The LMMA ID is a 10-digit number (e.g. LMMA0000000089). Here we use an abbreviated form, “LMMA . . 3 digits” (e.g.; LMMA . . 089), for easier viewing.

**LMMA . . 210** lower respiratory tract – P0 to P03 [mid-to-late saccular stage of mouse lung development]

- **LMMA . . 361** trachea
  - **LMMA . . 362** trachea bifurcation
  - **LMMA . . 365** trachea lumen
  - **LMMA . . 366** trachea wall
  - **LMMA . . 415** tracheal mucosa
  - **LMMA . . 414** basal cell
  - **LMMA . . 125** chemosensory cell (syn: brush cell)
  - **LMMA . . 142** ciliated cell
  - **LMMA . . 143** club cell (syn: Clara cell; nonciliated secretory cell; bronchiolar exocrine cell)
  - **LMMA . . 184** immature club cell (syn: immature Clara cell)
  - **LMMA . . 526** intermediate airway progenitor cell
  - **LMMA . . 238** mucus cell (syn: mucous cell)
  - **LMMA . . 252** neuroendocrine cell
  - **LMMA . . 340** serous cell
  - **LMMA . . 483** tracheal lamina propria
  - **LMMA . . 136** connective tissue cell
  - **LMMA . . 356** telocyte
  - **LMMA . . 386** unclassified fibroblast
  - **LMMA . . 168** extracellular matrix
  - **LMMA . . 145** collagen fiber
  - **LMMA . . 158** elastic fiber
  - **LMMA . . 180** ground substance
  - **LMMA . . 529** glycosaminoglycan
  - **LMMA . . 178** glycoprotein
  - **LMMA . . 283** proteoglycan
  - **LMMA . . 320** reticular fiber
  - **LMMA . . 416** tracheal submucosa
  - **LMMA . . 047** submucosal gland
  - **LMMA . . 089** basement membrane
  - **LMMA . . 351** submucosal gland epithelium
  - **LMMA . . 238** mucus cell (syn: mucous cell)
  - **LMMA . . 340** serous cell
  - **LMMA . . 242** myoepithelial cell
  - **LMMA . . 455** submucosal gland duct epithelium
  - **LMMA . . 087** basal cell
  - **LMMA . . 125** chemosensory cell (syn: brush cell)
  - **LMMA . . 142** ciliated cell
  - **LMMA . . 146** collecting duct cell
  - **LMMA . . 606** tracheal cartilaginous ring
  - **LMMA . . 592** annular ligament
  - **LMMA . . 183** hyaline cartilage
  - **LMMA . . 141** chondrocyte
bronchus

- main bronchus (syn: primary bronchus; mainstem bronchus)
- left lung main bronchus (syn: left lung mainstem bronchus; left lung primary bronchus)
- right lung main bronchus (syn: right lung primary bronchus; right lung mainstem bronchus)
- lobar bronchus (syn: secondary bronchus)
- right lung upper lobar bronchus (syn: right cranial lobar bronchus; right apical lobar bronchus)
- right lung middle lobar bronchus (syn: right cardiac lobar bronchus)
- right lung lower lobar bronchus (syn: right caudal lobar bronchus; right diaphragmatic lobar bronchus)
- right lung accessory lobar bronchus (syn: right post-caval lobar bronchus; right infra-cardiac lobar bronchus; right intermediate lobar bronchus)

Note: The classification scheme for each bronchus above is the same as below.

- bronchus lumen
ground substance
glycosaminoglycan
glycoprotein
proteoglycan
reticular fiber
bronchial adventitia
adipose tissue
adipocyte
connective tissue cell
telecyte
extracellular matrix
collagen fiber
elastic fiber
ground substance
glycosaminoglycan
glycoprotein
proteoglycan
reticular fiber

lung
left lung
right lung
right lung upper lobe (syn: right cranial lobe; right apical lobe)
right lung middle lobe (syn: right cardiac lobe)
right lung lower lobe (syn: right caudal lobe; right diaphragmatic lobe)
right lung accessory lobe (syn: right post-caval lobe; right infra-cardiac lobe; right intermediate lobe)

