SUPPLEMENTAL TABLE 1. Categorized biological processes in the kidney cortex

Categories and subcategories	²¹¹ At activity [kBq]: Absorbed dose [mGy]:	0.064 0.24	0.64 2.4	1.8 6.9	14 52	42 160	
			(score	_			No. (filtered transcripts
DNA integrity		4	0	0	0	0	109
Damage and repair		0	0	0	0	0	30
none							
Chromatin organization		4	0	0	0	0	79
chromatin modification		4					
Gene expression integrity		4	112	0	0	0	661
Transcription		2	103	0	0	0	567
regulation of transcription; DNA-depende	ent		52				
transcription			51				
transcription from RNA polymerase II pro	omoter	2					
RNA processing		0	9	0	0	0	64
mRNA processing			9				
Translation		2	0	0	0	0	30
regulation of translational initiation		2			_		
Cellular integrity		75	143	11	8	50	1054
Physico-chemical environment		2	35	5	6	22	174
calcium ion homeostasis				2		0	
chloride transport		0	5	2		2	
copper ion homeostasis		2	25				
ion transport			25		_	12	
potassium ion transport			_		2		
regulation of pH			3		1	7	
sodium ion transport			2		3	,	
thermoregulation			2	1			
water homeostasis						1	400
Cytoskeleton & motility barbed-end actin filament capping		0	0	0	0	4	139
						2	
regulation of cell migration Extracellular matrix & CM					_	2	450
calcium-independent cell-cell adhesion		0	0	0	0	2 2	152
Supramolecular maintenance		73	108	6	2	22	589
amiloride transport		73	100	1	_		309
amino acid transport			5	2	2	3	
endosome to lysosome transport		2	2				
intracellular protein transport		7	9				
negative regulation of enzyme activity		•	-	1			
protein complex assembly				2		2	
protein folding			14				
transport		64	78			17	
Cell cycle and differentiation		9	8	9	0	3	510
Cell cycle regulation		0	0	0	0	0	290
none							
Differentiation & aging		7	4	7	0	0	50

erythrocyte maturation			1			
eye photoreceptor cell differentiation			1			
keratinocyte differentiation	3	4				
neuron differentiation	4		2			
neuron maturation			1			
positive regulation of axon extension			1			
regulation of axon extension			1			
Apoptotic cell death	2	2	0	0	3	155
apoptotic mitochondrial changes	2	2				
negative regulation of apoptosis					3	
Cell death	0	0	2	0	0	13
cytolysis			2			·
General	0	2 2	0	0	0	2
regulation of cellular process Cell communication	2	10	12	1	5	381
	_	_		-		
Intercellular signaling	2	2	3	0	0	16
nerve-nerve synaptic transmission	2	•				
neuromuscular synaptic transmission regulation of neuronal synaptic plasticity		2	1			
			2			
synaptic transmission; cholinergic						
Signal transduction cytokine and chemokine mediated signaling pathway	0	8	9 2	1	5	365
ER-nuclear signaling pathway			1			
			1			
gamma-aminobutyric acid signaling pathway						
positive regulation of signal transduction			1			
positive regulation of small GTPase mediated signal transduction		8	•		1	
protein amino acid dephosphorylation		O	3			
Toll signaling pathway transmembrane receptor protein tyrosine kinase signaling			1			
pathway					4	
two-component signal transduction system (phosphorelay)	74	04	44	1	•	000
Metabolism	71	81	11	2	2	828
Proteins, amino acids	0	0	1 1	0	0	62
tryptophan catabolism						
Lipids, fatty acids	9	48	5	2	2	292
acetyl-CoA metabolism		2				
acyl-CoA metabolism cholesterol metabolism		4				
fatty acid metabolism	7	6 10				
fatty acid oxidation	,	3				
lipid metabolism lipoprotein metabolism		17	2			
malate metabolism	2		-			
negative regulation of lipoprotein lipase activity	2		1	1	1	
positive regulation of fatty acid metabolism			1	-	-	
positive regulation of lipid metabolism			1	1		
sphingoid catabolism			'	'	1	
1 0 :::::::::::::::::::::::::::::::::::						

