Supplementary Material

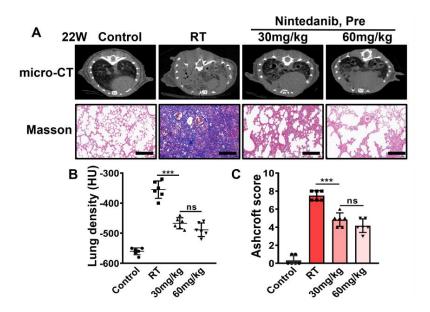


Figure S1. (A) Representative micro-CT images Masson's trichrome staining of lung samples from different treatment groups at week 22 post-radiation. (B) Assessment of lung density in micro-CT images. (C) Ashcroft score was used to determine the pulmonary fibrosis degree. *P < 0.05, **P < 0.01, ***P < 0.001, ns: not significant.

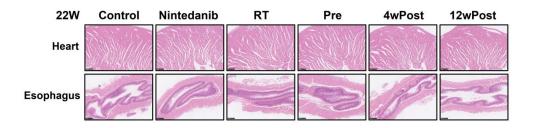


Figure S2. The results of hematoxylin and eosin (H&E) staining of heart and esophagus samples obtained at week 22 post-radiation (scale bar = $250 \mu m$).

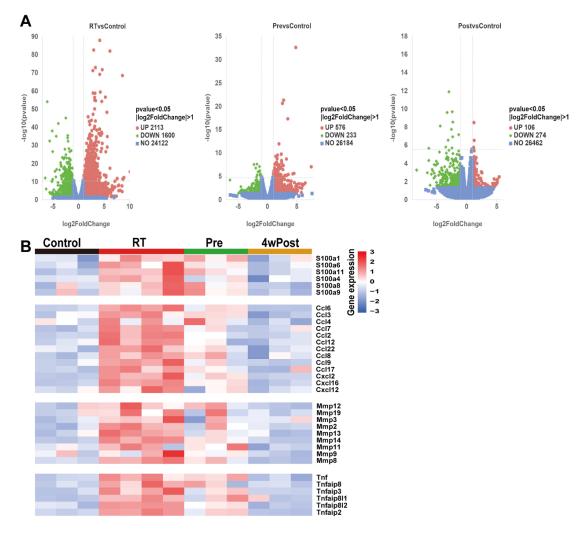


Figure S3. (A) Volcano plot of selected DEGs in the RT, Pre and 4wPost groups relative to control.(B) The expression levels of representative inflammation-related genes and ECM remodeling-related genes.

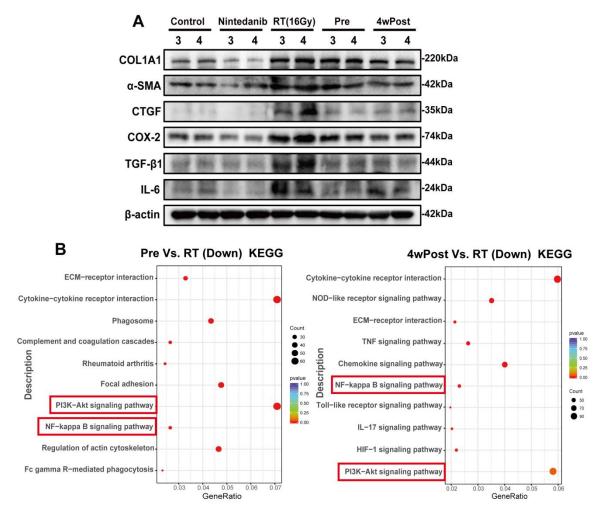


Figure S4. (A) Representative western blot images of COL1A1, α -SMA, CTGF, COX-2, TGF- β and IL-6 in lung tissue of mice. (B) Enriched KEGG dot plot from Pre vs. RT (down) groups and 4wPost vs. RT (down) groups. Noteworthy signaling pathways were marked with red rectangles.

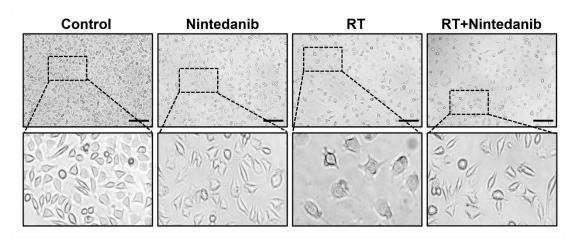


Figure S5. The morphological changes in L929 fibroblasts after different treatments. Scale bar = $200 \ \mu m$.

Table S1. Union list of the top 100 inflammation-related GO terms for the DEGs from the RT vs. control groups, Pre vs. control groups, and 4wPost vs. control groups.

