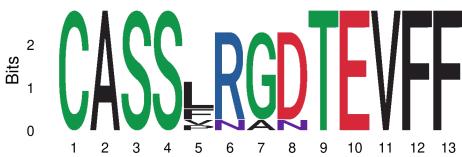
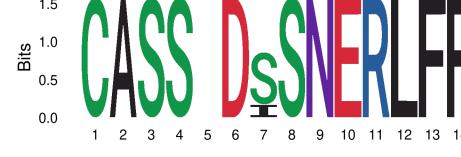


This document presents motifs of Th clusters with two experimental groups identified as significant by pipeline described in the thesis. All clusters have frequency more than 0.025%. p5, p20 and p30 showed strong immune response with a lot of intersections between clusters. Matched clusters highlighted by green. For p17 and p48 one out of two experimental groups showed poor response. However, the most abundant clusters in the groups are the same for both peptides.

Table 1. Motifs of significant clusters with frequency higher than 0.25% found in Th repertoires of the groups vaccinated with p5. Motifs were made by the ‘ggseqlogo’ R package.

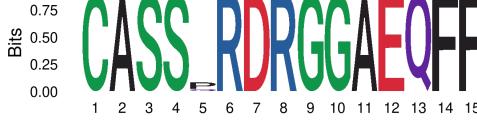
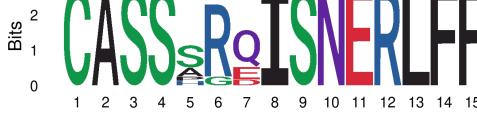
Top position	p5 Th group 1	Top position	p5 Th group 2
1	1.TRBV15.TRBJ1-1	1	3.TRBV15.TRBJ1-1
			
2	506.TRBV13-2.TRBJ2-5	3	182.TRBV13-2.TRBJ2-5
			
3	19.TRBV4.TRBJ1-4	4	14.TRBV4.TRBJ1-4
			
4	9.TRBV15.TRBJ2-3	6	32.TRBV15.TRBJ2-3
			
6	254.TRBV19.TRBJ1-3	8	17.TRBV19.TRBJ1-3

			
5	8.TRBV13-2.TRBJ1-4	2	224.TRBV14.TRBJ2-4
			
		5	27.TRBV3.TRBJ2-7
			
		7	27.TRBV13-2.TRBJ2-7
			
		9	46.TRBV31.TRBJ2-7
			
		10	28.TRBV13-1.TRBJ1-3
			
		11	10.TRBV5.TRBJ2-5

			<p>Bits</p> <p>CASSQDGQKDTQYF</p> <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14</p>
		12	21.TRBV13-3.TRBJ1-4
			<p>Bits</p> <p>CASS RDNERLFF</p> <p>1 2 3 4 5 6 7 8 9 10 11 12 13</p>

Table 2. Motifs of significant clusters with frequency higher than 0.25% found in Th repertoires of the groups vaccinated with p20. Motifs were made by the ‘ggseqlogo’ R package.

Top position n	p20 Th group 1	Top position	p20 Th group 1
1	84.TRBV3.TRBJ2-3 <p>Bits</p> <p>CASS_TS AETLYF</p> <p>1 2 3 4 5 6 7 8 9 10 11 12 13</p>	1	2.TRBV3.TRBJ2-3 <p>Bits</p> <p>CASS_TS AETLYF</p> <p>1 2 3 4 5 6 7 8 9 10 11 12 13</p>
2	30.TRBV16.TRBJ2-7 <p>Bits</p> <p>CASS_LA GYEQYF</p> <p>1 2 3 4 5 6 7 8 9 10 11 12</p>	6	6.TRBV16.TRBJ2-7 <p>Bits</p> <p>CASS_L_E GYEQYF</p> <p>1 2 3 4 5 6 7 8 9 10 11 12</p>
3	127.TRBV1.TRBJ1-4 <p>Bits</p> <p>CTC SGT_G SNERLFF</p> <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14</p>	5	245.TRBV1.TRBJ1-4 <p>Bits</p> <p>CTC SGT_G SNERLFF</p> <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14</p>
4	42.TRBV16.TRBJ1-5 <p>Bits</p> <p>CASS_RDN QAPLF</p> <p>1 2 3 4 5 6 7 8 9 10 11 12</p>	2	4.TRBV3.TRBJ2-4 <p>Bits</p> <p>CASSL ARTGGG_o NTLYF</p> <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17</p>

