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T cells in patients with narcolepsy target self-antigens of hypocretin neurons

Daniela Latorre^{1,2,10}, Ulf Kallweit^{3,4,10}, Eric Armentani¹, Mathilde Foglierini^{1,5}, Federico Mele¹, Antonino Cassotta^{1,2}, Sandra Jovic¹, David Jarrossay¹, Johannes Mathis³, Francesco Zellini⁶, Burkhard Becher⁷, Antonio Lanzavecchia¹, Ramin Khatami⁸, Mauro Manconi^{3,6}, Mehdi Tafti⁹, Claudio L. Bassetti^{3*} & Federica Sallusto^{1,2*}

¹Institute for Research in Biomedicine, Faculty of Biomedical Sciences, Università della Svizzera italiana, Bellinzona, Switzerland. ²Institute of Microbiology, ETH Zurich, Zurich, Switzerland.

³Department of Neurology, University Hospital, Bern, Switzerland. ⁴Institute of Immunology, University of Witten/Herdecke, Witten, Germany. ⁵Swiss Institute of Bioinformatics, Lausanne,

Switzerland. ⁶Sleep and Epilepsy Center, Neurocenter of Southern Switzerland, Lugano, Switzerland. ⁷Institute of Experimental Immunology, University of Zurich, Zurich, Switzerland. ⁸Center for Sleep Research and Sleep Medicine, Clinic Barmelweid, Barmelweid, Switzerland. ⁹Department of Physiology, Faculty of Biology and Medicine, University of Lausanne, Lausanne, Switzerland.

¹⁰These authors contributed equally: Daniela Latorre, Ulf Kallweit, Claudio L. Bassetti, Federica Sallusto. *e-mail: claudio.bassetti@insel.ch; federica.sallusto@irb.usi.ch

Supplementary Information Table 1. Clone ID, TCR V β CDR3 sequence and specificity of autoreactive CD4⁺ T cell clones from narcolepsy patients