steroid metabolism		6				
Carbohydrates	2	0	5	0	0	33
glucose homeostasis			2			
glycogen biosynthesis	2					
negative regulation of gluconeogenesis			1			
positive regulation of glucose import			1			
response to glucose stimulus			1			
Signaling molecules	0	2	0	0	0	18
positive regulation of nitric oxide biosynthesis		2				
Nucleic acid-related	0	0	0	0	0	32
none						
Other	2	2	0	0	0	41
retinoic acid metabolism	2	2				
General	58	29	0	0	0	350
ATP biosynthesis						
ATP synthesis coupled proton transport						
cellular respiration						
electron transport	27	29				
energy reserve metabolism						
metabolism	28					
oxygen transport	3					
regulation of metabolism						
Stress responses	2	13	37	5	21	450
	_	_	•	^	^	0.4
Oxidative stress response	0	0	0	0	0	24
none	0	0	U			
	0	0	0	0	0	41
none						
none Inflammatory response						
none Inflammatory response none	0	0	0	0	0	41
none Inflammatory response none Immune response	0	0	0 36	0	0 21	41
none Inflammatory response none Immune response defense response	0	0	0 36 8	0	0 21 4	41
none Inflammatory response none Immune response defense response immune response	0	0	0 36 8 14	0	0 21 4	41
none Inflammatory response none Immune response defense response immune response innate immune response	0	0	36 8 14 4 2 1	0	0 21 4 10	41
Inflammatory response none Immune response defense response immune response innate immune response positive regulation of immune response	0	0	36 8 14 4 2	0	21 4 10	41
Inflammatory response none Immune response defense response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis	0	0	36 8 14 4 2 1 2 2	0	0 21 4 10	41
Inflammatory response none Immune response defense response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis positive regulation of T cell differentiation	0	0	36 8 14 4 2 1 2	0	21 4 10 2	41
Inflammatory response none Immune response defense response immune response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis positive regulation of T cell differentiation positive thymic T cell selection	0	0	36 8 14 4 2 1 2 2	0	21 4 10 2	41
Inflammatory response none Immune response defense response immune response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis positive regulation of T cell differentiation positive thymic T cell selection protection from natural killer cell mediated cytotoxicity	0	0	0 36 8 14 4 2 1 2 2	0	21 4 10 2 2 2	41
Inflammatory response none Immune response defense response immune response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis positive regulation of T cell differentiation positive thymic T cell selection protection from natural killer cell mediated cytotoxicity regulation of interleukin-6 biosynthesis regulation of macrophage activation Other	2	2	0 36 8 14 4 2 1 2 2 1	0 4 4	21 4 10 2 2 2	41
Inflammatory response none Immune response defense response immune response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis positive regulation of T cell differentiation positive thymic T cell selection protection from natural killer cell mediated cytotoxicity regulation of interleukin-6 biosynthesis regulation of macrophage activation	0 2	0 2	0 36 8 14 4 2 1 2 2 1 1	0 4 4	0 21 4 10 2 2 2 2	298
Inflammatory response none Immune response defense response immune response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis positive regulation of T cell differentiation positive thymic T cell selection protection from natural killer cell mediated cytotoxicity regulation of interleukin-6 biosynthesis regulation of macrophage activation Other	0 2	0 2	0 36 8 14 4 2 1 2 2 1 1 1	0 4 4	0 21 4 10 2 2 2 2	298
Inflammatory response none Immune response defense response immune response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis positive regulation of T cell differentiation positive thymic T cell selection protection from natural killer cell mediated cytotoxicity regulation of interleukin-6 biosynthesis regulation of macrophage activation Other cellular response to starvation	0 2	2 11	0 36 8 14 4 2 1 2 2 1 1	0 4 4	0 21 4 10 2 2 2 2	298
Inflammatory response none Immune response defense response immune response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis positive regulation of T cell differentiation positive thymic T cell selection protection from natural killer cell mediated cytotoxicity regulation of interleukin-6 biosynthesis regulation of macrophage activation Other cellular response to starvation response to heat response to sterol depletion response to unfolded protein	0 2 2 0	2 2 11 4	0 36 8 14 4 2 1 2 2 1 1 1	0 4 4	0 21 4 10 2 2 2 2	298
Inflammatory response none Immune response defense response immune response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis positive regulation of T cell differentiation positive thymic T cell selection protection from natural killer cell mediated cytotoxicity regulation of interleukin-6 biosynthesis regulation of macrophage activation Other cellular response to starvation response to heat response to sterol depletion response to unfolded protein Organismic regulation	0 2 2 0	2 11 4	0 36 8 14 4 2 1 2 2 1 1 1 1	0 4 4	0 21 4 10 2 2 2 1	41 298 87
Inflammatory response none Immune response defense response immune response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis positive regulation of T cell differentiation positive thymic T cell selection protection from natural killer cell mediated cytotoxicity regulation of interleukin-6 biosynthesis regulation of macrophage activation Other cellular response to starvation response to heat response to sterol depletion response to unfolded protein Organismic regulation Behavior	0 2 2 0	2 2 11 4	0 36 8 14 4 2 1 2 2 1 1 1	0 4 4	0 21 4 10 2 2 2 2	298
Inflammatory response none Immune response defense response immune response immune response innate immune response positive regulation of immune response positive regulation of interleukin-12 biosynthesis positive regulation of T cell differentiation positive thymic T cell selection protection from natural killer cell mediated cytotoxicity regulation of interleukin-6 biosynthesis regulation of macrophage activation Other cellular response to starvation response to heat response to sterol depletion response to unfolded protein Organismic regulation	0 2 2 0	2 11 4	0 36 8 14 4 2 1 2 2 1 1 1 1	0 4 4	0 21 4 10 2 2 2 1	41 298 87

brain development					3	
odontogenesis (sensu Vertebrata)		4				
patterning of blood vessels					2	
positive regulation of angiogenesis				1		
Systemic regulation	0	2	1	3	2	53
circadian rhythm				1		
intestinal absorption		2				
negative regulation of blood pressure					1	
regulation of body fluids					1	
rhythmic process				2		
vasodilation			1			
Reproduction	3	3	0	0	0	8
sexual reproduction	3	3				

SUPPLEMENTAL TABLE 2. Categorized processes in the kidney medulla

Categories and subcategories	²¹¹ At activity [kBq]: Absorbed dose [mGy]:	0.064 0.24	0.64 2.4	1.8 6.9	14 52	42 160	
	Absorbed dose [moy].		. (score				No. (filtered
DNA integrity		0	3	17	0	0	transcripts)
Damage and repair		0	0	0	0	0	30
none							
Chromatin organization		0	3	17	0	0	79
chromosome organization and biogenes	sis (sensu Eukaryota)			8			
nucleosome assembly				9			
telomere maintenance			3				
Gene expression integrity		21	21	5	0	2	661
Transcription		0	0	0	0	1	567
transcription from RNA polymerase II pr	omoter					1	
RNA processing		17	11	0	0	0	64
mRNA processing		11	11				
rRNA processing		6					
Translation		4	10	5	0	1	30
regulation of protein biosynthesis		4	5				
regulation of translation			5				
regulation of translational initiation				2		1	
translational elongation							
translational initiation				3			
Cellular integrity		110	128	29	3	6	1054
Physico-chemical environment		2	2	23	0	3	174
ion transport				14			
metal ion homeostasis						1	
regulation of pH				2			
sodium ion transport				7			
thermoregulation		2	2			1	
zinc ion homeostasis						1	
Cytoskeleton & motility		2	4	4	2	2	139
chemotaxis					2		
cortical actin cytoskeleton organization a	and biogenesis					1	
induction of positive chemotaxis				2			
motor axon guidance		2	2				
positive regulation of cell migration				2			
substrate-bound cell migration; cell exte	nsion		2			1	
Extracellular matrix & CM		6	0	0	0	0	152
cell-matrix adhesion		6					
Supramolecular maintenance		100	122	2	1	1	589
intracellular transport					1		
oligopeptide transport				2			
protein folding			17				
protein targeting		8					