		3	426.TRBV13-2.TRBJ2-1 
		4	3.TRBV5.TRBJ2-4 
		7	23.TRBV13-1.TRBJ2-1 
		8	2.TRBV3.TRBJ2-4 
		9	5.TRBV2.TRBJ2-1 
		10	61.TRBV13-2.TRBJ2-7 
		11	8.TRBV31.TRBJ2-7 
		12	20.TRBV16.TRBJ1-4 

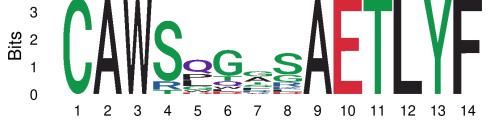
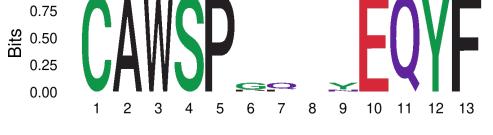
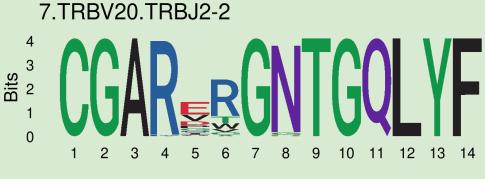
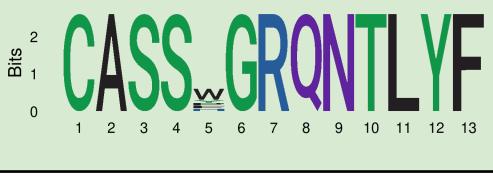
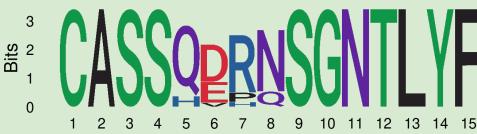
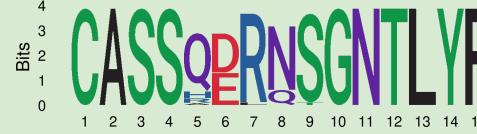
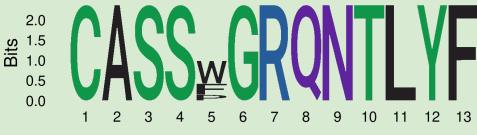
		13	32.TRBV31.TRBJ2-3 
		14	15.TRBV31.TRBJ2-7 
		15	582.TRBV31.TRBJ1-1 
		16	424.TRBV4.TRBJ1-3 

Table 3. Motifs of significant clusters with frequency higher than 0.25% found in Th repertoires of the groups vaccinated with p30. Motifs were made by the ‘ggseqlogo’ R package.

Top position	p30 Th group 1	Top position	p30 Th group 1
1	7.TRBV20.TRBJ2-2 	1	12.TRBV20.TRBJ2-2 
2	3.TRBV4.TRBJ2-4 	7	1.TRBV4.TRBJ2-4 

5	23.TRBV2.TRBJ1-3 	2	56.TRBV2.TRBJ1-3 
10	12.TRBV4.TRBJ2-4 	9	6.TRBV4.TRBJ2-4 
11	22.TRBV1.TRBJ1-5 	16	53.TRBV1.TRBJ1-5 
13	15.TRBV1.TRBJ1-2 	15	47.TRBV1.TRBJ1-2 
4	42.TRBV26.TRBJ1-3 	4	6.TRBV13-2.TRBJ1-3 
6	72.TRBV4.TRBJ1-2 	5	1.TRBV31.TRBJ2-4 
7	51.TRBV3.TRBJ1-4 	6	547.TRBV14.TRBJ2-2 
8	97.TRBV5.TRBJ2-7 	8	182.TRBV13-3.TRBJ2-2 

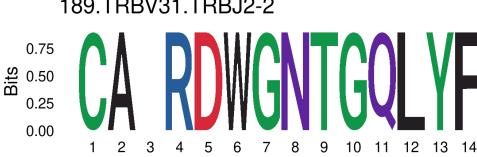
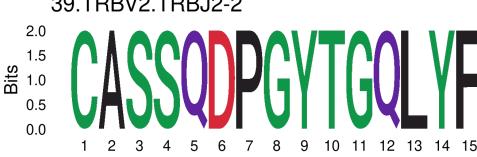
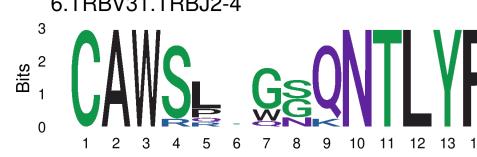
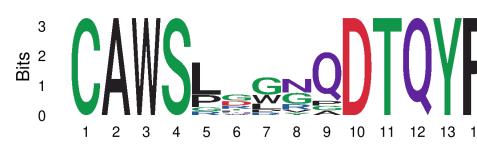
9	189.TRBV31.TRBJ2-2 	10	380.TRBV26.TRBJ2-2 
12	39.TRBV2.TRBJ2-2 	11	6.TRBV31.TRBJ2-4 
14	225.TRBV1.TRBJ2-1 	12	28.TRBV20.TRBJ2-5 
		13	30.TRBV13-2.TRBJ1-1 
		14	22.TRBV3.TRBJ2-2 
		17	93.TRBV31.TRBJ2-5 