PT	Clone ID	TCR V β CDR3	Clonotype	Specificity	No Ag (cpm) [*]	HCRT (cpm) [*]
P1	A05P1	CASRGGAYSNQPQHF	1	HCRT	1456	10960
P1	A06P1	CASRGGAYSNQPQHF	1	HCRT	870	15333
P1	A12P1	CASRGGAYSNQPQHF	1	HCRT	787	94649
P1	B05P2	CASRGGAYSNQPQHF	1	HCRT	588	25178
P1	C03P1	CASRGGAYSNQPQHF	1	HCRT	427	57637
P1	C06P2	CASRGGAYSNQPQHF	1	HCRT	553	28054
P1	C08P1	CASRGGAYSNQPQHF	1	HCRT	662	9157
P1	D06P2	CASRGGAYSNQPQHF	1	HCRT	610	27588
P1	D12P2	CASRGGAYSNQPQHF	1	HCRT	485	10073
P1	E02P2	CASRGGAYSNQPQHF	1	HCRT	611	46819
P1	E05P2	CASRGGAYSNQPQHF	1	HCRT	372	22275
P1	G07P2	CASRGGAYSNQPQHF	1	HCRT	1076	16007
P1	H02P2	CASRGGAYSNQPQHF	1	HCRT	744	35417
P1	A10P2	CASSATSGAINEQFF	2	HCRT	1029	12916
P1	B03P2	CASSATSGAINEQFF	2	HCRT	487	102346
P1	B12P2	CASSATSGAINEQFF	2	HCRT	666	29913
P1	D09P2	CASSATSGAINEQFF	2	HCRT	541	20570
P1	E09P2	CASSATSGAINEQFF	2	HCRT	474	77547
P1	F02P2	CASSATSGAINEQFF	2	HCRT	383	57949
P1	G04P2	CASSATSGAINEQFF	2	HCRT	2121	25532
P1	H07P2	CASSATSGAINEQFF	2	HCRT	663	58564
P1	H08P2	CASSATSGAINEQFF	2	HCRT	390	28642
P1	E06P2	CATSDSGFGYTF	3	HCRT	4682	27815
P1	L1-A1	CASSRDSALAKNIQYF	4	HCRT	148	58821
P1	L1-A2	CASSRDSALAKNIQYF	4	HCRT	109	51649
P1	L1-A6	CASSRDSALAKNIQYF	4	HCRT	162	33273
P1	L1-B3	CASSRDSALAKNIQYF	4	HCRT	137	52995
P1	L1-B4	CASSRDSALAKNIQYF	4	HCRT	128	67969
P1	L1-B5	CASSRDSALAKNIQYF	4	HCRT	162	23106
P1	L13-D1	CASSLNRLNGYTF	5	HCRT	425	9990
P1	L13-D3	CASSLNRLNGYTF	5	HCRT	395	2639
P1	L20-7	CASSRASAGEQYF	6	HCRT	994	8569
P1	L20-20	CASSRASAGEQYF	6	HCRT	266	16007
P1	L20-11	CASSYDNSYNPLHF	7	HCRT	136	3256
P1	L20-64	CASTRDRSFPQHF	8	HCRT	730	7123
P1	L24-3	CSARDPRVASPLHF	9	HCRT	287	20362
P1	L25-A3	CASSQLAANEQFF	10	HCRT	331	33630
P1	L25-A4	CASSQLAANEQFF	10	HCRT	287	21429
P1	L25-B6	CASSQLAANEQFF	10	HCRT	289	23726
P1	L27-18	CASSFPGQGSYNEQFF	11	HCRT	333	2097
P1	L6-14	CASSVGGGLQPHEQYF	12	HCRT	1094	5758
P3	LD7-C12	CASSEQGQPSLTAFF	13	HCRT	2370	11410
P3	LA10A-03	CASSLYQGFGSNTIYF	14	HCRT	127	1944
P3	LA10B-08	CASSQDWGDSSITGAFF	15	HCRT	100	5536
P3	LA10B-01	CASSQDWGDSSITGAFF	15	HCRT	130	5327
P3	LA10B-03	CASSQDWGDSSITGAFF	15	HCRT	151	4387
P3	LA03A-11	CAWSPQAPNGYTF	16	HCRT	2440	10600
P3	LA03A-12	CAWSPQAPNGYTF	16	HCRT	2440	17130
P4	LA11-1P2	CASSRPGQPMAGELFF	17	HCRT	800	2607
P4	LA11-18P1	CASSRDSNQPQHF	18	HCRT	323	13517
P4	LE10-19	CASSSTAQSYEQYF	19	HCRT	1576	8287
P4	LE10-3	CASSYSKGVGGYTF	20	HCRT	1576	8287
P4	LE10-14	CASSYSKGVGGYTF	20	HCRT	6035	23262
P4	LD01-6	CASSLNLYASSQETQYF	21	HCRT	807	2904
P4	LD07-10	CASSPQLGVETQYF	22	HCRT	153	4427
P4	LD07-15	CASSPQLGVETQYF	22	HCRT	482	8161
P4	LD07-17	CSASPGQVEAFF	23	HCRT	5650	40779
P8	B05	CAILYRTTNKGYTF	24	HCRT	76	29865
P8	CR3-07	CAILYRTTNKGYTF	24	HCRT	82	4827
P8	A01_PA	CASGGVNPQHF	25	HCRT	87	39348
P8	A03_PA	CASGGVNPQHF	25	HCRT	26	17307
P8	A06_PA	CASGGVNPQHF	25	HCRT	196	90635
P8	A07_PA	CASGGVNPQHF	25	HCRT	130	23832
P8	A08_PA	CASGGVNPQHF	25	HCRT	115	96160
P8	A09_PA	CASGGVNPQHF	25	HCRT	122	13989
P8	B05_PA	CASGGVNPQHF	25	HCRT	494	51985
P8	B06_PA	CASGGVNPQHF	25	HCRT	67	19140
P8	B10_PA	CASGGVNPQHF	25	HCRT	131	12265
P8	B11_PA	CASGGVNPQHF	25	HCRT	57	26764
P8	C05_PA	CASGGVNPQHF	25	HCRT	341	46574
P8	C06_PA	CASGGVNPQHF	25	HCRT	67	12098
P8	C09_PA	CASGGVNPQHF	25	HCRT	63	106584
P8	D01_PA	CASGGVNPQHF	25	HCRT	235	48104
P8	D02_PA	CASGGVNPQHF	25	HCRT	35	57407
P8	D03_PA	CASGGVNPQHF	25	HCRT	74	17602
P8	D05_PA	CASGGVNPQHF	25	HCRT	445	17358

