile Asn Thr Gln Asp Ile Ala
1810 1815 1820
Ser Asp Leu Cys Gln Leu Ser Thr Gln Thr Val Phe Ser Met Leu Asp
1825 1830 1835 1840
His Leu Thr Gln Trp Ala Arg His Lys Phe Gln Ala Leu Lys Ala Glu
1845 1850 1855
Lys Cys Pro His Ser Lys Ser Asn Arg Asn Lys Val Asp Ser Met Val
1860 1865 1870
Ser Thr Val Asp Tyr Glu Asp Tyr Gln Ser Val Thr Arg Phe Leu Asp
1875 1880 1885
Leu Ile Pro Gln Asp Thr Leu Ala Val Ala Ser Phe Arg Ser Lys Ala
1890 1895 1900
Tyr Thr Arg Ala Val Met His Phe Glu Ser Phe Ile Thr Glu Lys Lys
1905 1910 1915 1920
Gln Asn Ile Gln Glu His Leu Gly Phe Leu Gln Lys Leu Tyr Ala Ala
1925 1930 1935
Met His Glu Pro Asp Gly Val Ala Gly Val Ser Ala Ile Arg Lys Ala
1940 1945 1950
Glu Pro Ser Leu Lys Glu Gln Ile Leu Glu His Glu Ser Leu Gly Leu
1955 1960 1965
Leu Arg Asp Ala Thr Ala Cys Tyr Asp Arg Ala Ile Gln Leu Glu Pro
1970 1975 1980
Asp Gln Ile Ile His Tyr His Gly Val Val Lys Ser Met Leu Gly Leu
1985 1990 1995 2000
Gly Gln Leu Ser Thr Val Ile Thr Gln Val Asn Gly Val His Ala Asn
2005 2010 2015
Arg Ser Glu Trp Thr Asp Glu Leu Asn Thr Tyr Arg Val Glu Ala Ala
2020 2025 2030
Trp Lys Leu Ser Gln Trp Asp Leu Val Glu Asn Tyr Leu Ala Ala Asp
2035 2040 2045
Gly Lys Ser Thr Thr Trp Ser Val Arg Leu Gly Gln Leu Leu Leu Ser
2050 2055 2060
Ala Lys Lys Arg Asp Ile Thr Ala Phe Tyr Asp Ser Leu Lys Leu Val
2065 2070 2075 2080
Arg Ala Glu Gln Ile Val Pro Leu Ser Ala Ala Ser Phe Glu Arg Gly
2085 2090 2095
Ser Tyr Gln Arg Gly Tyr Glu Tyr Ile Val Arg Leu His Met Leu Cys
2100 2105 2110

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ATR Sequence Listing for BHC143030.txt

