



# CMHD Pathology Report



## CMHD Pathology Core

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ReportID: Report Date: July 24, 2013  
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## Mouse Genetics Project

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CMHD LabID: N13-488

## Relevant History:

Phenotype:

increased susceptibility to bacterial infection  
increased susceptibility to bacterial infection induced morbidity/mortality  
abnormal body weight  
abnormal cornea morphology  
decreased survivor rate  
increased pulmonary respiratory rate

## AnimalID: M00909622 (Male)

### Histopathology Findings:

#### thymus (MA:0000142)

##### Histopath Description:

There is a 50 um diameter epithelial cyst.

##### Morphological Diagnosis:

**Distribution:** focal; **MPATH Diagnosis:** cyst MPATH:62

##### Definitive Diagnosis:

Epithelial cyst

##### Histopathology Comments:

This is a developmental abnormality commonly seen in mice.

#### lymph node (MA:0000139)

##### Histopath Description:

The mesenteric lymph node is markedly enlarged (greater than five-fold). The medulla is expanded by chords and sheets of plasmotoid cells.

##### Morphological Diagnosis:

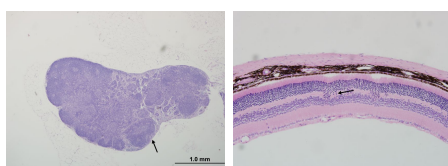
**Distribution:** Diffuse; **Severity:** severe; **MPATH Diagnosis:** hyperplasia MPATH:134

##### Definitive Diagnosis:

Lymphoid hyperplasia with medullary plasmacytosis.

##### Histopathology Comments:

The changes in the mesenteric lymph node are suggestive of draining of a regional inflammatory process. However, such a process was not observed in the tissues examined.



Lymph node,  
hyperplasia, 4x

Eye, retina, retinal  
dysplasia, 20x

#### liver (MA:0000358)

**Histopath Description:**

diffuse lipidosis

**Morphological Diagnosis:****Distribution:** diffuse; **Severity:** extreme; **MPATH Diagnosis:** steatosis MPATH:622**Definitive Diagnosis:**

Moderate hepatic steatosis

**testis (MA:0000411)****Histopath Description:**

There is a multifocal vacuolar degeneration and atrophy of the seminiferous tubule.

**Morphological Diagnosis:****Distribution:** multifocal; **Severity:** mild;**Definitive Diagnosis:**

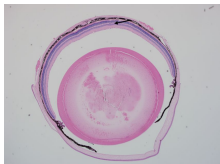
Testicular degeneration and atrophy

**eye (MA:0000261)****Histopath Description:**

Involving one eye, there are clusters of external nuclear structures within the internal plexiform layer.

**Morphological Diagnosis:****Distribution:** multifocal; **Severity:** mild;**Definitive Diagnosis:**

Retinal dysplasia



Eye, retina, retinal  
dysplasia, 4x

**Organ/Tissue Analyzed:**

Histopathology examination included the following organs and tissues: brain, trigeminal ganglion, eyes, salivary glands, trachea, lungs, heart, thymus, thyroid gland, parathyroid gland, exocrine and endocrine pancreas, oesophagus, stomach, small intestine, large intestine, liver, gall bladder, spleen, kidneys, adrenal gland, lymph nodes, spinal cord, bone marrow, sternum, femur and tibia with associated skeletal muscles, brown fat, pinna, skin, testis, epididymis, seminal vesicle, and prostate.

**AnimalID: M00906056 (Male)****Histopathology Findings:****thymus (MA:0000142)****Histopath Description:**

There is a 50 um diameter epithelial cyst.

**Morphological Diagnosis:****Distribution:** focal; **MPATH Diagnosis:** cyst MPATH:62**Definitive Diagnosis:**

Epithelial cyst

**Histopathology Comments:**

This is a developmental abnormality commonly seen in mice.

**lymph node (MA:0000139)****Histopath Description:**

The mesenteric lymph node is markedly enlarged (greater than seven-fold). The medulla is expanded by chords and sheets of plasmotoid cells.

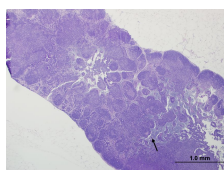
**Morphological Diagnosis:****Distribution:** Diffuse; **Severity:** severe; **MPATH Diagnosis:** hyperplasia MPATH:134**Definitive Diagnosis:**

Lymphoid hyperplasia with medullary plasmacytosis.

**Histopathology Comments:**

The changes in the mesenteric lymph node are suggestive of draining of a regional inflammatory

process. However, such a process was not observed in the tissues examined.