sequestering of lipid	3	3				
transport	89	89				
ubiquitin cycle		13				
Cell cycle and differentiation	24	18	2	2	9	510
Cell cycle regulation	9	4	0	0	1	290
cell growth	4	4				
regulation of body size					1	
regulation of mitosis	2					
somatic stem cell division	3					
Differentiation & aging	7	6	2	2	4	50
aging	2	2				
cell fate determination				1	1	
endothelial cell differentiation				1	1	
eye photoreceptor cell differentiation					1	
keratinocyte differentiation	5	4				
positive regulation of fibroblast proliferation			2		1	
Apoptotic cell death	2	2	0	0	2	155
apoptotic mitochondrial changes	2	2				
negative regulation of apoptosis					2	
Cell death	6	6	0	0	2	13
cytolysis	6	6			2	
General	0	0	0	0	0	2
none						
Cell communication	2	4	0	8	3	381
Intercellular signaling	2	4	0	0	0	16
neuromuscular synaptic transmission	2	2				
synaptic vesicle transport		2				
Signal transduction	0	0	0	8	3	365
activation of MAPKK activity					1	
BMP signaling pathway				1		
neuropeptide signaling pathway nitric oxide mediated signal transduction				1		
					1	
phosphorylation				1		
signal transduction				4		
two-component signal transduction system (phosphorelay) Metabolism	108	63	32	<u> </u>	1 8	828
Proteins, amino acids	3	0	3	0	0	62
cellular protein metabolism	3		3			
Lipids, fatty acids	7	8	12	3	8	292
acetyl-CoA biosynthesis from pyruvate				1	1	
acetyl-CoA metabolism			_		1	
cholesterol biosynthesis			3			
fatty acid beta-oxidation			3			
fatty acid catabolism					1	
fatty acid metabolism	_	_	6		2	
fatty acid oxidation	3	3				
long-chain fatty acid transport	2	2				

negative regulation of lipoprotein lipase activity				1	1	
phosphatidylcholine biosynthesis		3		·	'	
positive regulation of lipid metabolism	2			1	1	
sphingoid catabolism	2			•	1	
Carbohydrates	0	0	0	0	0	33
none	U	U	U	U	U	33
Signaling molecules	5	7	0	0	0	18
dopamine biosynthesis		2				
positive regulation of nitric oxide biosynthesis	2	2				
prostaglandin biosynthesis	3	3				
Nucleic acid-related	4	2	0	0	0	32
deoxyribonucleotide catabolism	2					
DNA catabolism	2	2				
Other	4	5	0	2	0	41
aromatic compound catabolism		3				
carotenoid biosynthesis	2					
hyaluronan metabolism				1		
isoprenoid biosynthesis				1		
retinoic acid metabolism	2	2				
General	85	41	17	0	0	350
electron transport	37		17			
energy reserve metabolism	2					
metabolism	46	41				
Stress responses	16	12	3	5	3	450
-	- 10		_		_	
Oxidative stress response	0	0	0	0	0	24
Oxidative stress response none	0	0				
Oxidative stress response none Inflammatory response	-	_	0	3	0	24
Oxidative stress response none Inflammatory response inflammatory response	0	0	0	3	0	41
Oxidative stress response none Inflammatory response inflammatory response Immune response	0	0		3	0	
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis	0 0 5	0	0	3	0	41
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response	0	0	0	3	0 2 1	41
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation	0 0 5 3	0 0 2	0	3	0	41
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation	0 0 5 3	0 0 2	0	3 3 0	0 2 1	298
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other	0 0 5 3	0 0 2	0	3 3 0	0 2 1 1	41
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation	0 0 5 3	0 0 2	0 0 3	3 3 0	0 2 1	298
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation response to hypoxia	0 0 5 3 2 11	0 0 2 2	0	3 3 0	0 2 1 1	298
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation response to hypoxia response to unfolded protein	0 0 5 3 2 11	0 0 2 2 10	0 0 3	3 3 0	0 2 1 1	298
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation response to hypoxia response to unfolded protein wound healing	0 0 5 3 2 11	0 0 2 2 10	0 0 3 3	3 3 0	0 2 1 1 1	298 87
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation response to hypoxia response to unfolded protein wound healing Organismic regulation	0 0 5 3 2 11 8 3 5	0 0 2 2 10 7 3 8	0 0 3 3	3 3 0	0 2 1 1 1 1	41 298 87
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation response to hypoxia response to unfolded protein wound healing Organismic regulation Behavior	0 0 5 3 2 11	0 0 2 2 10	0 0 3 3	3 3 0	0 2 1 1 1 1	298 87
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation response to hypoxia response to unfolded protein wound healing Organismic regulation Behavior eating behavior	0 0 5 3 2 11 8 3 5	0 0 2 2 10 7 3 8	0 0 3 3 5	3 3 0	0 2 1 1 1 1 5 1 1 1	41 298 87 166 8
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation response to hypoxia response to unfolded protein wound healing Organismic regulation Behavior eating behavior Ontogenesis	0 0 5 3 2 11 8 3 5	0 0 2 2 10 7 3 8	0 0 3 3 5 0	3 3 0	0 2 1 1 1 1	41 298 87
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation response to hypoxia response to unfolded protein wound healing Organismic regulation Behavior eating behavior Ontogenesis brain development	0 0 5 3 2 11 8 3 5	0 0 2 2 10 7 3 8 0	0 0 3 3 5	3 3 0	0 2 1 1 1 1 5 1 1 1	41 298 87 166 8
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation response to hypoxia response to unfolded protein wound healing Organismic regulation Behavior eating behavior Ontogenesis brain development embryo implantation	0 0 5 3 2 11 8 3 5	0 0 2 2 10 7 3 8	0 0 3 3 5 0	3 3 0	0 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	41 298 87 166 8
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation response to hypoxia response to unfolded protein wound healing Organismic regulation Behavior eating behavior Ontogenesis brain development embryo implantation positive regulation of angiogenesis	0 0 5 3 2 11 8 3 5	0 0 2 2 10 7 3 8 0	0 0 3 3 5 0	3 3 0 2 1 1 2	0 2 1 1 1 1 5 1 1 1	41 298 87 166 8
Oxidative stress response none Inflammatory response inflammatory response Immune response interferon-gamma biosynthesis positive regulation of immune response positive regulation of myoblast differentiation regulation of macrophage activation Other cellular response to starvation response to hypoxia response to unfolded protein wound healing Organismic regulation Behavior eating behavior Ontogenesis brain development embryo implantation	0 0 5 3 2 11 8 3 5	0 0 2 2 10 7 3 8 0	0 0 3 3 5 0	3 3 0	0 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	41 298 87 166 8

sexual reproduction	3	3	2		1	
Reproduction	3	3	2	0	1	8
rhythmic process				1		
regulation of bone mineralization					1	
intestinal absorption	2	2				
circadian rhythm				1	1	