GO:0035456response to interferon-beta12/4271.29E-09GO:0071346cellular response to interferon-gamma12/4279.57E-06GO:00034341response to interferon-gamma12/4276.34E-05GO:000330regulation of response to interferon-gamma4/4273.23E-04GO:000330regulation of interferon-gamma-mediated signaling4/4273.23E-04GO:0000331interferon-gamma-mediated signaling4/4274.93E-03GO:0001634positive regulation of epithelial cell migration10/4271.47E-03GO:0001064positive regulation of cytokine-mediated signaling5/4273.49E-03GO:000035response to oxygen radical4/4275.00E-03GO:0000365response to oxygen radical4/4275.00E-03GO:0001056positive regulation of exponse to cytokine stimulus5/4275.90E-03GO:001055positive regulation of chothelial cell migration7/4276.22E-03GO:0010555positive regulation of leukocyte proliferation9/4277.82E-03GO:0002463cell chemotaxis13/4271.09E-02GO:0002450cell chemotaxis5/69991.48E-18GO:0002505leukocyte mediated immunity63/9995.46E-19GO:0002506cell chemotaxis5/69991.48E-18GO:0002520adaptive immune response6/79991.48E-18GO:0002521mayloid leukocyte activation7/9993.52E-16GO:0002522mycloid leukocyte activation7/9991.28E-15 <td< th=""><th>GOID</th><th>Description</th><th>GeneRatio</th><th>pvalue</th></td<>	GOID	Description	GeneRatio	pvalue
GO:0071346 cellular response to interferon-gamma 12/427 9.57E-06 GO:0034341 response to interferon-gamma 12/427 6.34E-05 GO:0060330 regulation of interferon-gamma 4/427 3.23E-04 GO:0060331 regulation of interferon-gamma-mediated signaling pathway 4/427 4.93E-04 GO:0072593 reactive oxygen species metabolic process 16/427 4.93E-04 GO:00010634 positive regulation of epithelial cell migration 10/427 1.39E-03 GO:00001051 positive regulation of exptokine-mediated signaling pathway 5/427 3.49E-03 GO:0000305 response to oxygen radical 4/427 5.00E-03 GO:0001050 positive regulation of endothelial cell migration 7/427 5.90E-03 GO:0010595 positive regulation of leukocyte proliferation 9/427 7.82E-03 GO:0010505 positive regulation of leukocyte proliferation 9/427 7.82E-03 GO:0002463 cell chemotaxis 13/427 1.09E-02 GO:0002443 leukocyte mediated immunity 63/999 5.46E-19 GO:0002505	GO:0035456	response to interferon-beta	12/427	1.29E-09
GO:0034341 response to interferon-gamma 12/427 6.34E-05 GO:0060330 regulation of response to interferon-gamma 4/427 3.23E-04 GO:0060334 regulation of interferon-gamma-mediated signaling pathway 4/427 3.23E-04 GO:0072593 reactive oxygen species metabolic process 16/427 1.39E-03 GO:0010634 positive regulation of epithelial cell migration 10/427 1.47E-03 GO:000035 response to oxygen radical 4/427 5.00E-03 GO:0000305 response to oxygen radical 4/427 5.00E-03 GO:0010505 positive regulation of response to cytokine stimulus 5/427 5.76E-03 GO:0010595 positive regulation of endothelial cell migration 7/427 6.29E-03 GO:0010595 positive regulation of endothelial cell migration 7/427 7.90E-03 GO:00070665 positive regulation of endothelial cell migration 9/427 7.82E-03 GO:0002443 leukocyte mediated immunity 63/999 5.46E-19 GO:0002250 adaptive immune response 67/999 1.48E-18 GO:0002264	GO:0035458	cellular response to interferon-beta	11/427	1.46E-09
GO:0060330 regulation of response to interferon-gamma 4/427 3.23E-04 GO:0060334 regulation of interferon-gamma-mediated signaling pathway 4/427 3.23E-04 GO:0072593 reactive oxygen species metabolic process 16/427 4.93E-04 GO:0000333 interferon-gamma-mediated signaling pathway 4/427 1.39E-03 GO:0010634 positive regulation of epithelial cell migration 10/427 1.47E-03 GO:0001050 positive regulation of cytokine-mediated signaling 5/427 5.00E-03 GO:000050 positive regulation of response to cytokine stimulus 5/427 5.00E-03 GO:001059 positive regulation of endothelial cell migration 7/427 5.00E-03 GO:001059 positive regulation of endothelial cell migration 7/427 5.00E-03 GO:001059 positive regulation of endothelial cell migration 7/427 6.29E-03 GO:000265 positive regulation of leukocyte proliferation 9/427 7.82E-03 GO:000263 cell chemotaxis 13/427 1.09E-02 GO:000243 GO:000250 adaptive immune response 67/999 <	GO:0071346	cellular response to interferon-gamma	12/427	9.57E-06
GO:0060334 regulation of interferon-gamma-mediated signaling pathway 4/427 3.23E-04 GO:0072593 reactive oxygen species metabolic process 16/427 4.93E-04 GO:0006033 interferon-gamma-mediated signaling pathway 4/427 1.39E-03 GO:0001064 positive regulation of eyithelial cell migration 10/427 1.47E-03 GO:0001051 positive regulation of cytokine-mediated signaling 5/427 3.49E-03 GO:0000055 response to oxygen radical 4/427 5.00E-03 GO:0000060 positive regulation of response to cytokine stimulus 5/427 5.76E-03 GO:001059 positive regulation of endothelial cell migration 7/427 5.90E-03 GO:0007065 positive regulation of leukocyte proliferation 9/427 7.82E-03 GO:002443 leukocyte mediated immunity 63/999 5.46E-19 GO:000250 adaptive immune response 67/999 1.48E-18 GO:000250 elukocyte emigration 45/999 3.50E-16 GO:000251 eukocyte migration 41/999 3.50E-16 GO:0002526 cell chemot	GO:0034341	response to interferon-gamma	12/427	6.34E-05
pathway GO:0072593 reactive oxygen species metabolic process 16/427 4.93E-04 GO:0060333 interferon-gamma-mediated signaling pathway 4/427 1.39E-03 GO:0010634 positive regulation of epithelial cell migration 10/427 1.47E-03 GO:0001961 positive regulation of cytokine-mediated signaling 5/427 3.49E-03 pathway response to oxygen radical 4/427 5.00E-03 GO:0000305 response to oxygen radical 4/427 5.00E-03 GO:0014909 smooth muscle cell migration 7/427 5.90E-03 GO:001059 positive regulation of response to cytokine stimulus 5/427 7.82E-03 GO:001059 positive regulation of endothelial cell migration 7/427 6.29E-03 GO:000265 positive regulation of leukocyte proliferation 9/427 7.82E-03 GO:000266 cell uar response to oxidative stress 13/427 1.09E-02 GO:000266 cell chemotaxis 13/427 1.09E-02 GO:000260 adaptive immune response 67/999 1.48E-18 GO:0002250	GO:0060330	regulation of response to interferon-gamma	4/427	3.23E-04
GO:0072593reactive oxygen species metabolic process16/4274.93E-04GO:0060333interferon-gamma-mediated signaling pathway4/4271.39E-03GO:0010634positive regulation of epithelial cell migration10/4271.47E-03GO:0001961positive regulation of cytokine-mediated signaling5/4273.49E-03pathwayresponse to oxygen radical4/4275.00E-03GO:0000305response to oxygen radical4/4275.90E-03GO:001695positive regulation of response to cytokine stimulus5/4275.90E-03GO:0017055positive regulation of endothelial cell migration7/4276.29E-03GO:0007655positive regulation of leukocyte proliferation9/4277.82E-03GO:000266cell ular response to oxidative stress13/4271.09E-02GO:0002676cell chemotaxis13/4271.09E-02GO:0002676elukocyte mediated immunity63/9995.46E-19GO:0002676elukocyte mediated immunity63/9991.86E-18GO:0002676elukocyte migration61/9992.27E-18GO:0002677myeloid leukocyte activation76/9991.66E-16GO:0002674regulation of leukocyte activation44/9993.50E-16GO:0002675regulation of immune effector process61/9991.28E-15GO:0002676regulation of cytokine production35/9991.48E-18GO:0002677regulation of cytokine production35/9991.28E-15GO:0002678regulation of cytokine production <t< td=""><td>GO:0060334</td><td>regulation of interferon-gamma-mediated signaling</td><td>4/427</td><td>3.23E-04</td></t<>	GO:0060334	regulation of interferon-gamma-mediated signaling	4/427	3.23E-04