P8	D10_PA	CASGGVNQPQHF	25	HCRT	41	90585
P8	D11_PA	CASGGVNQPQHF	25	HCRT	39	71172
P8	E04_PA	CASGGVNQPQHF	25	HCRT	57	55869
P8	E09_PA	CASGGVNQPQHF	25	HCRT	705	23975
P8	F01_PA	CASGGVNQPQHF	25	HCRT	351	17214
P8	F04_PA	CASGGVNQPQHF	25	HCRT	100	10167
P8	F06_PA	CASGGVNQPQHF	25	HCRT	90	24866
P8	F10_PA	CASGGVNQPQHF	25	HCRT	56	53540
P8	F11_PA	CASGGVNQPQHF	25	HCRT	59	93813
P8	G04_PA	CASGGVNQPQHF	25	HCRT	197	65442
P8	G05_PA	CASGGVNQPQHF	25	HCRT	61	57006
P8	G07_PA	CASGGVNQPQHF	25	HCRT	74	174028
P8	G09_PA	CASGGVNQPQHF	25	HCRT	82	97303
P8	H02_PA	CASGGVNQPQHF	25	HCRT	50	26278
P8	H06_PA	CASGGVNQPQHF	25	HCRT	74	90882
P8	H08_PA	CASGGVNQPQHF	25	HCRT	158	77923
P8	H09_PA	CASGGVNQPQHF	25	HCRT	48	119801
P8	H10_PA	CASGGVNQPQHF	25	HCRT	48	102871
P8	A08_PB	CASGGVNQPQHF	25	HCRT	124	118352
P8	B02_PB	CASGGVNQPQHF	25	HCRT	97	137646
P8	B11_PB	CASGGVNQPQHF	25	HCRT	73	15003
P8	B12_PB	CASGGVNQPQHF	25	HCRT	159	10489
P8	C01_PB	CASGGVNQPQHF	25	HCRT	44	75017
P8	C03_PB	CASGGVNQPQHF	25	HCRT	193	102998
P8	C04_PB	CASGGVNQPQHF	25	HCRT	119	26702
P8	C05_PB	CASGGVNQPQHF	25	HCRT	193	36645
P8	C06_PB	CASGGVNQPQHF	25	HCRT	93	115839
P8	C09_PB	CASGGVNQPQHF	25	HCRT	170	44837
P8	C10_PB	CASGGVNQPQHF	25	HCRT	93	154452
P8	D02_PB	CASGGVNQPQHF	25	HCRT	70	78904
P8	D07_PB	CASGGVNQPQHF	25	HCRT	128	61116
P8	D12_PB	CASGGVNQPQHF	25	HCRT	41	21693
P8	E03_PB	CASGGVNQPQHF	25	HCRT	279	24844
P8	E08_PB	CASGGVNQPQHF	25	HCRT	33	98312
P8	E09_PB	CASGGVNQPQHF	25	HCRT	705	23975
P8	E10_PB	CASGGVNQPQHF	25	HCRT	98	151307
P8	E11_PB	CASGGVNQPQHF	25	HCRT	63	27623
P8	F01_PB	CASGGVNQPQHF	25	HCRT	50	17995
P8	F02_PB	CASGGVNQPQHF	25	HCRT	153	23920
P8	F04_PB	CASGGVNQPQHF	25	HCRT	120	10975
P8	F10_PB	CASGGVNQPQHF	25	HCRT	18	13429
P8	F11_PB	CASGGVNQPQHF	25	HCRT	45	19655
P8	B02_PA	CASRPDSGANVLTf	26	HCRT	222	51776