SUPPLEMENTAL TABLE 3. Categorized processes in the liver

Categories and subcategories	²¹¹ At activity [kBq]:	0.064	0.64	1.8	14	42	
	Absorbed dose [mGy]:	0.20	2.0	5.5	44	130	No. (filtered
		No. (scored transcripts)				ts)	transcripts)
DNA integrity		0	0	1	0	1	109
Damage and repair		0	0	0	0	0	30
none							
Chromatin organization		0	0	1	0	1	79
nucleosome spacing		445	445	1	•	1	004
Gene expression integrity		115	145	0	0	0	661
Transcription		96	118	0	0	0	567
regulation of transcription; DNA-dependent		49	59				
transcription		47	59				
RNA processing		17	18	0	0	0	64
mRNA processing		11	11				
nuclear mRNA splicing; via spliceosome		6	7				
Translation regulation of protein		2	9	0	0	0	30
biosynthesis			5				
regulation of translation			4				
regulation of translational initiation		2					
Cellular integrity		35	19	6	9	6	1054
Physico-chemical environment		5	9	1	4	3	174
cation transport		J	3	•	•	2	174
cell redox homeostasis		3					
iron ion homeostasis		3			2		
metal ion homeostasis				1	1	1	
molecular hydrogen transport				•	1	•	
proton transport			7				
thermoregulation		2	2				
Cytoskeleton & motility		0	10	0	5	3	139
chemotaxis							
microtubule-based movement			7		3	3	
microtubule-based process					2		
positive regulation of cell migration			3				
Extracellular matrix & CM		0	0	0	0	0	152
none							
Supramolecular maintenance		30	0	5	0	0	589
protein folding		13		5			
protein modification		5					
transport							
ubiquitin cycle		12					
Cell cycle and differentiation		33	22	6	5	4	510
Cell cycle regulation		0	0	4	0	0	290
regulation of cell growth				4			
Differentiation & aging		6	4	2	2	1	50
keratinocyte differentiation		4	4				

1 11 11 11 11 11 11 11 11 11 11 11 11 1						
mechanoreceptor differentiation	_			1		
mesoderm development	2					
positive regulation of neuron differentiation			1	4		
retinal rod cell development			1	1	1	
Apoptotic cell death	22	18	0	3	3	155
apoptosis	16	18		_		
negative regulation of apoptosis	6			3	3	
Cell death	5	0	0	0	0	13
cytolysis	5					
General	0	0	0	0	0	2
none Cell communication	0	9	6	10	4	381
Intercellular signaling	0	0	0	1	0	16
synaptic transmission; cholinergic	Ū	Ū	Ū	1	Ů	10
Signal transduction	0	9	6	9	4	365
_	U	9	O	9 1	4	300
activation of MAPKK activity		2		1		
estrogen receptor signaling pathway G-protein signaling; coupled to cGMP nucleotide second		2		•		
messenger		2				
negative regulation of protein kinase activity				2	2	
negative regulation of signal transduction				2		
nitric oxide mediated signal transduction			1	1	1	
positive regulation of protein kinase activity				1		
Ras protein signal transduction		5				
regulation of MADIC activity.			1			
regulation of MAPK activity			1	1	1	
regulation of Wnt receptor signaling pathway			1	1	1	
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling				1	1	
regulation of Wnt receptor signaling pathway	58	113	1	1 10	31	828
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism	<u>58</u>	113	1 3			828 62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway	_		1 3 17	10	31	
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids	_	12	1 3 17	10	31	
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism	_	12 4	1 3 17	10	31	
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization	_	12 4	1 3 17	10 4	31	
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism	_	12 4 2	1 3 17	10 4	31	
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids	0	12 4 2	1 3 17 0	10 4 4	31 3	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism	0	12 4 2 6 43	1 3 17 0	10 4 4	31 3 3	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids	0	12 4 2 6 43	1 3 17 0	10 4 4	31 3 3 19 2	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism bile acid biosynthesis bile acid metabolism	0	12 4 2 6 43 4	1 3 17 0	10 4 4	31 3 3 19 2	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism bile acid biosynthesis	0	12 4 2 6 43 4	1 3 17 0	10 4 4	31 3 3 19 2	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism bile acid biosynthesis bile acid metabolism cholesterol biosynthesis cholesterol metabolism	0	12 4 2 6 43 4 3 5	1 3 17 0	10 4 4	31 3 19 2	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism bile acid biosynthesis bile acid metabolism cholesterol biosynthesis cholesterol metabolism fatty acid alpha-oxidation	0	12 4 2 6 43 4 3 5	1 3 17 0 14 1 3	10 4 4	31 3 19 2	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism bile acid biosynthesis bile acid metabolism cholesterol biosynthesis cholesterol metabolism fatty acid alpha-oxidation fatty acid biosynthesis	0	12 4 2 6 43 4 3 5 6	1 3 17 0 14 1 3	10 4 4	31 3 19 2	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism bile acid biosynthesis bile acid metabolism cholesterol biosynthesis cholesterol metabolism fatty acid alpha-oxidation fatty acid oxidation	14	12 4 2 6 43 4 3 5 6	1 3 17 0 14 1 3	10 4 4	31 3 3 19 2 1	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism bile acid biosynthesis bile acid metabolism cholesterol biosynthesis cholesterol metabolism fatty acid alpha-oxidation fatty acid oxidation ganglioside biosynthesis	14	12 4 2 6 43 4 3 5 6	1 3 17 0 14 1 3	10 4 4	31 3 19 2	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism bile acid biosynthesis bile acid metabolism cholesterol biosynthesis cholesterol metabolism fatty acid alpha-oxidation fatty acid biosynthesis fatty acid oxidation ganglioside biosynthesis lipid biosynthesis	14	12 4 2 6 43 4 3 5 6	1 3 17 0 14 1 3 1	10 4 4	31 3 19 2 1	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism bile acid biosynthesis bile acid metabolism cholesterol biosynthesis cholesterol metabolism fatty acid alpha-oxidation fatty acid biosynthesis fatty acid oxidation ganglioside biosynthesis lipid biosynthesis lipid metabolism	14	12 4 2 6 43 4 3 5 6	1 3 17 0 14 1 3	10 4 4	31 3 3 19 2 1	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism bile acid biosynthesis bile acid metabolism cholesterol biosynthesis cholesterol metabolism fatty acid alpha-oxidation fatty acid biosynthesis fatty acid oxidation ganglioside biosynthesis lipid biosynthesis lipid metabolism negative regulation of lipoprotein lipase activity	14	12 4 2 6 43 4 3 5 6 6	1 3 17 0 14 1 3 1	4 4 2	31 3 3 19 2 1	62
regulation of Wnt receptor signaling pathway transmembrane receptor protein tyrosine kinase signaling pathway Metabolism Proteins, amino acids glutathione metabolism glycine catabolism protein polymerization ubiquitin-dependent protein catabolism Lipids, fatty acids acyl-CoA metabolism bile acid biosynthesis bile acid metabolism cholesterol biosynthesis cholesterol metabolism fatty acid alpha-oxidation fatty acid biosynthesis fatty acid oxidation ganglioside biosynthesis lipid biosynthesis lipid metabolism	14	12 4 2 6 43 4 3 5 6	1 3 17 0 14 1 3 1	4 4 2	31 3 3 19 2 1	62