Note: The classification scheme for the left lung and right lung middle, lower, and accessory lobes is the same as for the right lung upper lobe below:
LMMA . 168 | extracellular matrix
LMMA . 145 | collagen fiber
LMMA . 158 | elastic fiber
LMMA . 180 | ground substance
LMMA . 529 | glycosaminoglycan
LMMA . 178 | glycoprotein
LMMA . 283 | proteoglycan
LMMA . 320 | reticular fiber
LMMA . 240 | bronchiolar smooth muscle (syn: peribronchiolar smooth muscle)
LMMA . 343 | smooth muscle cell
LMMA . 198 | lateral bronchiol (syn: distal bronchiole; secondary bronchiole)
LMMA . 196 | lateral bronchiolar lumen
LMMA . 197 | lateral bronchiolar wall
LMMA . 433 | lateral bronchiolar epithelium (syn: distal bronchiolar epithelium)
LMMA . 089 | basement membrane
LMMA . 582 | bronchiolar epithelial cell
LMMA . 142 | ciliated cell
LMMA . 184 | immature club cell (syn: immature Clara cell)
LMMA . 252 | neuroendocrine cell
LMMA . 253 | neuroepithelial body
LMMA . 252 | neuroendocrine cell
LMMA . 384 | unclassified epithelial cell (syn: general epithelial cell; nonspecific epithelial cell)
LMMA . 391 | variant club cell
LMMA . 525 | bronchiolar connective tissue (syn: peribronchiolar connective tissue)
LMMA . 136 | connective tissue cell
LMMA . 356 | telocyte
LMMA . 386 | unclassified fibroblast
LMMA . 168 | extracellular matrix
LMMA . 145 | collagen fiber
LMMA . 158 | elastic fiber
LMMA . 180 | ground substance
LMMA . 529 | glycosaminoglycan
LMMA . 178 | glycoprotein
LMMA . 283 | proteoglycan
LMMA . 320 | reticular fiber
LMMA . 240 | bronchiolar smooth muscle (syn: peribronchiolar smooth muscle)
LMMA . 343 | smooth muscle cell
LMMA . 359 | terminal bronchiole
LMMA . 357 | terminal bronchiolar lumen
LMMA . 358 | terminal bronchiolar wall
LMMA . 457 | terminal bronchiolar epithelium
LMMA . 089 | basement membrane
LMMA . 582 | bronchiolar epithelial cell
LMMA . 142 | ciliated cell
LMMA . 184 | immature club cell (syn: immature Clara cell)
LMMA . 252 | neuroendocrine cell
LMMA . 253 | neuroepithelial body
LMMA . 252 | neuroendocrine cell
LMMA . 384 | unclassified epithelial cell (syn: general epithelial cell; nonspecific epithelial cell)
right upper lobe alveolar parenchyma

Variants of club cells:
- variant club cell

Bronchioalveolar duct junction:
- bronchiolar smooth muscle (syn: peribronchiolar smooth muscle)

Alveolar Epithelium:
- type II pneumocyte (syn: alveolar epithelial type II cell; AT2 cell; AEC2)
- type I pneumocyte (syn: alveolar epithelial type I cell; AT1 cell; AEC1)
- alveolar duct lumen
- alveolar duct wall
- basement membrane
- alveolar epithelial cell
- intermediate pneumocyte (syn: bi-potential pneumocyte)
- alveolar capillary bed (syn: alveolar capillary network)
- alveolar capillary endothelium
- alveolar interstitial tissue (syn: alveolar interstitium; alveolar connective tissue; alveolar stroma; alveolar mesenchyme)
- basement membrane
- pericyte
- vascular endothelial cell

Interstitial Cells:
- lipofibroblast
- matrix fibroblast
- myofibroblast (syn: matrix synthesizing fibroblast)
- pericyte
- telocyte
- extracellular matrix
- proliferative fibroblast
- unclassified fibroblast
NOTE: there are NO alveolar septal crests/ridges yet or secondary alveoli or alveolar speta