P8	B04_PA	CASRPDSGANVLTf	26	HCRT	248	63246
P8	G10_PA	CASRPDSGANVLTf	26	HCRT	133	54846
P8	G12_PA	CASRPDSGANVLTf	26	HCRT	345	27205
P8	B08_PB	CASRPDSGANVLTf	26	HCRT	93	27442
P8	D04_PB	CASRPDSGANVLTf	26	HCRT	115	11070
P8	E12_PB	CASRPDSGANVLTf	26	HCRT	308	72146
P8	G01_PB	CASRPDSGANVLTf	26	HCRT	127	36557
P8	D08_PA	CASSLRIGTSGRHTQNF	27	HCRT	93	8260
P8	E11_PA	CASSLRIGTSGRHTQNF	27	HCRT	128	31572
P8	C11_PA	CASSPGLNEQFF	28	HCRT	4734	21845
P8	D06_PA	CASSRQGGNTGELFF	29	HCRT	28	16642
P8	F05_PA	CASSRQGGNTGELFF	29	HCRT	50	9945
P8	F12_PA	CASSRQGGNTGELFF	29	HCRT	40	11407
P8	A09_PB	CASSRQGGNTGELFF	29	HCRT	1000	105142
P8	E04_PB	CASSRQGGNTGELFF	29	HCRT	104	37528
P8	H01_PA	CASSRKTAGVGSPLHF	30	HCRT	390	16632
P10	LA11-B02	CASSLLEETQYF	31	HCRT	761	22099
P10	LG04P2-07	CASSLLEETQYF	31	HCRT	818	80515
P10	LD07P2-02	CASSLLEETQYF	31	HCRT	611	48095
P10	A12PB	CASKGVSVYNEQFF	32	HCRT	1605	7627
P10	LA4P2-10	CASSLAAGGAGELFF	33	HCRT	116	14069
P10	LA4P2-12	CASSSLRAHEQYF	34	HCRT	1568	65114
P10	LA4P2-11	CASSSLRAHEQYF	34	HCRT	3594	59017
P10	LA4P2-04	CASSSLRAHEQYF	34	HCRT	1106	26566
P10	LA4P2-03	CASSSLRAHEQYF	34	HCRT	2662	47803
P10	LA4P2-06	CASSSLRAHEQYF	34	HCRT	3207	46928
P10	LH05P1-97	CASSSLRAHEQYF	34	HCRT	613	77618
P10	LB06P1-8	CASSLVLGNGELFF	35	HCRT	345	5918
P10	A11PB	CASSLAPRGTVGQGEQ	36	HCRT	6688	22417
P10	LB06P1-12	CASSSPSYEQYF	37	HCRT	1648	10179
P10	LB07P2-12	CATSDADRTSTDQYF	38	HCRT	352	13916
P10	D05PB	CASSLVLGAGGPGTQYF	39	HCRT	273	2047
P10	LF5P2-06	CASSSLRGSEAFF	40	HCRT	349	27299
P10	LC10P-08	CASSSLRGSEAFF	40	HCRT	385	38594
P10	D09PB	CASSPPEKKETQYF	41	HCRT	557	2501
P10	D12PB	CASSQGRGDNSPLHF	42	HCRT	296	2431
P10	LC10PC-01	CAGGPLPEQFF	43	HCRT	289	11531
P10	LC10P-01	CASSSMGWHEQFF	44	HCRT	1848	135367
P10	LC10PC-07	CASSTGHAGELFF	45	HCRT	270	12432