GO:0060333interferon-gamma-mediated signaling pathway4/4271.39E-03GO:0010634positive regulation of epithelial cell migration10/4271.47E-03GO:0001961positive regulation of cytokine-mediated signaling pathway5/4273.49E-03GO:0000305response to oxygen radical4/4275.00E-03GO:00060760positive regulation of response to cytokine stimulus5/4275.76E-03GO:0010595positive regulation of endothelial cell migration7/4276.29E-03GO:0010595positive regulation of endothelial cell migration7/4277.82E-03GO:0007065positive regulation of leukocyte proliferation9/4277.82E-03GO:0003265cell chemotaxis13/4271.09E-02GO:000243leukocyte mediated immunity63/9995.46E-19GO:0002250adaptive immune response67/9991.48E-18GO:0002250adaptive imgration61/9992.27E-18GO:0002264regulation of leukocyte activation76/9991.66E-16GO:0002274myeloid leukocyte activation76/9991.28E-15GO:0002677regulation of leukocyte activation35/9991.38E-15GO:0002678granulocyte migration31/9991.49E-13GO:0002679regulation of cytokine production63/9991.28E-15GO:0002677regulation of immune effector process61/9991.28E-15GO:0002678granulocyte migration31/9991.49E-13GO:0002679granulocyte migration31/999 <td></td> <td>pathway</td> <td></td> <td></td>		pathway		
GO:0010634positive regulation of epithelial cell migration10/4271.47E-03GO:0001961positive regulation of cytokine-mediated signaling pathway5/4273.49E-03GO:0000305response to oxygen radical4/4275.00E-03GO:0060760positive regulation of response to cytokine stimulus5/4275.76E-03GO:0014909smooth muscle cell migration7/4276.29E-03GO:0010555positive regulation of endothelial cell migration7/4276.29E-03GO:0070665positive regulation of leukocyte proliferation9/4277.82E-03GO:0034599cellular response to oxidative stress13/4271.09E-02GO:0002443leukocyte mediated immunity63/9995.46E-19GO:000250adaptive immune response67/9991.48E-18GO:0002250adaptive imgration61/9992.27E-18GO:000259regulation of leukocyte activation76/9991.66E-16GO:0002694regulation of leukocyte activation76/9991.62E-16GO:0002697regulation of immune effector process61/9993.50E-16GO:0002697regulation of immune effector process61/9991.48E-15GO:000753granulocyte migration35/9991.48E-15GO:0002697regulation of cytokine production63/9991.28E-15GO:0002697regulation of cytokine production63/9991.28E-15GO:0002697regulation of cytokine production63/9991.28E-15GO:0002698regulation of cytokine product	GO:0072593	reactive oxygen species metabolic process	16/427	4.93E-04
GO:0001961 positive regulation of cytokine-mediated signaling pathway 5/427 3.49E-03 GO:000305 response to oxygen radical 4/427 5.00E-03 GO:0060760 positive regulation of response to cytokine stimulus 5/427 5.76E-03 GO:0014909 smooth muscle cell migration 7/427 5.90E-03 GO:0010555 positive regulation of endothelial cell migration 7/427 6.29E-03 GO:0070665 positive regulation of leukocyte proliferation 9/427 7.82E-03 GO:0006326 cell chemotaxis 13/427 7.90E-03 GO:0002431 leukocyte mediated immunity 63/999 5.46E-19 GO:0003055 leukocyte chemotaxis 48/999 8.64E-19 GO:0002250 adaptive immune response 67/999 1.48E-18 GO:0003050 leukocyte migration 61/999 2.27E-18 GO:000264 regulation of leukocyte activation 76/999 1.66E-16 GO:000267 regulation of immune effector process 61/999 1.28E-15 GO:000267 regulation of immune frector process 61/999 <	GO:0060333	interferon-gamma-mediated signaling pathway	4/427	1.39E-03
pathway GO:000305 response to oxygen radical 4/427 5.00E-03 GO:0060760 positive regulation of response to cytokine stimulus 5/427 5.76E-03 GO:0014909 smooth muscle cell migration 7/427 5.90E-03 GO:0010555 positive regulation of endothelial cell migration 7/427 6.29E-03 GO:0070665 positive regulation of leukocyte proliferation 9/427 7.82E-03 GO:0060326 cell chemotaxis 13/427 1.09E-02 GO:0002431 leukocyte mediated immunity 63/999 5.46E-19 GO:000250 adaptive immune response 67/999 1.48E-18 GO:000250 adaptive immune response 67/999 1.86E-18 GO:000250 adaptive migration 61/999 2.27E-18 GO:000264 regulation of leukocyte migration 45/999 3.50E-16 GO:00274 myeloid leukocyte activation 76/999 1.88E-15 GO:00267 regulation of immune effector process 61/999 1.28E-15 GO:00267 regulation of immune effector process 61/999 <td>GO:0010634</td> <td>positive regulation of epithelial cell migration</td> <td>10/427</td> <td>1.47E-03</td>	GO:0010634	positive regulation of epithelial cell migration	10/427	1.47E-03
GO:0000305 response to oxygen radical 4/427 5.00E-03 GO:0060760 positive regulation of response to cytokine stimulus 5/427 5.76E-03 GO:0014909 smooth muscle cell migration 7/427 5.90E-03 GO:0010595 positive regulation of endothelial cell migration 7/427 6.29E-03 GO:007665 positive regulation of leukocyte proliferation 9/427 7.82E-03 GO:0060326 cell chemotaxis 13/427 7.90E-03 GO:0002443 leukocyte mediated immunity 63/999 5.46E-19 GO:000250 adaptive immune response 67/999 1.48E-18 GO:0003055 leukocyte chemotaxis 56/999 1.86E-18 GO:0002260 adaptive imgration 61/999 2.27E-18 GO:0002694 regulation of leukocyte activation 76/999 1.66E-16 GO:0002274 mycloid leukocyte activation 76/999 1.38E-15 GO:0002697 regulation of immune effector process 61/999 1.28E-15 GO:0007503 granulocyte migration 35/999 1.48E-18	GO:0001961	positive regulation of cytokine-mediated signaling	5/427	3.49E-03
GO:0060760 positive regulation of response to cytokine stimulus 5/427 5.76E-03 GO:0014909 smooth muscle cell migration 7/427 5.90E-03 GO:0010595 positive regulation of endothelial cell migration 7/427 6.29E-03 GO:0070665 positive regulation of leukocyte proliferation 9/427 7.82E-03 GO:0034599 cellular response to oxidative stress 13/427 7.90E-03 GO:00060326 cell chemotaxis 13/427 1.09E-02 GO:0002443 leukocyte mediated immunity 63/999 5.46E-19 GO:000250 adaptive immune response 67/999 1.48E-18 GO:000250 adaptive migration 61/999 2.27E-18 GO:0002694 regulation of leukocyte activation 76/999 1.66E-16 GO:0002697 regulation of immune effector process 61/999 3.50E-16 GO:0002697 regulation of immune effector process 61/999 1.28E-15 GO:0002697 regulation of cytokine production 35/999 1.38E-15 GO:0002697 regulation of cytokine production 63/999		pathway		
GO:0014909smooth muscle cell migration7/4275.90E-03GO:0010595positive regulation of endothelial cell migration7/4276.29E-03GO:0070665positive regulation of leukocyte proliferation9/4277.82E-03GO:0034599cellular response to oxidative stress13/4277.90E-03GO:0060326cell chemotaxis13/4271.09E-02GO:0002443leukocyte mediated immunity63/9995.46E-19GO:000250adaptive immune response67/9991.48E-18GO:000250adaptive immune response67/9991.86E-18GO:0002694regulation of leukocyte activation61/9992.27E-18GO:0002694regulation of leukocyte activation76/9991.66E-16GO:0002274myeloid leukocyte activation76/9991.38E-15GO:0002697regulation of immune effector process61/9991.28E-15GO:0007530granulocyte migration35/9991.49E-15GO:0007530granulocyte hemotaxis32/9992.81E-15GO:001621granulocyte chemotaxis32/9992.81E-15GO:000253activation of cytokine production63/9991.23E-13GO:000253activation of cytokine production63/9992.88E-13GO:0002253activation of cytokine production63/9992.82E-13GO:0002253activation of immune response57/9992.48E-13GO:0002253activation of leukocyte mediated immunity40/9996.98E-13GO:0002253activation of immune re	GO:0000305	response to oxygen radical	4/427	5.00E-03
