



# CMHD Pathology Report



## CMHD Pathology Core

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## Mouse Genetics Project

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CMHD LabID: N13-484

## Relevant History:

Phenotype  
preweaning lethality  
abnormal retinal photoreceptor layer morphology  
embryonic lethality

## AnimalID: M00693767 (Male)

### Histopathology Findings:

#### eye (MA:0000261)

##### Histopath Description:

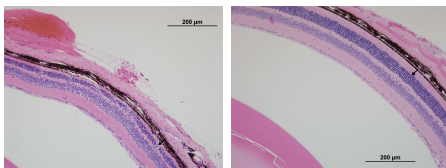
The outer nuclear layer (ONL) and the photoreceptor layer of the retina are diffusely thin. The ONL is also segmentally attenuated to clusters of few cells.

##### Morphological Diagnosis:

**Distribution:** diffuse; **Severity:** severe;

##### Definitive Diagnosis:

Retinal atrophy, outer nuclear layer and photoreceptor layer



Retina, WT, outer nuclear layer and photoreceptor layer, atrophy, 20x, HE

Retina, WT, outer nuclear layer and photoreceptor layer, normal, 20x, HE

#### testis (MA:0000411)

##### Histopath Description:

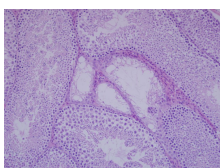
There is a focal vacuolar degeneration and atrophy of the seminiferous tubule.

##### Morphological Diagnosis:

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

##### Definitive Diagnosis:

Testicular degeneration and atrophy



Testis, degeneration and atrophy, 20x, HE

#### 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 plasmacytoid 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.

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

diffuse lipidosis

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

Hepatic lipidosis

**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.

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

There is mild dilation of the lateral ventricles

**Morphological Diagnosis:**

**Distribution:** bilateral; **Severity:** mild;

**Definitive Diagnosis:**

Dilation of the brain ventricles

**Histopathology Comments:**

Mild dilation of the lateral ventricles is a background condition in mice of C57BL/6N background (Brayton et al., 2004).

**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.

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**AnimalID: M00693765 (Male)****Histopathology Findings:****eye (MA:0000261)****Histopath Description:**

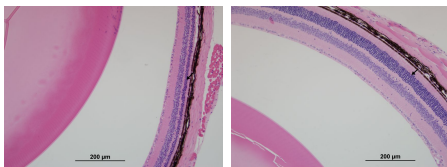
The outer nuclear layer (ONL) and the photoreceptor layer of the retina are diffusely thin. The ONL is also segmentally attenuated to clusters of few cells.

**Morphological Diagnosis:**

**Distribution:** diffuse; **Severity:** severe;

**Definitive Diagnosis:**

Retinal atrophy, outer nuclear layer and photoreceptor layer



Retina, WT, outer nuclear layer and photoreceptor layer, atrophy, 20x, HE

Retina, WT, outer nuclear layer and photoreceptor layer, normal, 20x, HE

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

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

diffuse lipidosis

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

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

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

Hepatic lipidosis

#### **brain (MA:0000168)**

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

There is mild dilation of the lateral ventricles

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

**Distribution:** bilateral; **Severity:** mild;

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

Dilation of the brain ventricles

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

Mild dilation of the lateral ventricles is a background condition in mice of C57BL/6N background (Brayton et al., 2004).

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

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

moderate neutrophilic gastritis; there is also mild epithelial proteinosis

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

**Distribution:** multifocal; **Severity:** moderate;

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

Moderate neutrophilic gastritis with epithelial proteinosis

#### **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: M00654658 (Female)**

##### **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.

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

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

diffuse lipidosis

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

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

**Definitive Diagnosis:**

Hepatic lipidosis

**brain (MA:0000168)**

**Histopath Description:**

There is mild dilation of the lateral ventricles

**Morphological Diagnosis:**

**Distribution:** bilateral; **Severity:** mild;

**Definitive Diagnosis:**

Dilation of the brain ventricles

**Histopathology Comments:**

Mild dilation of the lateral ventricles is a background condition in mice of C57BL/6N background (Brayton et al., 2004).

**retina (MA:0000276)**

**Histopath Description:**

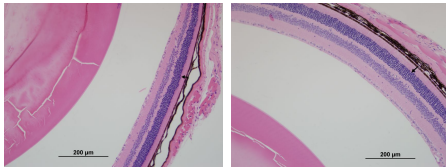
Normal

**Morphological Diagnosis:**

**Severity:** no lesions;

**Definitive Diagnosis:**

Normal retina



Retina, outer nuclear layer and photoreceptor layer, normal, 20x, HE

Retina, WT, outer nuclear layer and photoreceptor layer, normal, 20x, 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.

**AnimalID: M00654659 (Female)**

**Histopathology Findings:**

**liver (MA:0000358)**

**Histopath Description:**

diffuse lipidosis

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

Hepatic lipidosis

**brain (MA:0000168)**

**Histopath Description:**

There is mild dilation of the lateral ventricles

**Morphological Diagnosis:**

**Distribution:** bilateral; **Severity:** mild;

**Definitive Diagnosis:**

Dilation of the brain ventricles

**Histopathology Comments:**

Mild dilation of the lateral ventricles is a background condition in mice of C57BL/6N background (Brayton et al., 2004).

**spleen (MA:0000141)****Histopath Description:**

moderate erythroid hyperplasia

**Morphological Diagnosis:**

**Distribution:** multifocal; **Severity:** moderate; **MPATH Diagnosis:** extramedullary hemopoiesis  
MPATH:595

**Definitive Diagnosis:**

Splenic erythroid hyperplasia

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

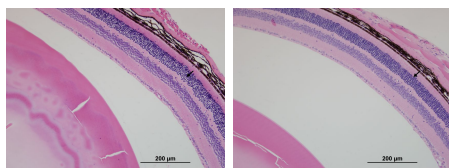
Normal

**Morphological Diagnosis:**

**Severity:** no lesions;

**Definitive Diagnosis:**

Normal retina



Retina, outer nuclear layer and photoreceptor layer, normal, 20x, HE      Retina, WT, outer nuclear layer and photoreceptor layer, normal, 20x, 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:**

Atrophy of the outer nuclear layer and the photoreceptor layer is observed in 2 mice consistent with abnormal retinal photoreceptor layer morphology observed on clinical phenotyping. The lesions appears to be sex dependent as only the male mice were affected.

There are no findings predictive of preweaning and embryonic lethality in this line; histopathology analysis of earlier age or embryos is recommended.

Line summary: Retina - Atrophy of the retinal layers (outer nuclear and photoreceptor) (2/4, both males); Testis - Atrophy and degeneration, multifocal (1/2)