

**SUPPLEMENTAL TABLE 1. Categorized biological processes in the kidney cortex**

Categories and subcategories	<sup>211</sup> At activity [kBq]:					No. (filtered transcripts)
	0.064	0.64	1.8	14	42	
	Absorbed dose [mGy]:					
	0.24	2.4	6.9	52	160	
	No. (scored transcripts)					
<b>DNA integrity</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>109</b>
<b>Damage and repair</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>
none						
<b>Chromatin organization</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>79</b>
chromatin modification	4					
<b>Gene expression integrity</b>	<b>4</b>	<b>112</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>661</b>
<b>Transcription</b>	<b>2</b>	<b>103</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>567</b>
regulation of transcription; DNA-dependent		52				
transcription		51				
transcription from RNA polymerase II promoter	2					
<b>RNA processing</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>64</b>
mRNA processing		9				
<b>Translation</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>
regulation of translational initiation	2					
<b>Cellular integrity</b>	<b>75</b>	<b>143</b>	<b>11</b>	<b>8</b>	<b>50</b>	<b>1054</b>
<b>Physico-chemical environment</b>	<b>2</b>	<b>35</b>	<b>5</b>	<b>6</b>	<b>22</b>	<b>174</b>
calcium ion homeostasis			2			
chloride transport		5	2		2	
copper ion homeostasis	2					
ion transport		25			12	
potassium ion transport				2		
regulation of pH		3		1		
sodium ion transport				3	7	
thermoregulation		2	1			
water homeostasis					1	
<b>Cytoskeleton &amp; motility</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>139</b>
barbed-end actin filament capping					2	
regulation of cell migration					2	
<b>Extracellular matrix &amp; CM</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>152</b>
calcium-independent cell-cell adhesion					2	
<b>Supramolecular maintenance</b>	<b>73</b>	<b>108</b>	<b>6</b>	<b>2</b>	<b>22</b>	<b>589</b>
amiloride transport			1			
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	
<b>Cell cycle and differentiation</b>	<b>9</b>	<b>8</b>	<b>9</b>	<b>0</b>	<b>3</b>	<b>510</b>
<b>Cell cycle regulation</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>290</b>
none						
<b>Differentiation &amp; aging</b>	<b>7</b>	<b>4</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>50</b>

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

steroid metabolism			6				
<b>Carbohydrates</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>		33
glucose homeostasis			2				
glycogen biosynthesis	2						
negative regulation of gluconeogenesis			1				
positive regulation of glucose import			1				
response to glucose stimulus			1				
<b>Signaling molecules</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>		18
positive regulation of nitric oxide biosynthesis		2					
<b>Nucleic acid-related</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		32
none							
<b>Other</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>		41
retinoic acid metabolism	2	2					
<b>General</b>	<b>58</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>0</b>		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							
<b>Stress responses</b>	<b>2</b>	<b>13</b>	<b>37</b>	<b>5</b>	<b>21</b>		450
<b>Oxidative stress response</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		24
none							
<b>Inflammatory response</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		41
none							
<b>Immune response</b>	<b>2</b>	<b>2</b>	<b>36</b>	<b>4</b>	<b>21</b>		298
defense response			8	4			
immune response			14	4	10		
innate immune response			4				
positive regulation of immune response			2	2			
positive regulation of interleukin-12 biosynthesis			1				
positive regulation of T cell differentiation			2	2			
positive thymic T cell selection			2	2			
protection from natural killer cell mediated cytotoxicity			1				
regulation of interleukin-6 biosynthesis			1	1			
regulation of macrophage activation	2	2	1				
<b>Other</b>	<b>0</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>0</b>		87
cellular response to starvation				1			
response to heat		4					
response to sterol depletion			1				
response to unfolded protein		7					
<b>Organismic regulation</b>	<b>3</b>	<b>9</b>	<b>2</b>	<b>4</b>	<b>7</b>		166
<b>Behavior</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>		8
behavior			1				
<b>Ontogenesis</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>5</b>		97