GO:0010595positive regulation of endothelial cell migration $7/427$ $6.29E-03$ GO:0070665positive regulation of leukocyte proliferation $9/427$ $7.82E-03$ GO:0034599cellular response to oxidative stress $13/427$ $7.90E-03$ GO:0060326cell chemotaxis $13/427$ $1.09E-02$ GO:0002443leukocyte mediated immunity $63/999$ $5.46E-19$ GO:0002250adaptive immune response $67/999$ $1.48E-18$ GO:0060326cell chemotaxis $56/999$ $1.86E-18$ GO:0002250adaptive inigration $61/999$ $2.27E-18$ GO:00050900leukocyte migration $61/999$ $2.27E-18$ GO:0002694regulation of leukocyte activation $76/999$ $1.66E-16$ GO:0002274myeloid leukocyte activation $76/999$ $1.38E-15$ GO:0002697regulation of immune effector process $61/999$ $1.38E-15$ GO:00071621granulocyte migration $35/999$ $1.38E-15$ GO:0001819positive regulation of cytokine production $63/999$ $2.31E-15$ GO:0002253activation of cytokine production $63/999$ $2.32E-13$ GO:0002174regulation of immune response $57/999$ $2.00E-13$ GO:0002253activation of cytokine production $63/999$ $2.32E-13$ GO:0002253activation of immune response $57/999$ $2.00E-13$ GO:0002253activation of immune response $57/999$ $2.00E-13$ GO:0002253activation of immune response $57/999$ 2	GO:0060760	positive regulation of response to cytokine stimulus	5/427	5.76E-03
GO:0070665 positive regulation of leukocyte proliferation 9/427 7.82E-03 GO:0034599 cellular response to oxidative stress 13/427 7.90E-03 GO:0060326 cell chemotaxis 13/427 1.09E-02 GO:0002443 leukocyte mediated immunity 63/999 5.46E-19 GO:0002250 adaptive immune response 67/999 1.48E-18 GO:0060326 cell chemotaxis 56/999 1.86E-18 GO:0002250 adaptive immune response 67/999 1.48E-18 GO:00060326 cell chemotaxis 56/999 1.86E-18 GO:00050900 leukocyte migration 61/999 2.27E-18 GO:0002694 regulation of leukocyte activation 76/999 1.66E-16 GO:0002697 regulation of immune effector process 61/999 1.28E-15 GO:00071621 granulocyte chemotaxis 22/999 2.81E-15 GO:00071621 granulocyte migration 31/999 6.13E-15 GO:0002253 activation of cytokine production 63/999 1.23E-13 GO:00071621 granulocyte	GO:0014909	smooth muscle cell migration	7/427	5.90E-03
GO:0034599 cellular response to oxidative stress 13/427 7.90E-03 GO:0060326 cell chemotaxis 13/427 1.09E-02 GO:0002443 leukocyte mediated immunity 63/999 5.46E-19 GO:0002250 adaptive immune response 67/999 1.48E-18 GO:0002250 adaptive immune response 67/999 1.48E-18 GO:0002260 cell chemotaxis 56/999 1.86E-18 GO:00050900 leukocyte migration 61/999 2.27E-18 GO:0002694 regulation of leukocyte activation 76/999 1.66E-16 GO:0002697 regulation of immune effector process 61/999 3.50E-16 GO:0002697 regulation of immune effector process 61/999 1.28E-15 GO:0002697 regulation of immune effector process 61/999 1.28E-15 GO:00071621 granulocyte migration 35/999 1.38E-15 GO:00071621 granulocyte chemotaxis 32/999 2.81E-15 GO:0002253 activation of cytokine production 63/999 1.23E-13 GO:0002253 activation of immune response 57/999 2.00E-13	GO:0010595	positive regulation of endothelial cell migration	7/427	6.29E-03
GO:0060326 cell chemotaxis 13/427 1.09E-02 GO:0002443 leukocyte mediated immunity 63/999 5.46E-19 GO:00030595 leukocyte chemotaxis 48/999 8.64E-19 GO:0002250 adaptive immune response 67/999 1.48E-18 GO:0002260 cell chemotaxis 56/999 1.86E-18 GO:000260 leukocyte migration 61/999 2.27E-18 GO:0002694 regulation of leukocyte activation 76/999 1.66E-16 GO:0002694 regulation of leukocyte activation 76/999 1.28E-15 GO:0002697 regulation of immune effector process 61/999 1.28E-15 GO:0002697 regulation of immune effector process 61/999 1.38E-15 GO:0007503 granulocyte migration 35/999 1.49E-15 GO:00071621 granulocyte chemotaxis 32/999 2.81E-15 GO:0002253 activation of cytokine production 63/999 1.23E-13 GO:0002253 activation of cytokine production 63/999 2.48E-13 GO:0002253 activation of	GO:0070665	positive regulation of leukocyte proliferation	9/427	7.82E-03
GO:0002443 leukocyte mediated immunity 63/999 5.46E-19 GO:0030595 leukocyte chemotaxis 48/999 8.64E-19 GO:0002250 adaptive immune response 67/999 1.48E-18 GO:0060326 cell chemotaxis 56/999 1.86E-18 GO:0007529 myeloid leukocyte migration 61/999 2.27E-18 GO:0002694 regulation of leukocyte activation 76/999 1.66E-16 GO:0002697 regulation of leukocyte activation 44/999 3.50E-16 GO:0002697 regulation of immune effector process 61/999 1.28E-15 GO:0002697 regulation of immune effector process 61/999 1.38E-15 GO:0002697 regulation of immune effector process 61/999 1.38E-15 GO:0071621 granulocyte migration 35/999 1.38E-15 GO:0071621 granulocyte chemotaxis 32/999 2.81E-15 GO:0001819 positive regulation of cytokine production 63/999 1.23E-13 GO:0002253 activation of immune response 57/999 2.00E-13 GO:0002253 activation of immune response 57/999 2.48E-13	GO:0034599	cellular response to oxidative stress	13/427	7.90E-03
GO:0030595 leukocyte chemotaxis 48/999 8.64E-19 GO:0002250 adaptive immune response 67/999 1.48E-18 GO:0060326 cell chemotaxis 56/999 1.86E-18 GO:0050900 leukocyte migration 61/999 2.27E-18 GO:0002694 regulation of leukocyte migration 45/999 3.75E-18 GO:0002694 regulation of leukocyte activation 76/999 1.66E-16 GO:0002697 regulation of immune effector process 61/999 1.28E-15 GO:0002697 regulation of immune effector process 61/999 1.38E-15 GO:0070530 granulocyte migration 35/999 1.38E-15 GO:0071621 granulocyte chemotaxis 32/999 2.81E-15 GO:0001819 positive regulation of cytokine production 63/999 1.23E-13 GO:000253 activation of immune response 57/999 2.00E-13 GO:000253 activation of immune response 57/999 2.48E-13 GO:000269 phagocytosis 39/999 2.89E-13 GO:0002703 regulation of leukocyte mediated immunity 40/999 6.98E-13 <t< td=""><td>GO:0060326</td><td>cell chemotaxis</td><td>13/427</td><td>1.09E-02</td></t<>	GO:0060326	cell chemotaxis	13/427	1.09E-02
GO:0002250 adaptive immune response 67/999 1.48E-18 GO:0060326 cell chemotaxis 56/999 1.86E-18 GO:0050900 leukocyte migration 61/999 2.27E-18 GO:0002694 regulation of leukocyte migration 45/999 3.75E-18 GO:0002694 regulation of leukocyte activation 76/999 1.66E-16 GO:0002697 regulation of leukocyte activation 44/999 3.50E-16 GO:0002697 regulation of immune effector process 61/999 1.38E-15 GO:0002697 regulation of immune effector process 61/999 1.38E-15 GO:0002697 granulocyte migration 35/999 1.49E-15 GO:0071621 granulocyte chemotaxis 32/999 2.81E-15 GO:0001819 positive regulation of cytokine production 63/999 1.23E-13 GO:0002253 activation of immune response 57/999 2.00E-13 GO:0002253 activation of immune response 57/999 2.48E-13 GO:0006909 phagocytosis 39/999 2.89E-13 GO:0002703 regulation of leukocyte mediated immunity 40/999 6.98E-13	GO:0002443	leukocyte mediated immunity	63/999	5.46E-19
