

**ПРИЛОЖЕНИЕ 1**  
**АНАЛИЗ ЭКСПРЕССИИ ГЕНОВ В РЕЗУЛЬТАТЕ ВОЗДЕЙСТВИЯ**  
**ИНТЕРФЕРОНА ГАММА IFN- $\gamma$  НА КЛЕТКУ С ИСПОЛЬЗОВАНИЕМ**  
**ПРОГРАММНОГО ПАКЕТА GENEEXPRESSIONANALYSER**

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a)

Функция	p-значение					
	3/ctr	12/ctr	24/ctr	48/ctr	72/ctr	j72/ctr
positive regulation of programmed cell death	3,36E-06	3,83E-06	1,94E-05	1,22E-05	1,89E-04	n/s
regulation of interferon-beta production	4,39E-05	1,93E-04	n/s	1,69E-04	1,66E-03	7,13E-03
positive regulation of response to interferon-gamma	1,70E-04	3,02E-03	n/s	n/s	n/s	n/s
interferon-gamma-mediated signaling pathway	4,18E-11	1,15E-45	1,33E-29	5,66E-16	4,32E-06	1,84E-03
Innate immune response	3,99E-09	1,30E-44	4,41E-34	2,53E-16	1,47E-04	n/s
interleukin-18-mediated signaling pathway	9,90E-09	4,24E-44	8,89E-29	6,62E-15	1,70E-05	1,64E-03
type I interferon-mediated signaling pathway	9,90E-09	4,24E-44	8,89E-29	6,62E-15	1,70E-05	1,64E-03
Immune response	9,54E-09	1,05E-43	1,16E-32	4,53E-15	4,64E-04	n/s
cellular response to interferon-gamma	2,64E-11	6,61E-42	3,73E-30	1,08E-15	5,07E-10	4,37E-04
Receptor binding	2,55E-06	6,38E-10	2,33E-23	9,02E-10	3,74E-10	n/s
Protein binding	1,28E-03	1,70E-07	5,80E-21	4,81E-07	1,12E-08	n/s
Identical protein binding	1,47E-04	6,78E-08	3,28E-20	1,30E-07	2,46E-11	n/s
Protein dimerization activity	1,97E-04	1,56E-07	4,92E-20	1,19E-06	2,89E-09	n/s
Cytokine binding	1,24E-04	8,10E-08	1,49E-19	1,78E-06	7,18E-11	n/s
Collagen binding	1,21E-04	7,69E-08	3,86E-19	2,04E-06	1,49E-10	n/s
protein binding, bridging	1,36E-04	1,05E-07	7,24E-19	2,00E-06	2,04E-10	n/s
endoplasmic reticulum unfolded protein response	n/s	n/s	1,88E-08	1,44E-09	1,24E-07	n/s
lipopolysaccharide-mediated signaling pathway	4,81E-04	4,98E-04	1,74E-07	8,14E-08	5,45E-03	n/s
positive regulation of NF-kappa transcription factor activity	2,01E-04	5,19E-04	1,56E-06	1,19E-07	3,03E-03	n/s
Toll signaling pathway	3,83E-03	6,24E-03	3,32E-07	3,30E-07	n/s	n/s
positive regulation of sequence-specific DNA binding	4,54E-03	8,26E-03	2,78E-04	5,42E-07	9,28E-03	n/s
Angiogenesis	n/s	5,46E-03	4,56E-06	1,13E-06	4,13E-04	n/s
Zincion binding	n/s	3,17E-03	1,71E-07	1,01E-05	1,79E-17	n/s
transition metal ion binding	n/s	n/s	5,43E-07	6,85E-05	6,53E-15	n/s
regulation of transcription from RNA polymerase II promoter	n/s	n/s	1,96E-09	1,02E-05	6,64E-15	n/s
transcription, DNA-dependent	n/s	n/s	9,68E-07	3,95E-04	1,29E-13	n/s
response to growth hormone stimulus	n/s	n/s	3,72E-03	n/s	n/s	1,77E-04
regulation of CD8-positive, alpha-beta T cell proliferation	5,75E-03	n/s	n/s	n/s	n/s	5,96E-04

b)