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

**SUPPLEMENTAL TABLE 2. Categorized processes in the kidney medulla**

Categories and subcategories	<sup>211</sup> At activity [kBq]:					No. (filtered transcripts)
	0.064	0.64	1.8	14	42	
	Absorbed dose [mGy]:					
	0.24	2.4	6.9	52	160	
	No. (scored transcripts)					
	0	3	17	0	0	
<b>DNA integrity</b>	<b>0</b>	<b>3</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>109</b>
<b>Damage and repair</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>
none						
<b>Chromatin organization</b>	<b>0</b>	<b>3</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>79</b>
chromosome organization and biogenesis (sensu Eukaryota)			8			
nucleosome assembly			9			
telomere maintenance		3				
<b>Gene expression integrity</b>	<b>21</b>	<b>21</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>661</b>
<b>Transcription</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>567</b>
transcription from RNA polymerase II promoter					1	
<b>RNA processing</b>	<b>17</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>64</b>
mRNA processing	11	11				
rRNA processing	6					
<b>Translation</b>	<b>4</b>	<b>10</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>30</b>
regulation of protein biosynthesis	4	5				
regulation of translation		5				
regulation of translational initiation			2		1	
translational elongation						
translational initiation			3			
<b>Cellular integrity</b>	<b>110</b>	<b>128</b>	<b>29</b>	<b>3</b>	<b>6</b>	<b>1054</b>
<b>Physico-chemical environment</b>	<b>2</b>	<b>2</b>	<b>23</b>	<b>0</b>	<b>3</b>	<b>174</b>
ion transport			14			
metal ion homeostasis					1	
regulation of pH			2			
sodium ion transport			7			
thermoregulation	2	2			1	
zinc ion homeostasis					1	
<b>Cytoskeleton &amp; motility</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>139</b>
chemotaxis				2		
cortical actin cytoskeleton organization and biogenesis					1	
induction of positive chemotaxis			2			
motor axon guidance	2	2				
positive regulation of cell migration			2			
substrate-bound cell migration; cell extension		2			1	
<b>Extracellular matrix &amp; CM</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>152</b>
cell-matrix adhesion	6					
<b>Supramolecular maintenance</b>	<b>100</b>	<b>122</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>589</b>
intracellular transport				1		
oligopeptide transport			2			
protein folding		17				
protein targeting	8					
protein targeting to membrane					1	