positive regulation of lipid metabolism		2		1		
positive regulation of lipid metabolism regulation of fatty acid metabolism	2	-		1		
steroid metabolism	2				3	
Carbohydrates	4	2	1	1	<u>3</u> 1	33
gluconeogenesis	-	2	'	•	'	33
	4		4			
glucuronate metabolism			1		1	
glycerol biosynthesis from pyruvate				1	•	
glycogen biosynthesis		2		•		
glyoxylate cycle	0		1	1		10
Signaling molecules	U	0	1	1	0	18
hormone biosynthesis			•	4		
negative regulation of nitric oxide biosynthesis				1		
Nucleic acid-related	3	2 2	0	1	0	32
deoxyribonucleotide catabolism	0	2				
DNA recombination	3			1		
uridine metabolism						
Other	7 2	6	1	0	0	41
aromatic compound catabolism	2					
carotenoid biosynthesis		2				
glycosaminoglycan catabolism	0	0	1			
glycosaminoglycan metabolism	2	2				
isoprenoid biosynthesis	2	2				
retinal metabolism	3	40				250
General ATD bisosynthesis	30	48 4	0	1	8	350
ATP purphasis		9				
ATP synthesis coupled proton transport	30	9 35			0	
electron transport	00	00		1	8	
regulation of metabolism Stress responses	19	13	0	6	2	450
Oxidative stress response	0	0	0	3	0	24
L-ascorbic acid metabolism	U	U	U	1	U	24
response to oxidative stress				2		
response to oxidative stress						41
Inflammatory rachanca	^	^	Λ	Λ		41
Inflammatory response	0	0	0	0	0	
none						
none Immune response	9	6	0	2	1	298
none Immune response acute-phase response						
none Immune response acute-phase response interferon-gamma biosynthesis	9	6		2		
none Immune response acute-phase response interferon-gamma biosynthesis interleukin-2 biosynthesis	9	6		2		
none Immune response acute-phase response interferon-gamma biosynthesis	9 2 3	6		2		
none Immune response acute-phase response interferon-gamma biosynthesis interleukin-2 biosynthesis mast cell activation negative regulation of T cell receptor signaling pathway	9	6		2	1	
Immune response acute-phase response interferon-gamma biosynthesis interleukin-2 biosynthesis mast cell activation negative regulation of T cell receptor signaling pathway regulation of interleukin-6 biosynthesis	9 2 3 2	6		2		
Immune response acute-phase response interferon-gamma biosynthesis interleukin-2 biosynthesis mast cell activation negative regulation of T cell receptor signaling pathway regulation of interleukin-6 biosynthesis regulation of macrophage activation	9 2 3 2	6	0	2 1	1	298
Immune response acute-phase response interferon-gamma biosynthesis interleukin-2 biosynthesis mast cell activation negative regulation of T cell receptor signaling pathway regulation of interleukin-6 biosynthesis regulation of macrophage activation Other	9 2 3 2	6		2	1	
Immune response acute-phase response interferon-gamma biosynthesis interleukin-2 biosynthesis mast cell activation negative regulation of T cell receptor signaling pathway regulation of interleukin-6 biosynthesis regulation of macrophage activation Other cellular response to starvation	9 2 3 2	6	0	2 1 1	1	298
Immune response acute-phase response interferon-gamma biosynthesis interleukin-2 biosynthesis mast cell activation negative regulation of T cell receptor signaling pathway regulation of interleukin-6 biosynthesis regulation of macrophage activation Other cellular response to starvation ER overload response	9 2 3 2 2	6	0	2 1 1	1 1	298
Immune response acute-phase response interferon-gamma biosynthesis interleukin-2 biosynthesis mast cell activation negative regulation of T cell receptor signaling pathway regulation of interleukin-6 biosynthesis regulation of macrophage activation Other cellular response to starvation	9 2 3 2	6	0	2 1 1	1 1	298

Organismic regulation	16	12	3	6	5	166
Behavior	2	0	1	2	0	8
behavior	2			1		
feeding behavior			1	1		
Ontogenesis	8	9	0	2	1	97
embryo implantation embryonic placenta development	3	3		1		
epidermis development	3	3				
hair follicle morphogenesis	2					
odontogenesis				1	1	
positive regulation of angiogenesis		3				
Systemic regulation	3	0	1	2	4	53
bone mineralization				1		
circadian rhythm					2	
rhythmic process	3				2	
sensory perception				1		
vasodilation			1			
Reproduction	3	3	1	0	0	8
male sex differentiation			1			
sexual reproduction	3	3				

SUPPLEMENTAL TABLE 4. Categorized processes in the lung

Categories and subcategories	211 At activity [kBq]:	0.064 1.6	0.64 16	1.8 45	14 350	42 1000	
	Absorbed dose [mGy]:		o. (scor				No. (filtered
DNA integrity		3	0	0	0	0	transcripts 109
Damage and repair none		0	0	0	0	0	30
Chromatin organization		3	0	0	0	0	79
telomere maintenance		3					
Gene expression integrity		30	15	2	0	1	661
Transcription none		0	0	0	0	0	567
RNA processing		21	11	2	0	0	64
mRNA processing		10	8				
mRNA splice site selection		3	3	2			
nuclear mRNA splicing; via spliceosome		6					
regulation of mRNA stability		2					
Translation		9	4	0	0	1	30
regulation of protein biosynthesis		5	4				
regulation of translation		4					
translational elongation						1	-
Cellular integrity		67	73	5	8	16	1054
Physico-chemical environment		3	6	0	8	6	174
anion transport					1		
calcium ion homeostasis						2	
cation transport						2	
cell redox homeostasis			3				
copper ion transport					1		
ion transport					4		
iron ion homeostasis						2	
iron ion transport			3		2		
regulation of pH		3					
Cytoskeleton & motility		24	14	5	0	10	139
chemotaxis		8	9	3			
cytoskeleton organization and biogenesis		11				7	
motor axon guidance		2	2				
muscle thin filament assembly						1	
positive regulation of actin filament polymeriz	ation			1			
regulation of actin filament polymerization		3	3				
regulation of locomotion				1		1	
sarcomere alignment						1	-
Extracellular matrix & CM		3	24	0	0	0	152
cell adhesion			24				
collagen fibril organization		3					
Supramolecular maintenance		37	29	0	0	0	589
protein folding		16	13				
protein modification		6	5				

