



# CMHD Pathology Report



## CMHD Pathology Core

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## Mouse Genetics Project

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CMHD LabID: N13-578

## Relevant History:

Phenotype:

Homozygous partial lethality at P14

## AnimalID: M00796558 (Male)

### Histopathology Findings:

#### liver (MA:0000358)

##### Histopath Description:

diffuse lipidosis

##### Morphological Diagnosis:

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

##### Definitive Diagnosis:

hepatic steatosis

#### adrenal gland (MA:0000116)

##### Histopath Description:

There is a small, well-circumscribed mass in the cortex. It is encapsulated by a thin layer of pale eosinophilic material and fusiform cells (connective tissue with fibroblasts) and is made of nests of polygonal cells interspersed by a very thin fibrovascular membrane. The architecture is reminiscent of the zona glomerulosa and zona fasciculate of the mature adrenal gland.

##### Morphological Diagnosis:

**Distribution:** focal;

##### Definitive Diagnosis:

accessory adrenal cortical tissue

#### thymus (MA:0000142)

##### Histopath Description:

There is a 50 um diameter epithelial cyst within the medulla.

##### Morphological Diagnosis:

**Distribution:** multifocal; **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:

early lymphoma

##### Morphological Diagnosis:

**MPATH Diagnosis:** lymphoid neoplasms MPATH:513

**Definitive Diagnosis:**

Early lymphoma

**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: M00796559 (Male)**

**Histopathology Findings:**

**liver (MA:0000358)**

**Histopath Description:**

diffuse lipidosis

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

hepatic steatosis

**retina (MA:0000276)**

**Histopath Description:**

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

**Morphological Diagnosis:**

**Distribution:** Focal; **Severity:** mild;

**Definitive Diagnosis:**

Retinal dysplasia

**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: M00796560 (Female)**

**Histopathology Findings:**

**liver (MA:0000358)**

**Histopath Description:**

diffuse lipidosis

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

hepatic steatosis

**spleen (MA:0000141)**

**Histopath Description:**

marked erythroid hyperplasia

**Morphological Diagnosis:**

**Distribution:** multifocal to coalescing; **Severity:** extreme; **MPATH Diagnosis:** extramedullary hemopoiesis MPATH:595

**Definitive Diagnosis:**

Splenic erythroid hyperplasia

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

The mesenteric lymph node is markedly enlarged (greater than four fold). The medulla is particularly expanded by chords and sheets of plasmotoid cells. There are prominent germinal centers within the medulla

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

Lymphoid hyperplasia

**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. Early marginal center lymphoma is suspected.

**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.

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**AnimalID: M00796561 (Female)****Histopathology Findings:****liver (MA:0000358)****Histopath Description:**

diffuse lipidosis

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

hepatic steatosis

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

The mesenteric lymph node is markedly enlarged (greater than four fold). The medulla is particularly expanded by chords and sheets of plasmotoid cells. There are prominent germinal centers within the medulla

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

Lymphoid hyperplasia

**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. Early marginal center lymphoma is suspected.

**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:**

Lesions in this line are incidental or attributable to diet or strain background. There are no lesions predictive of homozygous lethality at P14. Analysis of preweaning homozygous animals is required to determine cause of mortality.

Recessive ABCA4 gene mutation in humans is associated with various retinal conditions including CONE-ROD DYSTROPHY 3#604116. We did not see any morphological abnormality in the retina except in one mouse with mild retinal dysplasia (heterotopia of external nuclear layer cells). This mild heterotopia is a background lesion C57/B6N strain and is not considered to have causal association with the genotype.