Glu Leu Glu His Ser Ile Lys Pro Leu Phe Gln His Ser Pro Gly Asp	2115	2120	2125
Ser Ser Gln Glu Asp Ser Leu Asn Trp Val Ala Arg Leu Glu Met Thr	2130	2135	2140
Gln Asn Ser Tyr Arg Ala Lys Glu Pro Ile Leu Ala Leu Arg Arg Ala	2145	2150	2155
Leu Leu Ser Leu Asn Lys Arg Pro Asp Tyr Asn Glu Met Val Gly Glu	2165	2170	2175
Cys Trp Leu Gln Ser Ala Arg Val Ala Arg Lys Ala Gly His His Gln	2180	2185	2190
Thr Ala Tyr Asn Ala Leu Leu Asn Ala Gly Glu Ser Arg Leu Ala Glu	2195	2200	2205
Leu Tyr Val Glu Arg Ala Lys Trp Leu Trp Ser Lys Gly Asp Val His	2210	2215	2220
Gln Ala Leu Ile Val Leu Gln Lys Gly Val Glu Leu Cys Phe Pro Glu	2225	2230	2235
Asn Glu Thr Pro Pro Glu Gly Lys Asn Met Leu Ile His Gly Arg Ala	2245	2250	2255
Met Leu Leu Val Gly Arg Phe Met Glu Glu Thr Ala Asn Phe Glu Ser	2260	2265	2270
Asn Ala Ile Met Lys Lys Tyr Lys Asp Val Thr Ala Cys Leu Pro Glu	2275	2280	2285
Trp Glu Asp Gly His Phe Tyr Leu Ala Lys Tyr Tyr Asp Lys Leu Met	2290	2295	2300
Pro Met Val Thr Asp Asn Lys Met Glu Lys Gln Gly Asp Leu Ile Arg	2305	2310	2315
Tyr Ile Val Leu His Phe Gly Arg Ser Leu Gln Tyr Gly Asn Gln Phe	2325	2330	2335
Ile Tyr Gln Ser Met Pro Arg Met Leu Thr Leu Trp Leu Asp Tyr Gly	2340	2345	2350
Thr Lys Ala Tyr Glu Trp Glu Lys Ala Gly Arg Ser Asp Arg Val Gln	2355	2360	2365
Met Arg Asn Asp Leu Gly Lys Ile Asn Lys Val Ile Thr Glu His Thr	2370	2375	2380
Asn Tyr Leu Ala Pro Tyr Gln Phe Leu Thr Ala Phe Ser Gln Leu Ile	2385	2390	2395
Ser Arg Ile Cys His Ser His Asp Glu Val Phe Val Val Leu Met Glu	2405	2410	2415
Ile Ile Ala Lys Val Phe Leu Ala Tyr Pro Gln Gln Ala Met Trp Met	2420	2425	2430
Met Thr Ala Val Ser Lys Ser Ser Tyr Pro Met Arg Val Asn Arg Cys	2435	2440	2445
Lys Glu Ile Leu Asn Lys Ala Ile His Met Lys Lys Ser Leu Glu Lys	2450	2455	2460
Phe Val Gly Asp Ala Thr Arg Leu Thr Asp Lys Leu Leu Glu Leu Cys	2465	2470	2475
Asn Lys Pro Val Asp Gly Ser Ser Ser Thr Leu Ser Met Ser Thr His	2485	2490	2495
Phe Lys Met Leu Lys Lys Leu Val Glu Glu Ala Thr Phe Ser Glu Ile	2500	2505	2510
Leu Ile Pro Leu Gln Ser Val Met Ile Pro Thr Leu Pro Ser Ile Leu	2515	2520	2525

ATR Sequence Listing for BHC143030.txt

Gly Thr His Ala Asn His Ala Ser His Glu Pro Phe Pro Gly His Trp			
2530	2535	2540	
Ala Tyr Ile Ala Gly Phe Asp Asp Met Val Glu Ile Leu Ala Ser Leu			
2545	2550	2555	2560
Gln Lys Pro Lys Lys Ile Ser Leu Lys Gly Ser Asp Gly Lys Phe Tyr			
	2565	2570	2575
Ile Met Met Cys Lys Pro Lys Asp Asp Leu Arg Lys Asp Cys Arg Leu			
	2580	2585	2590
Met Glu Phe Asn Ser Leu Ile Asn Lys Cys Leu Arg Lys Asp Ala Glu			
	2595	2600	2605
Ser Arg Arg Arg Glu Leu His Ile Arg Thr Tyr Ala Val Ile Pro Leu			
	2610	2615	2620
Asn Asp Glu Cys Gly Ile Ile Glu Trp Val Asn Asn Thr Ala Gly Leu			
2625	2630	2635	2640
Arg Pro Ile Leu Thr Lys Leu Tyr Lys Glu Lys Gly Val Tyr Met Thr			
	2645	2650	2655
Gly Lys Glu Leu Arg Gln Cys Met Leu Pro Lys Ser Ala Ala Leu Ser			
	2660	2665	2670
Glu Lys Leu Lys Val Phe Arg Glu Phe Leu Leu Pro Arg His Pro Pro			
	2675	2680	2685
Ile Phe His Glu Trp Phe Leu Arg Thr Phe Pro Asp Pro Thr Ser Trp			
	2690	2695	2700
Tyr Ser Ser Arg Ser Ala Tyr Cys Arg Ser Thr Ala Val Met Ser Met			
2705	2710	2715	2720
Val Gly Tyr Ile Leu Gly Leu Gly Asp Arg His Gly Glu Asn Ile Leu			
	2725	2730	2735
Phe Asp Ser Leu Thr Gly Glu Cys Val His Val Asp Phe Asn Cys Leu			
	2740	2745	2750
Phe Asn Lys Gly Glu Thr Phe Glu Val Pro Glu Ile Val Pro Phe Arg			
	2755	2760	2765
Leu Thr His Asn Met Val Asn Gly Met Gly Pro Met Gly Thr Glu Gly			
	2770	2775	2780
Leu Phe Arg Arg Ala Cys Glu Val Thr Met Arg Leu Met Arg Asp Gln			
2785	2790	2795	2800
Arg Glu Pro Leu Met Ser Val Leu Lys Thr Phe Leu His Asp Pro Leu			
	2805	2810	2815
Val Glu Trp Ser Lys Pro Val Lys Gly His Ser Lys Ala Pro Leu Asn			
	2820	2825	2830
Glu Thr Gly Glu Val Val Asn Glu Lys Ala Lys Thr His Val Leu Asp			
	2835	2840	2845
Ile Glu Gln Arg Leu Gln Gly Val Ile Lys Thr Arg Asn Arg Val Thr			
	2850	2855	2860
Gly Leu Pro Leu Ser Ile Glu Gly His Val His Tyr Leu Ile Gln Glu			
2865	2870	2875	2880
Ala Thr Asp Glu Asn Leu Leu Cys Gln Met Tyr Leu Gly Trp Thr Pro			
	2885	2890	2895
Tyr Met			