GO:0060326 cell chemotaxis 56/999 1.86E-18 GO:0050900 leukocyte migration 61/999 2.27E-18 GO:0002694 myeloid leukocyte migration 45/999 3.75E-18 GO:0002274 myeloid leukocyte activation 76/999 1.66E-16 GO:0002697 regulation of leukocyte activation 44/999 3.50E-16 GO:0002697 regulation of immune effector process 61/999 1.28E-15 GO:0002697 regulation of immune effector process 61/999 1.38E-15 GO:0030593 neutrophil chemotaxis 29/999 1.38E-15 GO:0071621 granulocyte migration 35/999 1.49E-15 GO:0001819 positive regulation of cytokine production 63/999 1.23E-13 GO:0002253 activation of immune response 57/999 2.00E-13 GO:0002253 activation of immune response 57/999 2.48E-13 GO:0006909 phagocytosis 39/999 2.89E-13 GO:0002703 regulation of leukocyte mediated immunity 40/999 6.98E-13 GO:0031349 positive regulation of defense response 52/999 9.71E-13 <td>GO:0030595</td> <td>leukocyte chemotaxis</td> <td>48/999</td> <td>8.64E-19</td>	GO:0030595	leukocyte chemotaxis	48/999	8.64E-19
GO:0050900 leukocyte migration 61/999 2.27E-18 GO:0097529 myeloid leukocyte migration 45/999 3.75E-18 GO:0002694 regulation of leukocyte activation 76/999 1.66E-16 GO:0002274 myeloid leukocyte activation 44/999 3.50E-16 GO:0002697 regulation of immune effector process 61/999 1.28E-15 GO:0030593 neutrophil chemotaxis 29/999 1.38E-15 GO:0071621 granulocyte migration 35/999 1.49E-15 GO:0001819 positive regulation of cytokine production 63/999 1.23E-13 GO:0019221 cytokine-mediated signaling pathway 56/999 2.48E-13 GO:0006909 phagocytosis 39/999 2.89E-13 GO:0002703 regulation of leukocyte mediated immunity 40/999 6.98E-13	GO:0002250	adaptive immune response	67/999	1.48E-18
GO:0097529myeloid leukocyte migration45/9993.75E-18GO:0002694regulation of leukocyte activation76/9991.66E-16GO:0002274myeloid leukocyte activation44/9993.50E-16GO:0002697regulation of immune effector process61/9991.28E-15GO:0030593neutrophil chemotaxis29/9991.38E-15GO:0097530granulocyte migration35/9991.49E-15GO:0071621granulocyte chemotaxis32/9992.81E-15GO:0001819positive regulation of cytokine production63/9991.23E-13GO:0019221cytokine-mediated signaling pathway56/9992.48E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0060326	cell chemotaxis	56/999	1.86E-18
GO:0002694regulation of leukocyte activation76/9991.66E-16GO:0002274myeloid leukocyte activation44/9993.50E-16GO:0002697regulation of immune effector process61/9991.28E-15GO:0030593neutrophil chemotaxis29/9991.38E-15GO:0097530granulocyte migration35/9991.49E-15GO:0071621granulocyte chemotaxis32/9992.81E-15GO:1990266neutrophil migration31/9996.13E-15GO:0001819positive regulation of cytokine production63/9991.23E-13GO:0002253activation of immune response57/9992.00E-13GO:0006909phagocytosis39/9992.89E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0050900	leukocyte migration	61/999	2.27E-18
GO:0002274myeloid leukocyte activation44/9993.50E-16GO:0002697regulation of immune effector process61/9991.28E-15GO:0030593neutrophil chemotaxis29/9991.38E-15GO:0097530granulocyte migration35/9991.49E-15GO:0071621granulocyte chemotaxis32/9992.81E-15GO:1990266neutrophil migration31/9996.13E-15GO:0001819positive regulation of cytokine production63/9991.23E-13GO:0002253activation of immune response57/9992.00E-13GO:0019221cytokine-mediated signaling pathway56/9992.48E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0097529	myeloid leukocyte migration	45/999	3.75E-18
GO:0002697regulation of immune effector process61/9991.28E-15GO:0030593neutrophil chemotaxis29/9991.38E-15GO:0097530granulocyte migration35/9991.49E-15GO:0071621granulocyte chemotaxis32/9992.81E-15GO:1990266neutrophil migration31/9996.13E-15GO:0001819positive regulation of cytokine production63/9991.23E-13GO:0002253activation of immune response57/9992.00E-13GO:0019221cytokine-mediated signaling pathway56/9992.48E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0002694	regulation of leukocyte activation	76/999	1.66E-16
GO:0030593neutrophil chemotaxis29/9991.38E-15GO:0097530granulocyte migration35/9991.49E-15GO:0071621granulocyte chemotaxis32/9992.81E-15GO:1990266neutrophil migration31/9996.13E-15GO:0001819positive regulation of cytokine production63/9991.23E-13GO:0002253activation of immune response57/9992.00E-13GO:0019221cytokine-mediated signaling pathway56/9992.48E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0002274	myeloid leukocyte activation	44/999	3.50E-16
GO:0097530granulocyte migration35/9991.49E-15GO:0071621granulocyte chemotaxis32/9992.81E-15GO:1990266neutrophil migration31/9996.13E-15GO:0001819positive regulation of cytokine production63/9991.23E-13GO:0002253activation of immune response57/9992.00E-13GO:0019221cytokine-mediated signaling pathway56/9992.48E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0002697	regulation of immune effector process	61/999	1.28E-15
GO:0071621granulocyte chemotaxis32/9992.81E-15GO:1990266neutrophil migration31/9996.13E-15GO:0001819positive regulation of cytokine production63/9991.23E-13GO:0002253activation of immune response57/9992.00E-13GO:0019221cytokine-mediated signaling pathway56/9992.48E-13GO:0006909phagocytosis39/9992.89E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0030593	neutrophil chemotaxis	29/999	1.38E-15
GO:1990266neutrophil migration31/9996.13E-15GO:0001819positive regulation of cytokine production63/9991.23E-13GO:0002253activation of immune response57/9992.00E-13GO:0019221cytokine-mediated signaling pathway56/9992.48E-13GO:0006909phagocytosis39/9992.89E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0097530	granulocyte migration	35/999	1.49E-15
GO:0001819positive regulation of cytokine production63/9991.23E-13GO:0002253activation of immune response57/9992.00E-13GO:0019221cytokine-mediated signaling pathway56/9992.48E-13GO:0006909phagocytosis39/9992.89E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0071621	granulocyte chemotaxis	32/999	2.81E-15
GO:0002253activation of immune response57/9992.00E-13GO:0019221cytokine-mediated signaling pathway56/9992.48E-13GO:0006909phagocytosis39/9992.89E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:1990266	neutrophil migration	31/999	6.13E-15
GO:0019221cytokine-mediated signaling pathway56/9992.48E-13GO:0006909phagocytosis39/9992.89E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0001819	positive regulation of cytokine production	63/999	1.23E-13
GO:0006909phagocytosis39/9992.89E-13GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0002253	activation of immune response	57/999	2.00E-13
GO:0002703regulation of leukocyte mediated immunity40/9996.98E-13GO:0031349positive regulation of defense response52/9999.71E-13	GO:0019221	cytokine-mediated signaling pathway	56/999	2.48E-13
GO:0031349 positive regulation of defense response 52/999 9.71E-13	GO:0006909	phagocytosis	39/999	2.89E-13
	GO:0002703	regulation of leukocyte mediated immunity	40/999	6.98E-13
GO:0002444 myeloid leukocyte mediated immunity 26/999 1.03E-12	GO:0031349	positive regulation of defense response	52/999	9.71E-13
	GO:0002444	myeloid leukocyte mediated immunity	26/999	1.03E-12