ubiquitin cycle	15	11				
Cell cycle and differentiation	7	11	6	2	4	510
Cell cycle regulation	0	7	0	0	0	290
regulation of cell growth		7				
Differentiation & aging	5	4	1	1	2	50
cartilage condensation			1	1	1	
enucleate erythrocyte differentiation					1	
keratinocyte differentiation	5	4				
Apoptotic cell death	2	0	4	0	2	155
anti-apoptosis	_	•	-		2	
apoptotic mitochondrial changes	2		1		_	
induction of apoptosis	_		3			
Cell death	0	0	0	0	0	13
none	·	Ū	Ū	Ū	Ū	10
General	0	0	1	1	0	2
regulation of cellular process	U	U	1	1	U	2
Cell communication	31	65	17	18	29	381
Intercellular signaling	2	0	5	0	5	16
neuromuscular synaptic transmission	2					
positive regulation of neurotransmitter secretion			1		1	
regulation of long-term neuronal synaptic plasticity			1		1	
regulation of neurotransmitter secretion			1		1	
synaptic transmission; dopaminergic			1		1	
synaptic vesicle transport			1		1	
Signal transduction	29	65	12	18	24	365
ER-nuclear signaling pathway					1	
fibroblast growth factor receptor signaling pathway				1	1	
peptidyl-serine phosphorylation			1			
peptidyl-threonine phosphorylation		2				
positive regulation of I-kappaB kinase/NF-kappaB cascade				1	1	
positive regulation of signal transduction			1	1	1	
protein amino acid dephosphorylation	8					
Metabolism	15	55	10	11	20	828
Proteins, amino acids	6	4	0	2	0	62
collagen catabolism		4		2		
ubiquitin-dependent protein catabolism	6					
Lipids, fatty acids	0	8	5	4	5	292
fatty acid elongation		_	1	-	-	
fatty acid metabolism		8	•			
fatty acid oxidation		Ü		1	1	
negative regulation of lipoprotein lipase activity			1	1	1	
positive regulation of fatty acid metabolism			1	1	1	
positive regulation of lipid metabolism			1	1	1	
triacylglycerol biosynthesis			1	'	1	
Carbohydrates	0	3	4	3	'	33
glucose homeostasis	U	3	4	3	4	33
glycerol metabolism		3	1		1	

negative regulation of gluconeogenesis			1	1	1	
positive regulation of glucose import			1	1	1	
			1		-	
response to glucose stimulus Signaling molecules	0	2	1	1 0	2	18
	U	2	-	U	1	10
dopamine biosynthesis		2	1			
dopamine metabolism					1	
Nucleic acid-related	9	6	0	0	1	32
mRNA catabolism	3 3	3				
nucleoside metabolism						
nucleotide catabolism	3	3				
RNA-dependent DNA replication					1	
Other	0	4 4	0	2	1	41
peptidoglycan metabolism		4		2		
phosphocreatine metabolism						
General	0	28	0	0	7	350
cellular respiration					1	
electron transport Stress responses	21	28 4	13	10	6 8	450
<u> </u>						
Oxidative stress response	0	0	0	0	0	24
none						
Inflammatory response	0	0	1	0	0	41
negative regulation of type I hypersensitivity			1			
Immune response	8	0	6	8	4	298
immune response			5	5 2	4	
innate immune response				1		
macrophage differentiation	4			'		
phagocytosis; engulfment	•					
phagocytosis; recognition	4		1			
protection from natural killer cell mediated cytotoxicity						
Other	13	4	6	2	4	87
cellular response to starvation				1	1	
response to biotic stimulus				1		
response to drug			•		1	
response to heat			2			
response to hypoxia	_		2		2	
response to stress	5	4				
response to unfolded protein	8 2	11	2 3	2	12	166
Organismic regulation	-	_		2	12	
Behavior none	0	0	0	0	0	8
Ontogenesis						
	2	7	3	1	3	97
adult heart development		2			1	
ectoderm development		2	-			
embryonic development (sensu Mammalia)			2	4	1	
positive regulation of angiogenesis				1	1	
		_				
skin development ureteric bud branching	2	2				

visceral muscle development			1		1	
Systemic regulation	0	0	0	0	9	53
circadian rhythm					2	
physiological process					1	
regulation of blood vessel size					1	
regulation of muscle contraction					2	
rhythmic process					2	
striated muscle contraction					1	
Reproduction	0	4	0	1	0	8
germ cell development		2				
male sex differentiation				1		
sexual reproduction		2				

Supplemental Table 5. Categorized processes in the spleen

Categories and subcategories	²¹¹ At activity [kBq]:	0.064	0.64	1.8	14	42	
A	bsorbed dose [mGy]:	0.45	4.5	13	98	300	
		No	o. (scor	ed tra	nscrip	ots)	No. (filtered transcripts)
DNA integrity		22	41	3	1	1	109
Damage and repair		0	12	1	1	1	30
base-excision repair; DNA ligation					1		
base-excision repair; gap-filling				1		1	
DNA repair			12				
Chromatin organization		22	29	2	0	0	79
chromosome condensation				1			
chromosome organization and biogenesis (sens	su Eukaryota)	10	11				
DNA topological change				1			
establishment and/or maintenance of chromatin	architecture		3				
nucleosome assembly		12	15				
Gene expression integrity		234	248	2	0	0	661
Transcription		161	171	0	0	0	567
positive regulation of transcription		9					
regulation of transcription; DNA- dependent		78	89				
transcription		74	82				
RNA processing		20	23	0	0	0	64
mRNA processing		11	14				
nuclear mRNA splicing; via spliceosome			9				
rRNA processing		9					
Translation		53	54	2	0	0	30
none							
Cellular integrity		45	47	2	0	0	1054
Physico-chemical environment		8	7	0	0	0	174
ron ion homeostasis			4				
regulation of pH		3					
release of sequestered calcium ion into cytosol		2					
response to pH		3	3				
Cytoskeleton & motility		20	21	0	0	0	139
microtubule-based movement		10	12				
microtubule-based process		8	9				
substrate-bound cell migration; cell extension		2					
Extracellular matrix & CM		0	0	2	0	0	152
cell-matrix adhesion				2			
Supramolecular maintenance		17	19	0	0	0	589
		47	19				
ubiquitin cycle		17	10				
ubiquitin cycle Cell cycle and differentiation		126	190	7	25	2	510
				7 6	25	2	510 290
Cell cycle and differentiation		126	190				
Cell cycle and differentiation Cell cycle regulation		126 96	190		24		