Lymph node,  
hyperplasia, 4x

#### **liver (MA:0000358)**

##### **Histopath Description:**

diffuse lipidosis

##### **Morphological Diagnosis:**

**Distribution:** diffuse; **Severity:** extreme; **MPATH Diagnosis:** steatosis MPATH:622

##### **Definitive Diagnosis:**

Moderate hepatic steatosis

#### **stomach (MA:0000353)**

##### **Histopath Description:**

The keratin layer is markedly thickened 3x normal

##### **Morphological Diagnosis:**

**Distribution:** focally extensive; **Severity:** severe; **MPATH Diagnosis:** hyperkeratosis MPATH:154

##### **Definitive Diagnosis:**

Hyperkeratosis

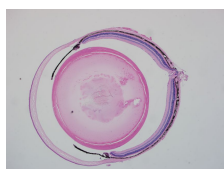
#### **eye (MA:0000261)**

##### **Morphological Diagnosis:**

**Severity:** no lesions;

##### **Definitive Diagnosis:**

Normal



Eye, normal, 4x

#### **Organ/Tissue Analyzed:**

Histopathology examination included the following organs and tissues: brain, trigeminal ganglion, eyes, salivary glands, trachea, lungs, heart, thymus, thyroid gland, parathyroid gland, exocrine and endocrine pancreas, oesophagus, stomach, small intestine, large intestine, liver, gall bladder, spleen, kidneys, adrenal gland, lymph nodes, spinal cord, bone marrow, sternum, femur and tibia with associated skeletal muscles, brown fat, pinna, skin, testis, epididymis, seminal vesicle, and prostate.

#### **AnimalID: M00867562 (Female)**

#### **Histopathology Findings:**

##### **lymph node (MA:0000139)**

##### **Histopath Description:**

The mesenteric lymph node is markedly enlarged (greater than three-fold). The medulla is expanded by chords and sheets of plasmacytoid cells.

##### **Morphological Diagnosis:**

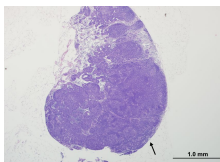
**Distribution:** Diffuse; **Severity:** moderate; **MPATH Diagnosis:** hyperplasia MPATH:134

##### **Definitive Diagnosis:**

Lymphoid hyperplasia with medullary plasmacytosis.

##### **Histopathology Comments:**

The changes in the mesenteric lymph node are suggestive of draining of a regional inflammatory process. However, such a process was not observed in the tissues examined.



Lymph node,  
hyperplasia, 4x

#### **liver (MA:0000358)**

##### **Histopath Description:**

diffuse lipidosis

##### **Morphological Diagnosis:**

**Distribution:** diffuse; **Severity:** extreme; **MPATH Diagnosis:** steatosis MPATH:622

##### **Definitive Diagnosis:**

Moderate hepatic steatosis

#### **eye (MA:0000261)**

##### **Histopath Description:**

A 100-um long stretch of fibrous connective tissue extends from the area of the optic disc towards the posterior capsule of the lens.

##### **Morphological Diagnosis:**

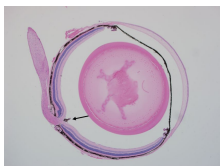
**MPATH Diagnosis:** developmental and structural abnormality MPATH:55

##### **Definitive Diagnosis:**

Persistent hyaloid artery

##### **Histopathology Comments:**

hyaloid artery remnant is a rare condition in which there remain some parts of the hyaloid artery. The posterior hyaloid vascular system of mice usually undergoes involution in the first month of life (Richard et al., 2000).



Eye, retina,  
Persistent hyaloid  
artery, 4x

#### **salivary gland (MA:0000346)**

##### **Histopath Description:**

There are multifocal perivascular mononuclear inflammatory cell aggregates.

##### **Morphological Diagnosis:**

**Distribution:** multifocal; **Severity:** mild;

##### **Definitive Diagnosis:**

Interstitial inflammatory aggregates

#### **kidney (MA:0000368)**

##### **Histopath Description:**

There are multifocal small perivascular aggregates of mononuclear inflammatory cells at the corticomedullary junction.

##### **Morphological Diagnosis:**

**Duration:** Chronic-active; **Distribution:** Focal; **Severity:** mild; **MPATH Diagnosis:** inflammation MPATH:212

##### **Definitive Diagnosis:**

Focal perivascular inflammatory aggregate.

##### **Histopathology Comments:**

This is a common incidental and insignificant lesion in mice

#### **lung (MA:0000415)**

##### **Histopath Description:**

There are rare small perivascular aggregates of mononuclear inflammatory cells in the lung.

##### **Morphological Diagnosis:**

**Duration:** Chronic; **Distribution:** Multifocal; **Severity:** mild; **MPATH Diagnosis:** inflammation

MPATH:212

**Definitive Diagnosis:**

Perivascular inflammatory aggregates

**Histopathology Comments:**

This lesion is suggestive of antigenic stimulation of hematogenous origin. It is a common and insignificant incidental finding.