GO:0046651	lymphocyte proliferation	48/999	3.72E-12
GO:0006959	humoral immune response	32/999	3.79E-12
GO:0032943	mononuclear cell proliferation	48/999	4.90E-12
GO:0050663	cytokine secretion	40/999	9.05E-12
GO:0042110	T cell activation	64/999	1.07E-11
GO:0050670	regulation of lymphocyte proliferation	41/999	1.08E-11
GO:0032944	regulation of mononuclear cell proliferation	41/999	1.47E-11
GO:0002696	positive regulation of leukocyte activation	49/999	1.49E-11
GO:0050727	regulation of inflammatory response	49/999	1.69E-11
GO:0070661	leukocyte proliferation	48/999	2.11E-11
GO:0002449	lymphocyte mediated immunity	42/999	2.28E-11
GO:0002526	acute inflammatory response	28/999	2.51E-11
GO:0002764	immune response-regulating signaling pathway	48/999	3.50E-11
GO:0070663	regulation of leukocyte proliferation	41/999	3.64E-11
GO:0002275	myeloid cell activation involved in immune	23/999	4.86E-11
	response		
GO:0002886	regulation of myeloid leukocyte mediated immunity	19/999	5.18E-11
GO:0051249	regulation of lymphocyte activation	57/999	6.03E-11
GO:0002685	regulation of leukocyte migration	36/999	6.51E-11
GO:0002690	positive regulation of leukocyte chemotaxis	24/999	6.70E-11
GO:0002688	regulation of leukocyte chemotaxis	27/999	7.10E-11
GO:0002819	regulation of adaptive immune response	32/999	7.79E-11
GO:0045088	regulation of innate immune response	42/999	8.23E-11
GO:0034612	response to tumor necrosis factor	34/999	1.14E-10
GO:0002366	leukocyte activation involved in immune response	40/999	1.20E-10
GO:0019724	B cell mediated immunity	27/999	1.40E-10
GO:0002687	positive regulation of leukocyte migration	30/999	1.81E-10
GO:0002263	cell activation involved in immune response	40/999	2.10E-10
GO:0050764	regulation of phagocytosis	23/999	2.54E-10
GO:0002521	leukocyte differentiation	66/999	3.03E-10
GO:0034341	response to interferon-gamma	28/999	3.36E-10
GO:0016064	immunoglobulin mediated immune response	26/999	4.85E-10
GO:0045807	positive regulation of endocytosis	31/999	6.05E-10
GO:0007159	leukocyte cell-cell adhesion	46/999	7.74E-10
GO:0002757	immune response-activating signal transduction	44/999	7.84E-10
GO:0050707	regulation of cytokine secretion	34/999	9.26E-10
GO:0030100	regulation of endocytosis	40/999	1.53E-09
GO:0002821	positive regulation of adaptive immune response	24/999	1.97E-09
GO:0042098	T cell proliferation	35/999	2.51E-09
GO:1903555	regulation of tumor necrosis factor superfamily	28/999	2.68E-09
	cytokine production		
GO:0002705	positive regulation of leukocyte mediated immunity	26/999	3.65E-09
GO:0071706	tumor necrosis factor superfamily cytokine	28/999	4.53E-09
	production		