P10	LC10PC-08	CATSEFTGELFF	46	HCRT	221	58671
P10	LC10P-11	CSASDRDRGLSRQYF	47	HCRT	300	33880
P10	LC10PC-01	CASSRTGTGSSGRSYE	48	HCRT	356	21828
P10	LC10PC-04	CASSRTGTGSSGRSYE	48	HCRT	390	39592
P10	LC10P-07	CASSRTGTGSSGRSYE	48	HCRT	282	43834
P10	C04PB	CASSYLGGGHNEQFF	49	HCRT	333	3480
P10	A02PA	CASSYLSGTDQYF	50	HCRT	396	2335
P10	LD8P2-09	CSASLLGGEQYF	51	HCRT	241	15898
P10	LD9P2-08	CSVVETNYGYTF	52	HCRT	1259	21248
P10	LH3P1-08	CSVVETNYGYTF	52	HCRT	608	23181
P10	LE4P2-01	CASSFDSYGYTF	53	HCRT	2139	12376
P10	LG04P1-02	CASTQNGLNTEAFF	54	HCRT	315	36121
P10	LG04P1-02	CASTQNGLNTEAFF	54	HCRT	326	52301
P10	LG04P1-10	CASTQNGLNTEAFF	54	HCRT	488	54703
P10	LG7P2-12	CASSAATGVPTDQYF	55	HCRT	352	16893
P10	LG7P2-09	CSAFQARSNTEAFF	56	HCRT	1287	118048
P10	LC10P-02	CSAFQARSNTEAFF	56	HCRT	2335	128961
P10	LH05P1-10	CASSLGAAAGANVLTF	57	HCRT	374	39488
P10	LH05P1-03	CASSSSRAHEQYF	58	HCRT	597	40544
P10	LA4P2-08	CASSLTDRDNEQFF	59	HCRT	4702	21933
P11	LP1E2-01	N.D.	60	HCRT	2176	20074
P13	13_EV	CASTYKATGIFTGELFF	61	HCRT	219	2015
P14	L6A3	N.D.	62	HCRT	2989	18005
P14	L1A1_1	N.D.	63	HCRT	3001	22590
P14	L1A1_2	N.D.	63	HCRT	4871	29871
P22	E4	CASTQQGLTEAFF	64	HCRT	463	3346
P7	LF06P1-02	CASSPRGRFGLSGLRG	65	TRIB2	953	5822
P7	LF06P1-12	CASSLGAGGGETQYF	66	TRIB2	1031	17075
P7	LF06P1-06	CASSLGAGGGETQYF	66	TRIB2	4003	12265
P7	LF06P1-08	CASSLGAGGGETQYF	66	TRIB2	138	9224
P14	1B5-T1	CAIRNSGGPTSTDTQYF	67	TRIB2	426	65819
P14	7C6-T1	CAIRNSGGPTSTDTQYF	67	TRIB2	351	13592
P14	7C6-T2	CAIRNSGGPTSTDTQYF	67	TRIB2	1381	10575
P14	5B4-T2	CAIRNSGGPTSTDTQYF	67	TRIB2	816	13963
P14	5B4-T3	CAIRNSGGPTSTDTQYF	67	TRIB2	590	29084
P14	5B4-T5	CAIRNSGGPTSTDTQYF	67	TRIB2	1183	31760
P14	6C2-T1	CAIRNSGGPTSTDTQYF	67	TRIB2	1545	21850
P14	6C2-T4	CAIRNSGGPTSTDTQYF	67	TRIB2	168	33730
P14	5B4-T1	CASASGGSTDTQYF	68	TRIB2	392	24668
P14	1B5-T3	CASSPNAAGELFF	69	TRIB2	195	51017
P14	1B5-T4	CASSSAGSSYEYF	70	TRIB2	548	27541
P14	7C6-T5	CASSVEGDRASEKLFF	71	TRIB2	1256	12221
P14	L6C2-3	N.D.	72	TRIB2	286	46669
P22	H2	CASSAKTGAGANVLTF	73	TRIB2	330	3752
P22	H4	CASSAKTGAGANVLTF	73	TRIB2	5886	35072
P22	A4	CASSGAQAQGPQHF	74	TRIB2	420	4959
P22	G4	CASSGSGVAYEQYF	75	TRIB2	2109	16604
P22	C5	CASSGSGVAYEQYF	75	TRIB2	541	13450
P22	H5	CASSIGLAGGQGDQYF	76	TRIB2	843	22137
P22	B3	CASSIGLAGGQGDQYF	76	TRIB2	545	20887
P22	C6	CASSLETGTEAFF	77	TRIB2	537	13504
P22	D3	CASSLETGTEAFF	77	TRIB2	435	28082
P22	E4	CASSLETGTEAFF	77	TRIB2	486	32638
P22	E6	CASSLETGTEAFF	77	TRIB2	245	18963
P22	E3	CASSLVSPPGPDQYF	78	TRIB2	611	15071
P22	C3	CASSQDRGAGGLSSYN	79	TRIB2	416	8327