<210> 4
 <211> 830
 <212> PRT

ATR Sequence Listing for BHC143030.txt

<213> synthetic organisms

<400> 4

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Met Ala Ser Trp Ser His Pro Gln Phe Glu Lys Ser Ala Gly Leu Glu
1      5      10      15
Thr Ser Leu Tyr Lys Lys Ala Gly Ser Asp Tyr Asp Ile Pro Thr Thr
20     25     30
Glu Asn Leu Tyr Phe Gln Gly Met Ala Gly Thr Ser Ala Pro Gly Ser
35     40     45
Lys Arg Arg Ser Glu Pro Pro Ala Pro Arg Pro Gly Pro Pro Pro Gly
50     55     60
Thr Gly His Pro Pro Ser Lys Arg Ala Arg Gly Phe Ser Ala Ala Ala
65     70     75     80
Ala Pro Asp Pro Asp Asp Pro Phe Gly Ala His Gly Asp Phe Thr Ala
85     90     95
Asp Asp Leu Glu Leu Asp Thr Leu Ala Ser Gln Ala Leu Ser Gln
100    105    110
Cys Pro Ala Ala Ala Arg Asp Val Ser Ser Asp His Lys Val His Arg
115    120    125
Leu Leu Asp Gly Met Ser Lys Asn Pro Ser Gly Lys Asn Arg Glu Thr
130    135    140
Val Pro Ile Lys Asp Asn Phe Glu Leu Glu Val Leu Gln Ala Gln Tyr
145    150    155    160
Lys Glu Leu Lys Glu Lys Met Lys Val Met Glu Glu Glu Val Leu Ile
165    170    175
Lys Asn Gly Glu Ile Lys Ile Leu Arg Asp Ser Leu His Gln Thr Glu
180    185    190
Ser Val Leu Glu Glu Gln Arg Arg Ser His Phe Leu Leu Glu Gln Glu
195    200    205
Lys Thr Gln Ala Leu Ser Asp Lys Glu Lys Glu Phe Ser Lys Lys Leu
210    215    220
Gln Ser Leu Gln Ser Glu Leu Gln Phe Lys Asp Ala Glu Met Asn Glu
225    230    235    240
Leu Arg Thr Lys Leu Gln Thr Ser Glu Arg Ala Asn Lys Leu Ala Ala
245    250    255
Pro Ser Val Ser His Val Ser Pro Arg Lys Asn Pro Ser Val Val Ile
260    265    270
Lys Pro Glu Ala Cys Ser Pro Gln Phe Gly Lys Thr Ser Phe Pro Thr
275    280    285
Lys Glu Ser Phe Ser Ala Asn Met Ser Leu Pro His Pro Cys Gln Thr
290    295    300
Glu Ser Gly Tyr Lys Pro Leu Val Gly Arg Glu Asp Ser Lys Pro His
305    310    315    320
Ser Leu Arg Gly Asp Ser Ile Lys Gln Glu Glu Ala Gln Lys Ser Phe
325    330    335
Val Asp Ser Trp Arg Gln Arg Ser Asn Thr Gln Gly Ser Ile Leu Ile
340    345    350
Asn Leu Leu Leu Lys Gln Pro Leu Ile Pro Gly Ser Ser Leu Ser Leu
355    360    365
Cys His Leu Leu Ser Ser Ser Ser Glu Ser Pro Ala Gly Thr Pro Leu
370    375    380
Gln Pro Pro Gly Phe Gly Ser Thr Leu Ala Gly Met Ser Gly Leu Arg

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ATR Sequence Listing for BHC143030.txt