		10/000	
GO:0050766	positive regulation of phagocytosis	18/999	4.53E-09
GO:0071674	mononuclear cell migration	19/999	6.33E-09
GO:1903037	regulation of leukocyte cell-cell adhesion	41/999	6.44E-09
GO:0006911	phagocytosis, engulfment	16/999	8.32E-09
GO:0032680	regulation of tumor necrosis factor production	27/999	8.37E-09
GO:0002446	neutrophil mediated immunity	13/999	1.00E-08
GO:0050900	leukocyte migration	146/3441	1.19E-30
GO:0050778	positive regulation of immune response	205/3441	5.97E-29
GO:0060326	cell chemotaxis	122/3441	1.09E-24
GO:0001819	positive regulation of cytokine production	164/3441	1.41E-24
GO:0002274	myeloid leukocyte activation	97/3441	9.33E-24
GO:0097529	myeloid leukocyte migration	91/3441	2.70E-22
GO:0030595	leukocyte chemotaxis	96/3441	5.67E-22
GO:0002253	activation of immune response	141/3441	1.19E-21
GO:0031349	positive regulation of defense response	130/3441	1.33E-21
GO:0030335	positive regulation of cell migration	184/3441	8.32E-21
GO:0002250	adaptive immune response	143/3441	1.80E-20
GO:0002685	regulation of leukocyte migration	91/3441	4.28E-20
GO:0045088	regulation of innate immune response	108/3441	1.82E-19
GO:0002443	leukocyte mediated immunity	128/3441	2.17E-19
GO:0002764	immune response-regulating signaling pathway	123/3441	2.74E-19
GO:0002521	leukocyte differentiation	183/3441	4.29E-19
GO:0097530	granulocyte migration	69/3441	4.45E-19
GO:0006909	phagocytosis	86/3441	1.87E-18
GO:0002757	immune response-activating signal transduction	117/3441	2.09E-18
GO:0050663	cytokine secretion	95/3441	2.12E-18
GO:0050727	regulation of inflammatory response	120/3441	2.83E-17
GO:0002687	positive regulation of leukocyte migration	71/3441	4.62E-17
GO:0002694	regulation of leukocyte activation	169/3441	5.72E-17
GO:0071216	cellular response to biotic stimulus	86/3441	6.29E-17
GO:0019221	cytokine-mediated signaling pathway	130/3441	8.14E-17
GO:0098542	defense response to other organism	153/3441	8.33E-17
GO:0050707	regulation of cytokine secretion	84/3441	1.61E-16
GO:0002460	adaptive immune response based on somatic	102/3441	2.38E-16
	recombination of immune receptors built from		
	immunoglobulin superfamily domains		
GO:0032103	positive regulation of response to external stimulus	111/3441	3.13E-16
GO:0009611	response to wounding	155/3441	3.40E-16
GO:1990266	neutrophil migration	57/3441	3.64E-16
GO:0042110	T cell activation	159/3441	7.36E-16
GO:0042110 GO:0032635	interleukin-6 production	67/3441	8.39E-16
GO:0032033 GO:0045089	positive regulation of innate immune response	88/3441	9.07E-16
GO:0043089 GO:0007159	leukocyte cell-cell adhesion	117/3441	9.07E-10 1.20E-15
GO:0007139 GO:0032675	regulation of interleukin-6 production	64/3441	1.20E-13 2.09E-15
00.0032073	regulation of memory production	דד נ ידט 1	2.071-15