LMMA . . 065 ┤ alveolar epithelium
LMMA . . 089 ┤ basement membrane
LMMA . . 574 ┤ alveolar epithelial cell
LMMA . . 187 ┤ intermediate pneumocyte (syn: bi-potential pneumocyte)
LMMA . . 379 ┤ type I pneumocyte (syn: alveolar epithelial type I cell; AT1 cell; AEC1)
LMMA . . 381 ┤ type II pneumocyte (syn: alveolar epithelial type II cell; AT2 cell; AEC2)
LMMA . . 060 ┤ alveolar capillary bed (syn: alveolar capillary network)
LMMA . . 061 ┤ alveolar capillary endothelium
LMMA . . 089 ┤ basement membrane
LMMA . . 273 ┤ pericyte
LMMA . . 392 ┤ vascular endothelial cell
LMMA . . 067 ┤ alveolar interstitial tissue (syn: alveolar interstitium; alveolar connective tissue; alveolar stroma; alveolar mesenchyme)
LMMA . . 066 ┤ alveolar interstitial cell (syn stromal or connective tissue cell)
LMMA . . 209 ┤ lipofibroblast
LMMA . . 007 ┤ matrix fibroblast (syn: matrix synthesizing fibroblast)
LMMA . . 243 ┤ myofibroblast
LMMA . . 273 ┤ pericyte
LMMA . . 356 ┤ telocyte
LMMA . . 607 ┤ proliferative fibroblast
LMMA . . 386 ┤ unclassified fibroblast
LMMA . . 168 ┤ extracellular matrix
LMMA . . 145 ┤ collagen fiber
LMMA . . 158 ┤ elastic fiber
LMMA . . 180 ┤ ground substance
LMMA . . 529 ┤ glycosaminoglycan
LMMA . . 178 ┤ glycoprotein
LMMA . . 283 ┤ proteoglycan
LMMA . . 320 ┤ reticular fiber
LMMA . . 046 ┤ right upper lobe visceral pleura
LMMA . . 405 ┤ visceral connective tissue
LMMA . . 136 ┤ connective tissue cell
LMMA . . 685 ┤ reticular cell
LMMA . . 356 ┤ telocyte
LMMA . . 386 ┤ unclassified fibroblast
LMMA . . 168 ┤ extracellular matrix
LMMA . . 145 ┤ collagen fiber
LMMA . . 158 ┤ elastic fiber
LMMA . . 180 ┤ ground substance
LMMA . . 529 ┤ glycosaminoglycan
8 glycoprotein
LMMA . . 178

proteoglycan
LMMA . . 283

reticular fiber
LMMA . . 320

unclassified fibroblast
LMMA . . 386

visceral mesothelium
LMMA . . 406

basement membrane
LMMA . . 089

mesothelial cell
LMMA . . 520

respiratory autonomic nervous system (syn: autonomic respiratory nervous system)
LMMA . . 641

pulmonary autonomic nerve
LMMA . . 257

non-adrenergic and non-cholinergic nerve (syn: sensory nerve)
LMMA . . 247

nerve fiber
LMMA . . 338

glial cell (syn: neuroglial cell; Schwann cell)
LMMA . . 270

postganglionic parasympathetic nerve (syn: cholinergic innervation)
LMMA . . 247

nerve fiber
LMMA . . 338

glial cell (syn: neuroglial cell; Schwann cell)
LMMA . . 352

postganglionic sympathetic nerve (syn: adrenergic innervation)
LMMA . . 247

nerve fiber
LMMA . . 338

glial cell (syn: neuroglial cell; Schwann cell)
LMMA . . 642

preganglionic parasympathetic nerve
LMMA . . 247

nerve fiber
LMMA . . 338

glial cell (syn: neuroglial cell; Schwann cell)
LMMA . . 634

pulmonary autonomic ganglion (syn: nerve cell cluster)
LMMA . . 521

autonomic neuron (syn: autonomic ganglion cell; autonomic ganglion neuron)
LMMA . . 338

glial cell (syn: neuroglial cell; Schwann cell)
LMMA . . 633

pulmonary nerve plexus
LMMA . . 635

left pulmonary nerve plexus
LMMA . . 636

left anterior pulmonary nerve plexus
LMMA . . 637

left posterior pulmonary nerve plexus
LMMA . . 638

right pulmonary nerve plexus
LMMA . . 639

right anterior pulmonary nerve plexus
LMMA . . 640

right posterior pulmonary nerve plexus
LMMA . . 643

general visceral nervous system
LMMA . . 644

general visceral afferent nerve (syn: sensory nerve)
LMMA . . 247

nerve fiber
LMMA . . 338

glial cell (syn: neuroglial cell; Schwann cell)
LMMA . . 645

tvisceral afferent sensory nerve terminal (syn: visceral afferent sensory nerve receptor)