Функция	p-значение			
	12/ctr	24/ctr	48/ctr	72/ctr
positive regulation of signal transduction	2,05E-05	n/s	n/s	n/s
negative regulation of insulin-like growth factor receptor signaling pathway	1,34E-04	n/s	n/s	n/s
cholesterol biosynthetic process via 24,25-dihydroxysterol	n/s	2,07E-07	4,09E-07	3,71E-06
cholesterol biosynthetic process via desmosterol	n/s	2,07E-07	4,09E-07	3,71E-06
cholesterol biosynthetic process via lathosterol	n/s	2,07E-07	4,09E-07	3,71E-06
Sterol biosynthetic process	n/s	2,12E-07	1,02E-05	2,29E-05
organophosphate metabolic process	n/s	3,58E-07	1,27E-06	7,18E-06
glycerolphospholipid metabolic process	n/s	3,61E-07	5,45E-06	2,43E-04
iron ion homeostasis	n/s	4,32E-07	3,86E-04	n/s
sphingomyelin metabolic process	n/s	4,78E-07	1,30E-05	7,97E-05
phospholipid catabolic process	n/s	1,10E-06	6,64E-06	4,23E-05
Formaldehyde metabolic process	n/s	3,93E-19	3,98E-28	2,70E-20
single-organism metabolic process	n/s	2,71E-19	7,64E-28	2,53E-20
Dibenzofuran metabolic process	n/s	6,69E-19	9,51E-28	3,45E-20
dibenzo-p-dioxin metabolic process	n/s	7,52E-19	1,14E-27	3,99E-20
small molecule catabolic process	n/s	1,47E-18	1,14E-27	3,99E-20
ammonia oxidation	n/s	2,22E-19	1,20E-27	8,63E-21
alcohol metabolic process	n/s	8,45E-19	1,38E-27	2,46E-20
Protein dimerization activity	n/s	2,53E-04	3,47E-11	6,96E-15
Protein binding	n/s	9,41E-05	4,95E-10	3,38E-14
Cytoskeletal protein binding	n/s	6,01E-05	1,81E-10	6,91E-14
Identical protein binding	n/s	1,68E-05	4,19E-11	1,10E-13
Collagen binding	n/s	4,45E-04	1,72E-10	1,25E-13
Laminin binding	n/s	3,48E-04	2,45E-10	1,41E-13
Protein domain specific binding	n/s	4,64E-04	1,38E-10	1,77E-13

c)

<b>Кластер 1</b>			
<i>Функция</i>		<i>p-значение</i>	
endoplasmic reticulum unfolded protein response		1.82e-011	
response to endoplasmic reticulum stress		8.50e-011	
Detection of mechanical stimulus		2.49e-008	
serine family amino acid biosynthetic process		4.73e-008	
glutamine family amino acid biosynthetic process		1.17e-007	
pyruvate family amino acid biosynthetic process		1.23e-007	
Diaminopimelate biosynthetic process		1.23e-007	
neutral amino acid: sodiumsymporter activity		1.82e-007	
neutral, cationic amino acid:sodium:chloridesymporter activity		1.82e-007	
Fructoselysine biosynthetic process		1.83e-007	
neutral amino acid transmembrane transporter activity		2.57e-007	
histidine family amino acid biosynthetic process		2.64e-007	
branched-chain amino acid biosynthetic process		2.64e-007	
<b>Кластер 2</b>		<b>Кластер 3</b>	
<i>Функция</i>	<i>p-значение</i>	<i>Функция</i>	<i>p-значение</i>
cell-celladhesion	2.57e-012	innate immune response	6.07e-047
synapse assembly involved in innervation	3.87e-008	immune response	3.11e-045
Postsynaptic density assembly	5.10e-008	Humoral immune response	1.75e-040
ammonia oxidation	6.62e-008	cellular response to cytokine stimulus	6.42e-040
single-organism metabolic process	6.97e-008	inflammatory response to antigenic stimulus	2.53e-037
postsynaptic membrane assembly	1.11e-007	Adaptive immune response	7.76e-037
presynaptic membrane assembly	1.11e-007	organ or tissue specific immune response	3.50e-036
glycosaminoglycan binding	1.15e-007	immune response to tumor cell	3.95e-036
hemophilic cell adhesion	1.27e-007	type 2 immune response	3.95e-036
calcium ion binding	1.47e-007	interferon-gamma-mediated signaling pathway	6.67e-035
metal ion binding	1.72e-007	macrophage colony-stimulating factor signaling pathway	4.24e-034
alcohol metabolic process	2.02e-007	tumor necrosis factor-mediated signaling pathway	8.82e-034
phospholipid metabolic process	2.07e-007	defense response	7.97e-033

**Таблица 1** –Результаты поиска значимых функций. Выделены ячейки, в которых наименьшее значение p (наиболее значимые).

- a) Функции выраженных генов (n/s (not significant) – незначимые функции).
- b) Функции подавленных генов (n/s (not significant) – незначимые функции).
- c) Функции для кластеров генов.