385					390					395					400
Thr	Thr	Gly	Ser	Tyr	Asp	Gly	Ser	Phe	Ser	Leu	Ser	Ala	Leu	Arg	Glu
				405					410					415	
Ala	Gln	Asn	Leu	Ala	Phe	Thr	Gly	Leu	Asn	Leu	Val	Ala	Arg	Asn	Glu
			420					425					430		
Cys	Ser	Arg	Asp	Gly	Asp	Pro	Ala	Glu	Gly	Gly	Arg	Arg	Ala	Phe	Pro
		435					440					445			
Leu	Cys	Gln	Leu	Pro	Gly	Ala	Val	His	Phe	Leu	Pro	Leu	Val	Gln	Phe
	450					455					460				
Phe	Ile	Gly	Leu	His	Cys	Gln	Ala	Leu	Gln	Asp	Leu	Ala	Ala	Ala	Lys
465					470					475					480
Arg	Ser	Gly	Ala	Pro	Gly	Asp	Ser	Pro	Thr	His	Ser	Ser	Cys	Val	Ser
				485					490					495	
Ser	Gly	Val	Glu	Thr	Asn	Pro	Glu	Asp	Ser	Val	Cys	Ile	Leu	Glu	Gly
		500					505					510			
Phe	Ser	Val	Thr	Ala	Leu	Ser	Ile	Leu	Gln	His	Leu	Val	Cys	His	Ser
	515						520					525			
Gly	Ala	Val	Val	Ser	Leu	Leu	Leu	Ser	Gly	Val	Gly	Ala	Asp	Ser	Ala
	530					535					540				
Ala	Gly	Glu	Gly	Asn	Arg	Ser	Leu	Val	His	Arg	Leu	Ser	Asp	Gly	Asp
545				550					555						560
Met	Thr	Ser	Ala	Leu	Arg	Gly	Val	Ala	Asp	Asp	Gln	Gly	Gln	His	Pro
			565					570						575	
Leu	Leu	Lys	Met	Leu	Leu	His	Leu	Leu	Ala	Phe	Ser	Ser	Ala	Ala	Thr
		580					585						590		
Gly	His	Leu	Gln	Ala	Ser	Val	Leu	Thr	Gln	Cys	Leu	Lys	Val	Leu	Val
	595						600					605			
Lys	Leu	Ala	Glu	Asn	Thr	Ser	Cys	Asp	Phe	Leu	Pro	Arg	Phe	Gln	Cys
	610					615					620				
Val	Phe	Gln	Val	Leu	Pro	Lys	Cys	Leu	Ser	Pro	Glu	Thr	Pro	Leu	Pro
625					630				635						640
Ser	Val	Leu	Leu	Ala	Val	Glu	Leu	Leu	Ser	Leu	Leu	Ala	Asp	His	Asp
			645					650					655		
Gln	Leu	Ala	Pro	Gln	Leu	Cys	Ser	His	Ser	Glu	Gly	Cys	Leu	Leu	Leu
		660					665					670			
Leu	Leu	Tyr	Met	Tyr	Ile	Thr	Ser	Arg	Pro	Asp	Arg	Val	Ala	Leu	Glu
	675						680					685			
Thr	Gln	Trp	Leu	Gln	Leu	Glu	Gln	Glu	Val	Val	Trp	Leu	Leu	Ala	Lys
	690					695					700				
Leu	Gly	Val	Gln	Ser	Pro	Leu	Pro	Pro	Val	Thr	Gly	Ser	Asn	Cys	Gln
705					710					715					720
Cys	Asn	Val	Glu	Val	Val	Arg	Ala	Leu	Thr	Val	Met	Leu	His	Arg	Gln
			725						730					735	
Trp	Leu	Thr	Val	Arg	Arg	Ala	Gly	Gly	Pro	Pro	Arg	Thr	Asp	Gln	Gln
		740					745					750			
Arg	Arg	Thr	Val	Arg	Cys	Leu	Arg	Asp	Thr	Val	Leu	Leu	Leu	His	Gly
	755						760					765			
Leu	Ser	Gln	Lys	Asp	Lys	Leu	Phe	Met	Met	His	Cys	Val	Glu	Val	Leu
	770					775					780				
His	Gln	Phe	Asp	Gln	Val	Met	Pro	Gly	Val	Ser	Met	Leu	Ile	Arg	Gly
785					790					795					800
Leu	Pro	Asp	Val	Thr	Asp	Cys	Glu	Glu	Ala	Ala	Leu	Asp	Asp	Leu	Cys

ATR Sequence Listing for BHC143030.txt

				805					810					815
Ala	Ala	Glu	Thr	Asp	Val	Glu	Asp	Pro	Glu	Val	Glu	Cys	Gly	
			820					825					830	