sequestering of lipid	3	3				
transport	89	89				
ubiquitin cycle					13	
<b>Cell cycle and differentiation</b>	<b>24</b>	<b>18</b>	<b>2</b>	<b>2</b>	<b>9</b>	<b>510</b>
<b>Cell cycle regulation</b>	<b>9</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>290</b>
cell growth	4	4				
regulation of body size					1	
regulation of mitosis	2					
somatic stem cell division	3					
<b>Differentiation &amp; aging</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>50</b>
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	
<b>Apoptotic cell death</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>155</b>
apoptotic mitochondrial changes	2	2				
negative regulation of apoptosis					2	
<b>Cell death</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>13</b>
cytolysis	6	6			2	
<b>General</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
none						
<b>Cell communication</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>8</b>	<b>3</b>	<b>381</b>
<b>Intercellular signaling</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>
neuromuscular synaptic transmission	2	2				
synaptic vesicle transport		2				
<b>Signal transduction</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>3</b>	<b>365</b>
activation of MAPKK activity					1	
BMP signaling pathway				1		
neuropeptide signaling pathway				1		
nitric oxide mediated signal transduction					1	
phosphorylation				1		
signal transduction				4		
two-component signal transduction system (phosphorelay)				1	1	
<b>Metabolism</b>	<b>108</b>	<b>63</b>	<b>32</b>	<b>5</b>	<b>8</b>	<b>828</b>
<b>Proteins, amino acids</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>62</b>
cellular protein metabolism	3		3			
<b>Lipids, fatty acids</b>	<b>7</b>	<b>8</b>	<b>12</b>	<b>3</b>	<b>8</b>	<b>292</b>
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					1	
<b>Carbohydrates</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>
none						
<b>Signaling molecules</b>	<b>5</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>
dopamine biosynthesis		2				
positive regulation of nitric oxide biosynthesis	2	2				
prostaglandin biosynthesis	3	3				
<b>Nucleic acid-related</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>32</b>
deoxyribonucleotide catabolism	2					
DNA catabolism	2	2				
<b>Other</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>41</b>
aromatic compound catabolism		3				
carotenoid biosynthesis	2					
hyaluronan metabolism				1		
isoprenoid biosynthesis				1		
retinoic acid metabolism	2	2				
<b>General</b>	<b>85</b>	<b>41</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>350</b>
electron transport	37		17			
energy reserve metabolism	2					
metabolism	46	41				
<b>Stress responses</b>	<b>16</b>	<b>12</b>	<b>3</b>	<b>5</b>	<b>3</b>	<b>450</b>
<b>Oxidative stress response</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>24</b>
none						
<b>Inflammatory response</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>41</b>
inflammatory response				3		
<b>Immune response</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>298</b>
interferon-gamma biosynthesis					1	
positive regulation of immune response	3					
positive regulation of myoblast differentiation					1	
regulation of macrophage activation	2	2				
<b>Other</b>	<b>11</b>	<b>10</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>87</b>
cellular response to starvation				1	1	
response to hypoxia			3	1		
response to unfolded protein	8	7				
wound healing	3	3				
<b>Organismic regulation</b>	<b>5</b>	<b>8</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>166</b>
<b>Behavior</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>8</b>
eating behavior					1	
<b>Ontogenesis</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>97</b>
brain development			3			
embryo implantation		3				
positive regulation of angiogenesis				1	1	
regulation of angiogenesis				1		
<b>Systemic regulation</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>53</b>

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



**SUPPLEMENTAL TABLE 3. Categorized processes in the liver**

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

mechanoreceptor differentiation				1		
mesoderm development	2					
positive regulation of neuron differentiation			1			
retinal rod cell development			1	1	1	
<b>Apoptotic cell death</b>	<b>22</b>	<b>18</b>	<b>0</b>	<b>3</b>	<b>3</b>	155
apoptosis	16	18				
negative regulation of apoptosis	6			3	3	
<b>Cell death</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	13
cytolysis	5					
<b>General</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	2
none						
<b>Cell communication</b>	<b>0</b>	<b>9</b>	<b>6</b>	<b>10</b>	<b>4</b>	381
<b>Intercellular signaling</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	16
synaptic transmission; cholinergic				1		
<b>Signal transduction</b>	<b>0</b>	<b>9</b>	<b>6</b>	<b>9</b>	<b>4</b>	365
activation of MAPKK activity				1		
estrogen receptor signaling pathway		2		1		
G-protein signaling; coupled to cGMP nucleotide second 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 MAPK activity			1	1	1	
regulation of Wnt receptor signaling pathway			1			
transmembrane receptor protein tyrosine kinase signaling pathway			3			
<b>Metabolism</b>	<b>58</b>	<b>113</b>	<b>17</b>	<b>10</b>	<b>31</b>	828
<b>Proteins, amino acids</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>4</b>	<b>3</b>	62
glutathione metabolism		4				
glycine catabolism		2				
protein polymerization				4	3	
ubiquitin-dependent protein catabolism		6				
<b>Lipids, fatty acids</b>	<b>14</b>	<b>43</b>	<b>14</b>	<b>2</b>	<b>19</b>	292
acyl-CoA metabolism		4			2	
bile acid biosynthesis			1		1	
bile acid metabolism		3				
cholesterol biosynthesis		5				
cholesterol metabolism		6	3		3	
fatty acid alpha-oxidation			1			
fatty acid biosynthesis		6				
fatty acid oxidation	2					
ganglioside biosynthesis					1	
lipid biosynthesis	10	11				
lipid metabolism			7		8	
negative regulation of lipoprotein lipase activity				1	1	
phospholipid biosynthesis		6				
phospholipid metabolism			2			