*Specificity of T cell clones was assessed by stimulating the cells with autologous B cells pulsed with HCRT or TRIB2 peptide pool. Shown are cpm values measured after 16h-pulse with [3H]-thymidine. N.D., Not Determined

Supplementary Information Table 2. List of samples for which TCR sequencing data are available as .txt file

Sample ID*	Source	T cell subset	Diagnosis	HLA-DQB1*06:02
P1	CSF	CD4 ⁺ T cells	NT1	+
P1	PBMC	CD4 ⁺ CD45RA ⁻ CCR6 ⁻ T cells	NT1	+
P1	PBMC	CD4 ⁺ CD45RA ⁻ CCR6 ⁺ T cells	NT1	+
P2	CSF	CD8 ⁺ T cells	NT1	+
P2	PBMC	CD8 ⁺ CD45RA ⁻ T cells	NT1	+
P2	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P2	CSF	CD4 ⁺ CCR6 ⁺ T cells	NT1	+
P2	CSF	CD4 ⁺ CCR6 ⁻ T cells	NT1	+
P3	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P5	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P7	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P7	CSF	CD4 ⁺ T cells	NT1	+
P8	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P10	PBMC	CD8 ⁺ CD45RA ⁻ T cells	NT1	+
P10	CSF	CD4 ⁺ T cells	NT1	+
P10	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P10	CSF	CD8 ⁺ T cells	NT1	+
P11	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	—
P12	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P13	CSF	CD4 ⁺ T cells	NT1	+
P13	CSF	CD8 ⁺ T cells	NT1	+
P13	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P13	PBMC	CD8 ⁺ CD45RA ⁻ T cells	NT1	+
P16	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P17	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P20	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P22	CSF	CD8 ⁺ T cells	NT1	—
P22	PBMC	CD8 ⁺ CD45RA ⁻ T cells	NT1	—
P22	CSF	CD4 ⁺ T cells	NT1	—
P22	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	—
P24	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT1	+
P4	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT2	—
P9	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT2	—
P14	CSF	CD8 ⁺ T cells	NT2	—
P14	PBMC	CD4 ⁺ CD45RA ⁻ T cells	NT2	—
P14	CSF	CD4 ⁺ T cells	NT2	—
C2	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C4	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C7	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C9	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C10	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C11	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C12	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C13	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C14	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C15	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C16	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C17	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+
C20	PBMC	CD4 ⁺ CD45RA ⁻ T cells	Control	+

* Sequencing of P6 was not performed due to the limited amount of blood obtained

Supplementary Information Table 3. List of peptides pools spanning the entire sequence of prepro-hypocretin (HCRTpp) or TRIB2