Table 4. Motifs of significant clusters with frequency higher than 0.25% found in Th repertoires of the groups vaccinated with p48. Motifs were made by the ‘ggseqlogo’ R package.

Top position n	p48 Th group 1	Top position	p48 Th group 1

3	14.TRBV13-3.TRBJ2-7 	1	3.TRBV13-3.TRBJ2-7 
1	3.TRBV4.TRBJ2-5 	2	1.TRBV31.TRBJ2-7 
2	10.TRBV3.TRBJ2-5 	3	8.TRBV4.TRBJ2-7 
4	12.TRBV26.TRBJ2-2 	4	558.TRBV26.TRBJ2-4 
		5	10.TRBV4.TRBJ2-7 
		6	262.TRBV31.TRBJ1-1 
		7	26.TRBV31.TRBJ2-5 
		8	708.TRBV31.TRBJ1-4 

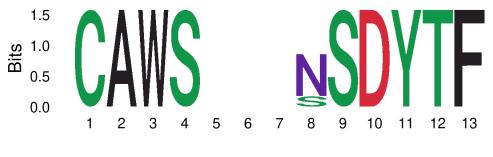
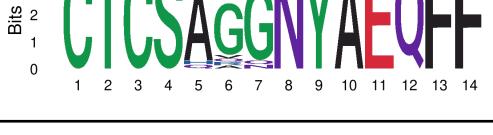
		9	9.TRBV31.TRB1J1-3 
		10	19.TRBV12-1.TRB1J2-2 
		11	16.TRBV13-3.TRB1J2-5 
		12	11.TRBV13-3.TRB1J1-2 
		13	11.TRBV31.TRB1J1-2 

Table 5. Motifs of significant clusters with frequency higher than 0.25% found in Th repertoires of the groups vaccinated with p17. Motifs were made by the ‘ggseqlogo’ R package.

Top position n	p17 Th group 1	Top position	p17 Th group 1
1	18.TRBV13-3.TRB1J2-7 	1	22.TRBV13-3.TRB1J2-7 

		2	59.TRBV13-2.TRBJ1-3 
		3	6.TRBV19.TRBJ1-4 
		4	13.TRBV16.TRBJ2-7 
		5	356.TRBV1.TRBJ1-2 
		6	59.TRBV13-3.TRBJ1-3 
		7	30.TRBV3.TRBJ2-2 
		8	14.TRBV19.TRBJ1-2 
		9	143.TRBV1.TRBJ2-1 

		10	<p>8.TRBV31.TRBJ1-1</p> <table border="1"> <thead> <tr> <th>Position</th> <th>Color</th> <th>Approximate Bits</th> </tr> </thead> <tbody> <tr><td>1</td><td>C</td><td>~2.8</td></tr> <tr><td>2</td><td>A</td><td>~0.1</td></tr> <tr><td>3</td><td>W</td><td>~0.1</td></tr> <tr><td>4</td><td>S</td><td>~0.1</td></tr> <tr><td>5</td><td>R</td><td>~0.1</td></tr> <tr><td>6</td><td>E</td><td>~0.1</td></tr> <tr><td>7</td><td>D</td><td>~0.1</td></tr> <tr><td>8</td><td>N</td><td>~0.1</td></tr> <tr><td>9</td><td>T</td><td>~0.1</td></tr> <tr><td>10</td><td>E</td><td>~0.1</td></tr> <tr><td>11</td><td>V</td><td>~0.1</td></tr> <tr><td>12</td><td>F</td><td>~0.1</td></tr> <tr><td>13</td><td>F</td><td>~0.1</td></tr> </tbody> </table>	Position	Color	Approximate Bits	1	C	~2.8	2	A	~0.1	3	W	~0.1	4	S	~0.1	5	R	~0.1	6	E	~0.1	7	D	~0.1	8	N	~0.1	9	T	~0.1	10	E	~0.1	11	V	~0.1	12	F	~0.1	13	F	~0.1			
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