				_		
chromosome segregation		4		2		
DNA replication	15	19	3	8		
DNA replication initiation	7	7	2	3		
dTMP biosynthesis				1		
mitosis	13	16				
					4	
positive regulation of cell growth				4	1	
regulation of DNA replication			1	1	1	
Differentiation & aging	6	4	1	1	0	50
cartilage condensation			1	1		
epithelial to mesenchymal transition	2					
keratinocyte differentiation	4	4				
Apoptotic cell death	24	53	0	0	0	155
		10	·	·	·	100
anti-apoptosis apoptosis	24	28				
	24					
induction of apoptosis		15				-
Cell death	0	0	0	0	0	13
none						
General	0	0	0	0	0	2
none						
Cell communication	25	24	1	0	1	381
Intercellular signaling	4	0	0	0	0	16
		U	U	U	U	10
neuromuscular synaptic transmission	2					
synaptic vesicle transport						
Signal transduction	21	24	1	0	1	365
cell surface receptor linked signal transduction	12	17				
peptidyl-serine phosphorylation	2					
positive regulation of phosphoinositide 3-kinase activity			1		1	
Ras protein signal transduction	7	7				
Metabolism	45	158	23	36	19	828
Proteins, amino acids	0	0	1	6	1	62
asparagine biosynthesis	-	•		1		
collagen catabolism				2 1		
protein amino acid esterification			1		1	
protein amino acid glycosylation				2		
Lipids, fatty acids	0	3	11	9	12	292
ceramide catabolism			1	1	1	
ceramide metabolism		3				
cholesterol absorption			1	1	1	
cholesterol catabolism			•	·	1	
			4			
fatty acid catabolism			1	F	1	
lipid catabolism			5	5	5	
negative regulation of lipoprotein lipase activity			1	1	1	
phospholipid catabolism			1	1	1	
positive regulation of lipid metabolism			1		1	
Carbohydrates	0	0	0	0	0	33
none	-	-	-	-		
Signaling molecules			0	0		
	2	0			0	18