positive regulation of lipid metabolism		2		1		
regulation of fatty acid metabolism	2					
steroid metabolism					3	
<b>Carbohydrates</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>33</b>
gluconeogenesis	4					
glucuronate metabolism			1			
glycerol biosynthesis from pyruvate					1	
glycogen biosynthesis				1		
glyoxylate cycle		2				
<b>Signaling molecules</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>18</b>
hormone biosynthesis			1			
negative regulation of nitric oxide biosynthesis				1		
<b>Nucleic acid-related</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>32</b>
deoxyribonucleotide catabolism		2				
DNA recombination	3					
uridine metabolism				1		
<b>Other</b>	<b>7</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>41</b>
aromatic compound catabolism	2					
carotenoid biosynthesis		2				
glycosaminoglycan catabolism			1			
glycosaminoglycan metabolism	2	2				
isoprenoid biosynthesis		2				
retinal metabolism	3					
<b>General</b>	<b>30</b>	<b>48</b>	<b>0</b>	<b>1</b>	<b>8</b>	<b>350</b>
ATP biosynthesis		4				
ATP synthesis coupled proton transport		9				
electron transport	30	35			8	
regulation of metabolism				1		
<b>Stress responses</b>	<b>19</b>	<b>13</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>450</b>
<b>Oxidative stress response</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>24</b>
L-ascorbic acid metabolism				1		
response to oxidative stress				2		
<b>Inflammatory response</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>
none						
<b>Immune response</b>	<b>9</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>298</b>
acute-phase response		6				
interferon-gamma biosynthesis				1		
interleukin-2 biosynthesis	2					
mast cell activation	3					
negative regulation of T cell receptor signaling pathway	2					
regulation of interleukin-6 biosynthesis				1	1	
regulation of macrophage activation	2					
<b>Other</b>	<b>10</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>87</b>
cellular response to starvation				1		
ER overload response					1	
response to stress	4					
response to unfolded protein	6	7				

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

**SUPPLEMENTAL TABLE 4. Categorized processes in the lung**

Categories and subcategories	<sup>211</sup> At activity [kBq]:					No. (filtered transcripts)
	0.064	0.64	1.8	14	42	
	Absorbed dose [mGy]:					
	1.6	16	45	350	1000	
	No. (scored transcripts)					
<b>DNA integrity</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>109</b>
<b>Damage and repair</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>
none						
<b>Chromatin organization</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>79</b>
telomere maintenance	3					
<b>Gene expression integrity</b>	<b>30</b>	<b>15</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>661</b>
<b>Transcription</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>567</b>
none						
<b>RNA processing</b>	<b>21</b>	<b>11</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>64</b>
mRNA processing	10	8				
mRNA splice site selection	3	3	2			
nuclear mRNA splicing; via spliceosome	6					
regulation of mRNA stability	2					
<b>Translation</b>	<b>9</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>30</b>
regulation of protein biosynthesis	5	4				
regulation of translation	4					
translational elongation					1	
<b>Cellular integrity</b>	<b>67</b>	<b>73</b>	<b>5</b>	<b>8</b>	<b>16</b>	<b>1054</b>
<b>Physico-chemical environment</b>	<b>3</b>	<b>6</b>	<b>0</b>	<b>8</b>	<b>6</b>	<b>174</b>
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					
<b>Cytoskeleton &amp; motility</b>	<b>24</b>	<b>14</b>	<b>5</b>	<b>0</b>	<b>10</b>	<b>139</b>
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 polymerization			1			
regulation of actin filament polymerization	3	3				
regulation of locomotion			1		1	
sarcomere alignment					1	
<b>Extracellular matrix &amp; CM</b>	<b>3</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>152</b>
cell adhesion		24				
collagen fibril organization	3					
<b>Supramolecular maintenance</b>	<b>37</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>589</b>
protein folding	16	13				
protein modification	6	5				