HCRT (15mer overlapping of 11)		HCRT (20mer overlapping of 12)		TRIB2 (20mer overlapping of 12)	
1.	MNLPSTKVSAAVTL	1.	MNLPSTKVSAAVTLLLLLL	1.	MNIHRSTPITIARYGRSRNK
2.	STKVSAAVTLLLLLL	2.	SWAAVTLLLLLLLLPPALLS	2.	ITIARYGRSRNKTDFFEELS
3.	SWAAVTLLLLLLLLLP	3.	LLLLLLPPALLSSGAAQPL	3.	SRNKTDFFEELSSIRSAEPS
4.	VTLLLLLLLLPPALL	4.	ALLSSGAAQPLPDCCRQKT	4.	EELSSIRSAEPSQSFSFNLG
5.	LLLLLLPPALLSSGA	5.	AQPLPDCCRQKTCSCRLYEL	5.	AEPSQSFSFNLGSPSPPETP
6.	LLPPALLSSGAAQPL	6.	RQKTCSCRLYELLHGAGNHA	6.	PNLGSPSPPETPNLSHCVSC
7.	ALLSSGAAQPLPDC	7.	LYELLHGAGNHAAGILTLGK	7.	PETPNLSHCVSCIGKYLLLE
8.	SGAAQPLPDCCRQK	8.	GNHAAGILTLGKRRSGPPGL	8.	CVSCIGKYLLLEPLEGDHVF
9.	AQPLPDCCRQKTCSC	9.	TLGKRRSGPPGLQGRQLRL	9.	LLLEPLEGDHVFRAVHLHSG
10.	PDCCRQKTCSCRLYE	10.	PPGLQGRQLRLQASGNHAA	10.	DHVFRAVHLHSGEELVCKVF
11.	RQKTCSCRLYELLHG	11.	QRLQASGNHAAGILTMGRR	11.	LHSGEELVCKVFDISCYQES
12.	CSCRLYELLHGAGNH	12.	NHAAGILTMGRRAGAEPAPR	12.	CKVFDISCYQESLAPCFCLS
13.	LYELLHGAGNHAAGI	13.	MGRRAGAEPAPRPCLGRRCS	13.	YQESLAPCFCLSAHSNINQI
14.	LHGAGNHAAGILTLG	14.	PAPRPCLGRRCSAPAAASVA	14.	FCLSAHSNINQITEIILGET
15.	GNHAAGILTLGKRRS	15.	LGRRCSAPAAASVAPGGQSGI	15.	INQITEIILGETKAYVFFER
16.	AGILTLGKRRSGPPG			16.	LGETKAYVFFERSYDGMHSF
17.	TLGKRRSGPPGLQGR			17.	FFERSYDGMHSFVRTCKKL
18.	RRSGPPGLQGRQLRL			18.	MHSFVRTCKKLREEEAARLF
19.	PPGLQGRQLRLQAS			19.	KKLREEEAARLFYQIASAVA
20.	QGRQLRLQASGNHA			20.	ARLFYQIASAVAHCHDGGLV
21.	QRLQASGNHAAGIL			21.	SAVAHCHDGGLVLRDLKLK
22.	QASGNHAAGILTMGR			22.	GGLVLRDLKLKRFIFKDEER
23.	NHAAGILTMGRRAGA			23.	KLKRFIFKDEERTRVKLESL
24.	GILTMGRRAGAEPAP			24.	DEERTRVKLESLDAYILRG
25.	MGRRAGAEPAPRPCL			25.	LESLEDAYILRGDDDSLSDK
26.	AGAEPAPRPCLGRRCS			26.	ILRGDDDSLSDKHGCPAYVS
27.	PAPRPCLGRRCSAPA			27.	LSDKHGCPAYVSPEILNTSG
28.	PCLGRRCSAPAAASV			28.	AYVSPEILNTSGSYSGKAAD
29.	RRCSAPAAASVAPGG			29.	NTSGSYSGKAADVWSLVGML
30.	APAAASVAPGGQSGI			30.	KAADVWSLVGMLYTMVGRY
				31.	GVMLYTMVGRYPFHDI EPS
				32.	VGRYPFHDI EPSSLF SKIRR
				33.	IEPSSLF SKIRRGQFNIPET
				34.	KIRRGQFNIPETLSPKAKCL
				35.	IPETLSPKAKCLIRSLRRE
				36.	AKCLIRSLRREPSERLTSQ
				37.	LRREPSERLTSQEILDHPWF
				38.	LTSQEILDHPWFSTDFSVSN
				39.	HPWFSTDFSVSNSAYGAKEV
				40.	SVSNSAYGAKEVSDQLVPDV
				41.	AKEVSDQLVPDVNMEENLDP
				42.	VPDVNMEENLDPFFN

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