Nucleic acid-related 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	positive regulation of nitric oxide biosynthesis	2					
Name		0	0	0	0	0	32
Other none 0 0 0 0 41 General none 43 155 11 21 6 350 Stress responses 43 132 7 11 6 450 Oxidative stress response 0 3 2 2 0 24 hydrogen peroxide catabolism 3 2 2 0 24 hydrogen peroxide catabolism 3 2 2 0 24 hydrogen peroxide catabolism 3 2 2 2 Inflammatory response 17 0 6 3 41 arachidoric acid secretion 17 5 3 2 28 lecill receptor signaling pathway 2 2 28 28 2 288 defense response 17 17 5 3 2 2 28 28 2 28 2 28 2 28 2 28 4 4 4	none						
General none 43 155 11 21 6 Stress responses 43 1322 7 11 6 Oxidative stress response 0 3 2 2 0 Inflammatory response 0 17 0 6 3 41 arachidonic acid secretion inflammatory response 17 5 3 41 Immune response 43 98 3 2 2 Immune response 43 98 3 2 2 298 B cell receptor signalling pathway 2	Other	0	0	0	0	0	41
Name	none						
Stress responses		43	155	11	21	6	350
Oxidative stress response 0 3 2 2 0 24 hydrogen peroxide catabolism 3 2 2 1 Inflammatory response 0 17 0 6 3 41 arachidonic acid secretion inflammatory response 17 5 3 1 Immune response 43 98 3 2 2 298 acute-phase response 2 3 2 2 298 B cell receptor signaling pathway 2 2 2 298 acute-phase response 32 40 3 2 2 2 defense response 32 40 3 2 2 2 2 2 2 2 2 2 2 2 2 2 3 2 2 3 3 3 2 2 3 3 3 3 3 3 3 3 3 3 3 3 4 <td></td> <td>43</td> <td>132</td> <td>7</td> <td>11</td> <td>6</td> <td>450</td>		43	132	7	11	6	450
Inflammatory response 0	·						
Inflammatory response	•	U				U	24
arachidonic acid secretion inflammatory response		0				3	//1
Inflammatory response 17 5 3 Immune response 43 98 3 2 2 acute-phase response 2 2 2 2 b cell receptor signaling pathway 2 2 2 2 cytokinesis 17 2 2 2 2 2 4 <td></td> <td>U</td> <td>17</td> <td>Ū</td> <td></td> <td>3</td> <td>71</td>		U	17	Ū		3	71
Immune response			17			2	
B cell receptor signaling pathway	Immuno rocnonco	42		2			200
B cell receptor signaling pathway 2 2 2 3 4 4 4 4 4 4 4 4 4		43	90		2		290
cytokinesis 2 defense response 17 immune response 32 40 immunoglobulin secretion 4 5 6 macrophage differentiation 3 5 5 5 5 5 6 7 6 6 7 6 6 7 6 7 6 7 6 7 6 7 7 6 7 7		2		3		2	
defense response 17 immune response 32 40 immunoglobulin secretion 4 4 macrophage differentiation 3	, , ,	2			2		
immune response immune globulin secretion			17		_		
immunoglobulin secretion 3 macrophage differentiation 3 negative thymic T cell selection 3 phagocytosis; engulfment 5 phagocytosis; recognition 4 positive regulation of B cell proliferation 4 positive regulation of T cell differentiation 4 positive regulation of T cell proliferation 6 regulation of T cell proliferation 3 regulation of T cell differentiation 3 T cell receptor signaling pathway 4 Other 0 14 2 1 8 cellular response to starvation 1 1 87 cellular response to DNA damage stimulus 1 1 8 response to DNA damage stimulus 1 1 6 porganismic regulation 0 0 0 0 8 Organismic regulation 8 5 3 166 Behavior 0 0 0 0 9 embryonic cleavage 1 1 1		00					
macrophage differentiation 3 negative thymic T cell selection 3 phagocytosis; engulfment 5 phagocytosis; recognition 4 positive regulation of B cell proliferation 4 positive regulation of interleukin-4 biosynthesis 2 positive regulation of T cell differentiation 6 positive regulation of T cell proliferation 6 regulation of T cell differentiation 3 T cell receptor signaling pathway 4 4 2 1 1 2 1 2 1 8 3 1 8 4 4 2 1 8 4 4 2 1 1 8 6 1 2 1 1 8 1 1 8 1 1 8 1 1 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <td></td> <td>32</td> <td></td> <td></td> <td></td> <td></td> <td></td>		32					
Page	•	2	4				
phagocytosis; engulfment 5 phagocytosis; recognition 4 positive regulation of B cell proliferation 4 positive regulation of interleukin-4 biosynthesis 2 positive regulation of T cell differentiation 4 positive regulation of T cell proliferation 6 regulation of T cell differentiation 3 T cell receptor signaling pathway 4 Other 0 14 2 1 1 87 cellular response to starvation 2 1 1 87 cellular response to biotic stimulus 11 1 87 response to DNA damage stimulus 11 1 87 response to drug 3 166 Behavior 0 0 0 0 0 8 none 0 0 0 0 97 embryonic cleavage 1 1 0 97 embryonic development 8 1 1 0 97 Expectation 0	· -	3	_				
phagocytosis; recognition 4 positive regulation of B cell proliferation 4 positive regulation of interleukin-4 biosynthesis 2 positive regulation of T cell differentiation 6 positive regulation of T cell proliferation 6 regulation of T cell differentiation 3 T cell receptor signaling pathway 4 Other 0 14 2 1 1 87 cellular response to starvation 2 1 1 87 cellular response to biotic stimulus 11 1 87 response to DNA damage stimulus 11 5 1 86 Organismic regulation 0 8 4 5 3 166 Behavior 0 0 0 0 0 97 embryonic cleavage 1 1 1 1 embryonic development 8 5 3							
Positive regulation of B cell proliferation							
Positive regulation of interleukin-4 biosynthesis 2							
Positive regulation of T cell differentiation 4			4				
positive regulation of T cell proliferation 6 regulation of immune response 4 4 4 regulation of T cell differentiation 3 Tell receptor signaling pathway 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 8 4 5 3 6 6 6 7 6 7 8 7 8 7 8 7 8 7 8 7 9		2					
regulation of immune response regulation of T cell differentiation 3 T cell receptor signaling pathway 4 T							
regulation of T cell differentiation T cell receptor signaling pathway Other Other							
T cell receptor signaling pathway 4 Other 0 14 2 1 1 87 cellular response to starvation 2 1 1 response to biotic stimulus 11 1 response to DNA damage stimulus 11 1 response to drug 3 5 166 Behavior none 0 0 0 0 0 0 0 0 0 8 1 1 0 97 embryonic cleavage embryonic cleavage embryonic development 8 1 1 0 97 Systemic regulation 0 0 3 3 3 3 3 53 53 digestion 3 3 3 3 3 53 Reproduction 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 8	regulation of immune response	4	4				
Other 0 14 2 1 1 87 cellular response to starvation 2 1 2 1	regulation of T cell differentiation		3				
cellular response to starvation 2 1 response to biotic stimulus 11 1 response to DNA damage stimulus 3 11 response to drug 3 166 Organismic regulation 0 0 0 0 0 8 Behavior none 0 0 0 0 0 97 0 0 97 0 0 97 0 0 0 0 0 97 0	T cell receptor signaling pathway		4				
response to biotic stimulus response to DNA damage stimulus response to drug Organismic regulation Behavior none Ontogenesis embryonic cleavage embryonic development Systemic regulation Reproduction 1 1 1 1 1 1 1 1 1 1 1 1 1	Other	0	14	2	1	1	87
Tesponse to DNA damage stimulus response to drug 3 3	cellular response to starvation			2		1	
response to drug 3 Organismic regulation 0 8 4 5 3 166 Behavior none 0 0 0 0 0 8 Ontogenesis embryonic cleavage embryonic development 0 8 1 1 0 97 Systemic regulation digestion 0 0 3 3 3 53 Reproduction 0 0 0 1 0 8	response to biotic stimulus				1		
Organismic regulation 0 8 4 5 3 166 Behavior none 0 0 0 0 0 8 Ontogenesis 0 8 1 1 0 97 embryonic cleavage embryonic development 8 97 <td>response to DNA damage stimulus</td> <td></td> <td>11</td> <td></td> <td></td> <td></td> <td></td>	response to DNA damage stimulus		11				
Behavior none 0 0 0 0 0 97 Ontogenesis 0 8 1 1 0 97 embryonic cleavage embryonic development 8 8 97 1 1 1 1 1 1 1 1 1 1 1 2 1 2<	response to drug		3				
none 0 8 1 1 0 97 embryonic cleavage embryonic development 1 <td>Organismic regulation</td> <td>0</td> <td>8</td> <td>4</td> <td>5</td> <td>3</td> <td>166</td>	Organismic regulation	0	8	4	5	3	166
Ontogenesis 0 8 1 1 0 97 embryonic cleavage embryonic development 8 1 1 1 1 1 1 1 2 1 1 2 2 3 3 3 53 3	Behavior	0	0	0	0	0	8
embryonic cleavage embryonic development 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	none						
Embryonic development 8 Systemic regulation 0 0 3 3 53 digestion 3 3 3 3 Reproduction 0 0 0 1 0 8	Ontogenesis	0	8	1	1	0	97
Systemic regulation 0 0 3 3 3 53 digestion 3 3 3 3 3 Reproduction 0 0 0 1 0 8				1	1		
digestion 3 3 3 Reproduction 0 0 0 1 0 8	embryonic development		8				
Reproduction 0 0 0 1 0 8	Systemic regulation	0	0	3	3	3	53
·	digestion			3	3	3	
meiotic chromosome segregation 1	Reproduction	0	0	0	1	0	8
	meiotic chromosome segregation				1		