ubiquitin cycle	15	11				
<b>Cell cycle and differentiation</b>	<b>7</b>	<b>11</b>	<b>6</b>	<b>2</b>	<b>4</b>	<b>510</b>
<b>Cell cycle regulation</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>290</b>
regulation of cell growth		7				
<b>Differentiation &amp; aging</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>50</b>
cartilage condensation			1	1	1	
enucleate erythrocyte differentiation					1	
keratinocyte differentiation	5	4				
<b>Apoptotic cell death</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>155</b>
anti-apoptosis					2	
apoptotic mitochondrial changes	2		1			
induction of apoptosis			3			
<b>Cell death</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>
none						
<b>General</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>
regulation of cellular process			1	1		
<b>Cell communication</b>	<b>31</b>	<b>65</b>	<b>17</b>	<b>18</b>	<b>29</b>	<b>381</b>
<b>Intercellular signaling</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>16</b>
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	
<b>Signal transduction</b>	<b>29</b>	<b>65</b>	<b>12</b>	<b>18</b>	<b>24</b>	<b>365</b>
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					
<b>Metabolism</b>	<b>15</b>	<b>55</b>	<b>10</b>	<b>11</b>	<b>20</b>	<b>828</b>
<b>Proteins, amino acids</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>62</b>
collagen catabolism		4		2		
ubiquitin-dependent protein catabolism	6					
<b>Lipids, fatty acids</b>	<b>0</b>	<b>8</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>292</b>
fatty acid elongation			1			
fatty acid metabolism		8				
fatty acid oxidation				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	
<b>Carbohydrates</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>33</b>
glucose homeostasis		3				
glycerol metabolism			1		1	

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

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



**Supplemental Table 5. Categorized processes in the spleen**

Categories and subcategories	<sup>211</sup> At activity [kBq]:					No. (filtered transcripts)
	0.064	0.64	1.8	14	42	
	Absorbed dose [mGy]:					
	0.45	4.5	13	98	300	
	No. (scored transcripts)					
<b>DNA integrity</b>	<b>22</b>	<b>41</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>109</b>
<b>Damage and repair</b>	<b>0</b>	<b>12</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>30</b>
base-excision repair; DNA ligation				1		
base-excision repair; gap-filling			1		1	
DNA repair		12				
<b>Chromatin organization</b>	<b>22</b>	<b>29</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>79</b>
chromosome condensation			1			
chromosome organization and biogenesis (sensu Eukaryota)	10	11				
DNA topological change			1			
establishment and/or maintenance of chromatin architecture		3				
nucleosome assembly	12	15				
<b>Gene expression integrity</b>	<b>234</b>	<b>248</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>661</b>
<b>Transcription</b>	<b>161</b>	<b>171</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>567</b>
positive regulation of transcription	9					
regulation of transcription; DNA-dependent transcription	78	89				
	74	82				
<b>RNA processing</b>	<b>20</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>64</b>
mRNA processing	11	14				
nuclear mRNA splicing; via spliceosome		9				
rRNA processing	9					
<b>Translation</b>	<b>53</b>	<b>54</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>30</b>
none						
<b>Cellular integrity</b>	<b>45</b>	<b>47</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1054</b>
<b>Physico-chemical environment</b>	<b>8</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>174</b>
iron ion homeostasis		4				
regulation of pH	3					
release of sequestered calcium ion into cytosol	2					
response to pH	3	3				
<b>Cytoskeleton &amp; motility</b>	<b>20</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>139</b>
microtubule-based movement	10	12				
microtubule-based process	8	9				
substrate-bound cell migration; cell extension	2					
<b>Extracellular matrix &amp; CM</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>152</b>
cell-matrix adhesion			2			
<b>Supramolecular maintenance</b>	<b>17</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>589</b>
ubiquitin cycle	17	19				
<b>Cell cycle and differentiation</b>	<b>126</b>	<b>190</b>	<b>7</b>	<b>25</b>	<b>2</b>	<b>510</b>
<b>Cell cycle regulation</b>	<b>96</b>	<b>133</b>	<b>6</b>	<b>24</b>	<b>2</b>	<b>290</b>
cell cycle	38	52		9		
cell cycle arrest		7				
cell division	23	28				