**brain (MA:0000168)****Histopath Description:**

There is moderate dilation of the lateral ventricles

**Morphological Diagnosis:**

**Severity:** moderate; **MPATH Diagnosis:** hydrocephalus MPATH:639

**Organ/Tissue Analyzed:**

Histopathology examination included the following organs and tissues: brain, trigeminal ganglion, eyes, salivary glands, trachea, lungs, heart, thymus, thyroid gland, parathyroid gland, exocrine and endocrine pancreas, oesophagus, stomach, small intestine, large intestine, liver, gall bladder, spleen, kidneys, adrenal gland, lymph nodes, spinal cord, bone marrow, sternum, femur and tibia with associated skeletal muscles, brown fat, pinna, skin, uterus, oviduct, and ovary, and mammary gland.

**AnimalID: M00867561 (Female)****Histopathology Findings:****lymph node (MA:0000139)****Histopath Description:**

The mesenteric lymph node is markedly enlarged (greater than five-fold). The medulla is expanded by chords and sheets of plasmotoid cells.

**Morphological Diagnosis:**

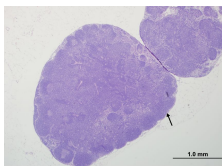
**Distribution:** Diffuse; **Severity:** severe; **MPATH Diagnosis:** hyperplasia MPATH:134

**Definitive Diagnosis:**

Lymphoid hyperplasia with medullary plasmacytosis.

**Histopathology Comments:**

The changes in the mesenteric lymph node are suggestive of draining of a regional inflammatory process. However, such a process was not observed in the tissues examined.



Lymph node,  
hyperplasia, 4x, HE

**liver (MA:0000358)****Histopath Description:**

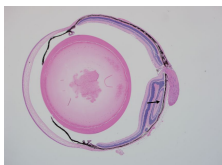
diffuse lipidosis

**Morphological Diagnosis:**

**Distribution:** diffuse; **Severity:** extreme; **MPATH Diagnosis:** steatosis MPATH:622

**Definitive Diagnosis:**

Moderate hepatic steatosis



Eye, retina, retinal  
dysplasia, 4x

**retina (MA:0000276)****Histopath Description:**

There is focally extensive marked retinal fold and disorganization

**Morphological Diagnosis:**

**Distribution:** focally extensive; **Severity:** moderate;

**Definitive Diagnosis:**

Retinal dysplasia

**salivary gland (MA:0000346)**

**Histopath Description:**

There are multifocal perivascular mononuclear inflammatory cell aggregates.

**Morphological Diagnosis:**

**Distribution:** multifocal; **Severity:** mild;

**Definitive Diagnosis:**

Interstitial inflammatory aggregates

**brain (MA:0000168)**

**Histopath Description:**

There is a 200 um diameter dermoid cyst within the hippocampal commissure. The cyst is keratin-filled and is lined by a well-differentiated simple squamous epithelium. The surrounding brain tissue is mildly compressed.

**Morphological Diagnosis:**

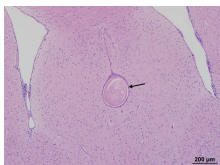
**Distribution:** Focal; **Severity:** mild; **MPATH Diagnosis:** dermoid cyst MPATH:311

**Definitive Diagnosis:**

Dermoid cyst (dermoid sinus)

**Histopathology Comments:**

Dermoid cyst is caused by defective epidermal closure along embryonic fissures isolating an island of ectoderm in the dermis or subcutis. The cyst was small with minimal compression of the surrounding brain tissue; its significance is uncertain.



Brain, medial septal nucleus, dermoid cyst, 10x, HE

**Organ/Tissue Analyzed:**

Histopathology examination included the following organs and tissues: brain, trigeminal ganglion, eyes, salivary glands, trachea, lungs, heart, thymus, thyroid gland, parathyroid gland, exocrine and endocrine pancreas, oesophagus, stomach, small intestine, large intestine, liver, gall bladder, spleen, kidneys, adrenal gland, lymph nodes, spinal cord, bone marrow, sternum, femur and tibia with associated skeletal muscles, brown fat, pinna, skin, uterus, oviduct, and ovary, and mammary gland.

**Report Summary and Recommendation:**

Marked lymph node hyperplasia was observed in all mice. The lesion may have significance in light of the increased susceptibility to bacterial infection.

There are no corneal abnormalities to corroborate abnormal cornea morphology. There is marked and mild retinal dysplasia in M00867561 and M00909622, respectively. No morphological correlates are apparent to explain abnormal body weight and increased pulmonary respiratory rate.

Summary: Retinal dysplasia (2/4, one marked); Lymph node hyperplasia (4/4).