respiratory immune system
LMMA . . 522

immune cell
LMMA . . 185

dendritic cell
LMMA . . 150

Langerhans cell
LMMA . . 676

myeloid cell
LMMA . . 241

granulocyte
LMMA . . 179

basophil (syn: basophilic leukocyte; basophilic granulocyte)
LMMA . . 090

eosinophil
LMMA . . 163

neutrophil
LMMA . . 256

macrophage (syn: histiocyte)
LMMA . . 182

alveolar macrophage
LMMA . . 226

interstitial macrophage (syn: lung tissue macrophage; pulmonary interstitial macrophage)
LMMA . . 213
lymphoid macrophage
mast cell
megakaryocyte
platelet
monocyte
innate lymphoid cell
natural killer cell (syn: non-T, non-B lymphocyte; large granular lymphocyte)
lymphocyte
plasma cell (syn: mature B lymphocyte)
T Lymphocyte (syn: T cell)
lymphoid tissue
B Lymphocyte (syn: B cell)
plasma cell (syn: mature B lymphocyte)
T Lymphocyte (syn: T cell)
lymph node
connective tissue capsule
trabecula
cortex
primary lymphoid follicle
germinal center (syn: central zone of follicle; reactive center of follicle)
B Lymphocyte (syn: B cell)
plasma cell (syn: mature B lymphocyte)
cortical sinus
subcapsular sinus
medulla
medullary cord
B Lymphocyte (syn: B cell)
plasma cell (syn: mature B lymphocyte)
lymphoid macrophage
paracortex (syn: subcortical zone, interfollicular area of the lymph node)
reticular cell
T Lymphocyte (syn: T cell)

respiratory system blood vessel (syn: vascular system; vasculature)

blood cell
erthroid
erthocyte
bronchial blood vessel
bronchial artery
bronchial arteriole
bronchial vein
bronchial venule
Note: the classification schema for "bronchial blood vessel" is as follows:

- The classification scheme for the "bronchial artery" is the same as for the "pulmonary muscular artery" below
- The classification scheme for the "bronchial arteriole" is the same as for the "pulmonary distal arteriole" below
- The classification scheme for the "bronchial venule" is the same as for the "pulmonary vein" (does not include the "vasa vasorum") below
- The classification scheme for the "bronchial artery" is the same as for the "pulmonary distal venule" below
pulmonary arteriole

- pulmonary muscular arteriole
  - pulmonary muscular arteriole tunica intima
  - arteriole endothelium
  - basement membrane
  - vascular endothelial cell
  - subendothelial connective tissue cell
  - pericyte
  - telocyte
  - unclassified fibroblast
  - extracellular matrix
  - collagen fiber
  - elastic fiber
  - ground substance
  - glycosaminoglycan
  - glycoprotein
  - proteoglycan
  - reticular fiber
  - pulmonary muscular arteriole tunica media
  - vascular smooth muscle
  - smooth muscle cell
  - vascular connective tissue (syn: perivascular connective tissue)
  - connective tissue cell
  - telocyte
  - unclassified fibroblast
  - extracellular matrix
  - collagen fiber
  - elastic fiber
  - ground substance
  - glycosaminoglycan
  - glycoprotein
  - proteoglycan
  - reticular fiber
  - pulmonary muscular arteriole tunica adventitia
  - vasa vasorum
| LMMA . . | 136 |       |       | collagen fiber |
| LMMA . . | 158 |       |       | elastic fiber |
| LMMA . . | 180 |       |       | ground substance |
| LMMA . . | 529 |       |       | glycosaminoglycan |
| LMMA . . | 178 |       |       | glycoprotein |
| LMMA . . | 283 |       |       | proteoglycan |
| LMMA . . | 320 |       |       | reticular fiber |
| LMMA . . | 297 |       |       | pulmonary distal arteriole |
| LMMA . . | 299 |       |       | pulmonary distal arteriole tunica intima |
| LMMA . . | 078 |       |       | arteriole endothelium |
| LMMA . . | 089 |       |       | basement membrane |
| LMMA . . | 392 |       |       | vascular endothelial cell |
| LMMA . . | 378 |       |       | subendothelial connective tissue cell |
| LMMA . . | 273 |       |       | pericyte |
| LMMA . . | 356 |       |       | telocyte |
| LMMA . . | 440 |       |       | vascular connective tissue (syn: perivascular connective tissue) |
| LMMA . . | 136 |       |       | connective tissue cell |
| LMMA . . | 356 |       |       | telocyte |
| LMMA . . | 386 |       |       | unclassified fibroblast |
| LMMA . . | 168 |       |       | extracellular matrix |
| LMMA . . | 145 |       |       | collagen fiber |
| LMMA . . | 158 |       |       | elastic fiber |
| LMMA . . | 180 |       |       | ground substance |
| LMMA . . | 529 |       |       | glycosaminoglycan |
| LMMA . . | 178 |       |       | glycoprotein |
| LMMA . . | 283 |       |       | proteoglycan |
| LMMA . . | 320 |       |       | reticular fiber |
| LMMA . . | 300 |       |       | pulmonary distal arteriole tunica media |
| LMMA . . | 393 |       |       | vascular smooth muscle |
| LMMA . . | 343 |       |       | smooth muscle cell |
| LMMA . . | 440 |       |       | vascular connective tissue (syn: perivascular connective tissue) |
| LMMA . . | 136 |       |       | connective tissue cell |
| LMMA . . | 356 |       |       | telocyte |
| LMMA . . | 386 |       |       | unclassified fibroblast |
| LMMA . . | 168 |       |       | extracellular matrix |
| LMMA . . | 145 |       |       | collagen fiber |
| LMMA . . | 158 |       |       | elastic fiber |
| LMMA . . | 180 |       |       | ground substance |
| LMMA . . | 529 |       |       | glycosaminoglycan |
| LMMA . . | 178 |       |       | glycoprotein |
| LMMA . . | 283 |       |       | proteoglycan |
| LMMA . . | 320 |       |       | reticular fiber |
| LMMA . . | 298 |       |       | pulmonary distal arteriole adventitia |
| LMMA . . | 440 |       |       | vascular connective tissue (syn: perivascular connective tissue) |
| LMMA . . | 136 |       |       | connective tissue cell |
| LMMA . . | 356 |       |       | telocyte |
| LMMA . . | 386 |       |       | unclassified fibroblast |
| LMMA . . | 168 |       |       | extracellular matrix |
| LMMA . . | 145 |       |       | collagen fiber |
| LMMA . . | 158 |       |       | elastic fiber |
| LMMA . . | 180 |       |       | ground substance |
| LMMA . . | 529 |       |       | glycosaminoglycan |

