

ID	Description	Gene Ratio	BgR atio	pval ue	p.ad just	qual ue
GO:00 06959	humoral immune response	19/92	349/1 8493	6.99 E-15	1.38 E-11	1.05 E-11
GO:00 02697	regulation of immune effector process	19/92	439/1 8493	4.30 E-13	4.24 E-10	3.23 E-10
GO:00 42110	T cell activation	19/92	451/1 8493	6.93 E-13	4.55 E-10	3.47 E-10
GO:00 46651	lymphocyte proliferation	15/92	264/1 8493	3.44 E-12	1.51 E-09	1.15 E-09
GO:00 32943	mononuclear cell proliferation	15/92	266/1 8493	3.83 E-12	1.51 E-09	1.15 E-09
GO:00 70661	leukocyte proliferation	15/92	283/1 8493	9.31 E-12	3.06 E-09	2.33 E-09
GO:00 34341	response to interferon-gamma	13/92	198/1 8493	1.74 E-11	4.82 E-09	3.67 E-09
GO:00 02460	adaptive immune response based on somatic recombination of immune receptors built from immunoglobulin superfamily domains	16/92	354/1 8493	1.95 E-11	4.82 E-09	3.67 E-09
GO:00 50863	regulation of T cell activation	15/92	305/1 8493	2.70 E-11	5.70 E-09	4.34 E-09
GO:00 02478	antigen processing and presentation of exogenous peptide antigen	11/92	126/1 8493	3.18 E-11	5.70 E-09	4.34 E-09
GO:00 02920	regulation of humoral immune response	11/92	126/1 8493	3.18 E-11	5.70 E-09	4.34 E-09
GO:00 19886	antigen processing and presentation of exogenous peptide antigen via MHC class II	10/92	98/18 493	5.50 E-11	9.02 E-09	6.87 E-09
GO:00 19884	antigen processing and presentation of exogenous antigen	11/92	134/1 8493	6.23 E-11	9.02 E-09	6.87 E-09
GO:00 19882	antigen processing and presentation	12/92	175/1 8493	6.64 E-11	9.02 E-09	6.87 E-09
GO:00 02495	antigen processing and presentation of peptide antigen via MHC class II	10/92	101/1 8493	7.46 E-11	9.02 E-09	6.87 E-09
GO:00 42098	T cell proliferation	12/92	178/1 8493	8.10 E-11	9.02 E-09	6.87 E-09
GO:00 71346	cellular response to interferon-gamma	12/92	178/1 8493	8.10 E-11	9.02 E-09	6.87 E-09
GO:00 02504	antigen processing and presentation of peptide or polysaccharide antigen via MHC class II	10/92	102/1 8493	8.23 E-11	9.02 E-09	6.87 E-09
GO:00 48002	antigen processing and presentation of peptide antigen	11/92	139/1 8493	9.28 E-11	9.63 E-09	7.33 E-09
GO:00 42129	regulation of T cell proliferation	11/92	153/1 8493	2.62 E-10	2.58 E-08	1.96 E-08

Supplementary table3 The top 20 enrichment terms of the exemplar genes in immune cluster by NMF.