GO:0002688	regulation of leukocyte chemotaxis	58/3441	7.25E-15
GO:0050715	positive regulation of cytokine secretion	64/3441	1.50E-14
GO:0002697	regulation of immune effector process	126/3441	1.52E-14
GO:0071621	granulocyte chemotaxis	56/3441	1.85E-14
GO:0002366	leukocyte activation involved in immune response	93/3441	2.68E-14
GO:0002263	cell activation involved in immune response	94/3441	3.29E-14
GO:0070661	leukocyte proliferation	111/3441	4.90E-14
GO:0032943	mononuclear cell proliferation	107/3441	8.72E-14
GO:0046651	lymphocyte proliferation	106/3441	1.33E-13
GO:0002224	toll-like receptor signaling pathway	50/3441	1.75E-13
GO:0002690	positive regulation of leukocyte chemotaxis	48/3441	2.49E-13
GO:0030198	extracellular matrix organization	88/3441	3.41E-13
GO:1903555	regulation of tumor necrosis factor superfamily	64/3441	3.53E-13
	cytokine production		
GO:0002573	myeloid leukocyte differentiation	84/3441	3.99E-13
GO:0042060	wound healing	119/3441	4.35E-13
GO:0051249	regulation of lymphocyte activation	136/3441	7.27E-13
GO:0043410	positive regulation of MAPK cascade	164/3441	1.11E-12
GO:0071706	tumor necrosis factor superfamily cytokine	64/3441	1.23E-12
	production		
GO:0002699	positive regulation of immune effector process	81/3441	1.52E-12
GO:0032680	regulation of tumor necrosis factor production	62/3441	2.08E-12
GO:0002218	activation of innate immune response	64/3441	2.75E-12
GO:0002449	lymphocyte mediated immunity	90/3441	3.00E-12
GO:1902105	regulation of leukocyte differentiation	101/3441	4.18E-12
GO:0032612	interleukin-1 production	43/3441	4.50E-12
GO:0032640	tumor necrosis factor production	62/3441	4.69E-12
GO:0030593	neutrophil chemotaxis	45/3441	5.49E-12
GO:0032611	interleukin-1 beta production	37/3441	1.08E-11
GO:0002758	innate immune response-activating signal	57/3441	2.15E-11
	transduction		
GO:0002703	regulation of leukocyte mediated immunity	77/3441	3.13E-11
GO:0001776	leukocyte homeostasis	51/3441	4.33E-11
GO:0034612	response to tumor necrosis factor	70/3441	5.49E-11
GO:0032609	interferon-gamma production	52/3441	6.43E-11
GO:0032649	regulation of interferon-gamma production	48/3441	7.28E-11
GO:0072593	reactive oxygen species metabolic process	92/3441	7.71E-11
GO:0050729	positive regulation of inflammatory response	51/3441	1.03E-10
GO:1903037	regulation of leukocyte cell-cell adhesion	96/3441	1.12E-10