P0-P03
pulmonary venule
telocyte
vascular connective tissue (syn: perivascular connective tissue)
telocyte
vascular smooth muscle
smooth muscle cell
venous cardiac muscle
cardiomyocyte (syn: cardiac myocyte)
vascular connective tissue (syn: perivascular connective tissue)
telocyte
vascular smooth muscle
smooth muscle cell
venous cardiac muscle
cardiomyocyte (syn: cardiac myocyte)
vascular connective tissue (syn: perivascular connective tissue)
telocyte
vascular smooth muscle
smooth muscle cell
venous cardiac muscle
cardiomyocyte (syn: cardiac myocyte)
vascular connective tissue (syn: perivascular connective tissue)
telocyte
vascular smooth muscle
smooth muscle cell
venous cardiac muscle
cardiomyocyte (syn: cardiac myocyte)
vascular connective tissue (syn: perivascular connective tissue)
telocyte
vascular smooth muscle
smooth muscle cell
venous cardiac muscle
cardiomyocyte (syn: cardiac myocyte)
vascular connective tissue (syn: perivascular connective tissue)
telocyte
vascular smooth muscle
smooth muscle cell
venous cardiac muscle
cardiomyocyte (syn: cardiac myocyte)
vascular connective tissue (syn: perivascular connective tissue)
pulmonary lymphatic vessel

vessel endothelium
basement membrane
vascular endothelial cell
subendothelial connective tissue cell
pericyte
telecyte
vascular connective tissue (syn: perivascular connective tissue)
connective tissue cell
telecyte
unclassified fibroblast
extracellular matrix
collagen fiber
elastic fiber
ground substance
glycosaminoglycan
glycoprotein
reteolar fiber
vascular distal venule

lymphatic vessel tunica intima

vascular distal venule tunica adventitia

vascular connective tissue (syn: perivascular connective tissue)
connective tissue cell
telecyte
unclassified fibroblast
extracellular matrix
collagen fiber
elastic fiber
ground substance
glycosaminoglycan
glycoprotein
reteolar fiber
vascular distal venule

lymphatic vessel tunica intima

vascular distal venule tunica adventitia

vascular connective tissue (syn: perivascular connective tissue)
ground substance
glycosaminoglycan
glycoprotein
proteoglycan
reticular fiber
lymphatic vessel tunica media
lymphatic smooth muscle
smooth muscle cell
vascular connective tissue (syn: perivascular connective tissue)
connective tissue cell
telocyte
unclassified fibroblast
extracellular matrix
collagen fiber
ground substance
elastic fiber
vascular connective tissue (syn: perivascular connective tissue)
connective tissue cell
telocyte
unclassified fibroblast
extracellular matrix
collagen fiber
ground substance
elastic fiber
vascular connective tissue (syn: perivascular connective tissue)