chromosome segregation		4		2		
DNA replication	15	19	3	8		
DNA replication initiation	7	7	2	3		
dTMP biosynthesis				1		
mitosis	13	16				
positive regulation of cell growth					1	
regulation of DNA replication			1	1	1	
<b>Differentiation &amp; aging</b>	<b>6</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>50</b>
cartilage condensation			1	1		
epithelial to mesenchymal transition	2					
keratinocyte differentiation	4	4				
<b>Apoptotic cell death</b>	<b>24</b>	<b>53</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>155</b>
anti-apoptosis		10				
apoptosis	24	28				
induction of apoptosis		15				
<b>Cell death</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>
none						
<b>General</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
none						
<b>Cell communication</b>	<b>25</b>	<b>24</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>381</b>
<b>Intercellular signaling</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>
neuromuscular synaptic transmission	2					
synaptic vesicle transport	2					
<b>Signal transduction</b>	<b>21</b>	<b>24</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>365</b>
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				
<b>Metabolism</b>	<b>45</b>	<b>158</b>	<b>23</b>	<b>36</b>	<b>19</b>	<b>828</b>
<b>Proteins, amino acids</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>62</b>
asparagine biosynthesis				1		
collagen catabolism				2		
protein amino acid esterification			1	1	1	
protein amino acid glycosylation				2		
<b>Lipids, fatty acids</b>	<b>0</b>	<b>3</b>	<b>11</b>	<b>9</b>	<b>12</b>	<b>292</b>
ceramide catabolism			1	1	1	
ceramide metabolism		3				
cholesterol absorption			1	1	1	
cholesterol catabolism					1	
fatty acid catabolism			1		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	
<b>Carbohydrates</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>
none						
<b>Signaling molecules</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>

positive regulation of nitric oxide biosynthesis	2					
<b>Nucleic acid-related</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	32
none						
<b>Other</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	41
none						
<b>General</b>	<b>43</b>	<b>155</b>	<b>11</b>	<b>21</b>	<b>6</b>	350
none						
<b>Stress responses</b>	<b>43</b>	<b>132</b>	<b>7</b>	<b>11</b>	<b>6</b>	<b>450</b>
<b>Oxidative stress response</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>0</b>	24
hydrogen peroxide catabolism		3	2	2		
<b>Inflammatory response</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>6</b>	<b>3</b>	41
arachidonic acid secretion				1		
inflammatory response		17		5	3	
<b>Immune response</b>	<b>43</b>	<b>98</b>	<b>3</b>	<b>2</b>	<b>2</b>	298
acute-phase response			3		2	
B cell receptor signaling pathway	2					
cytokinesis				2		
defense response		17				
immune response	32	40				
immunoglobulin secretion		4				
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		4				
positive regulation of T cell proliferation		6				
regulation of immune response	4	4				
regulation of T cell differentiation		3				
T cell receptor signaling pathway		4				
<b>Other</b>	<b>0</b>	<b>14</b>	<b>2</b>	<b>1</b>	<b>1</b>	87
cellular response to starvation			2		1	
response to biotic stimulus				1		
response to DNA damage stimulus		11				
response to drug		3				
<b>Organismic regulation</b>	<b>0</b>	<b>8</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>166</b>
<b>Behavior</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	8
none						
<b>Ontogenesis</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>0</b>	97
embryonic cleavage			1	1		
embryonic development		8				
<b>Systemic regulation</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>3</b>	53
digestion			3	3	3	
<b>Reproduction</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	8
meiotic chromosome segregation				1		