



# CMHD Pathology Report



## CMHD Pathology Core

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## Mouse Genetics Project

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CMHD LabID: N13-466

## Relevant History:

narrow eye opening  
corneal opacity  
abnormal cornea morphology  
vertebral fusion  
abnormal spine curvature  
decreased platelet cell number  
decreased heart weight  
abnormal eye pigmentation  
eye opacity [mp:0009859]  
abnormal eye size  
narrow eye opening  
decreased body length  
decreased body weight  
decreased lean body mass  
decreased body weight  
kyphosis  
scoliosis  
partial lethality  
abnormal fertility/fecundity  
chromosomal instability

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## AnimalID: M00217387 (Male)

### Histopathology Findings:

#### parathyroid gland (MA:0000128)

##### Morphological Diagnosis:

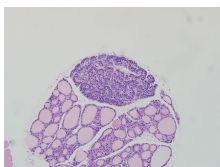
**Distribution:** unilateral; **Severity:** moderate; **MPATH Diagnosis:** cyst MPATH:62

##### Definitive Diagnosis:

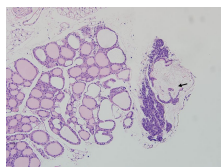
Unilateral Parathyroid cystic degeneration

##### Histopathology Comments:

The significance of this lesion is uncertain in presence of a normal contralateral gland



Parathyroid, cyst,  
20x, HE



Parathyroid,  
contralateral, 20x,  
HE

## liver (MA:0000358)

### Histopath Description:

diffuse lipidosis

### Morphological Diagnosis:

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

**Definitive Diagnosis:**

Hepatic lipidosis

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

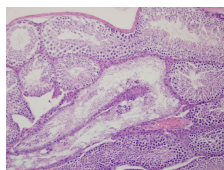
Bilateral testicular degeneration and atrophy affecting 20% of the seminiferous tubule profiles

**Morphological Diagnosis:****Distribution:** bilateral; **Severity:** moderate;**Definitive Diagnosis:**

Seminiferous tubules degeneration and atrophy

**Histopathology Comments:**

Testis is not available from the other male mouse



Testis, seminiferous tubules degeneration and atrophy, 20x, HE

**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:**

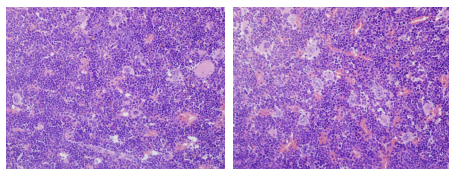
Mild dilation of the lateral ventricles is a background condition in mice of C57BL/6N background (Brayton et al., 2004).

**bone marrow (MA:0000134)****Histopath Description:**

The number of megakaryocytes is reduced (compared to wild type).

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

Megakaryocyte hypoplasia



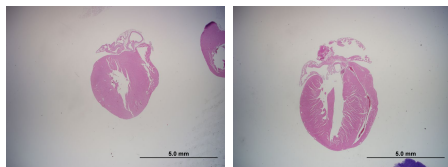
Bonemarrow, megakaryocyte hypoplasia, 40x, HE      Bonemarrow, wildtype control, normal, 40x, HE

**heart (MA:0000072)****Histopath Description:**

The heart is small compared to that of WT control; there is no evidence of morphological abnormalities in any of the structures examined.

**Morphological Diagnosis:****Distribution:** generalized; **Severity:** moderate;**Definitive Diagnosis:**

Cardiac hypoplasia



Heart, hypoplasia,  
1.25x, HE

Heart, wildtype  
control, normal,  
1.25x, 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, testis, epididymis, seminal vesicle, and prostate.

### AnimalID: M00660858 (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).

##### stomach (MA:0000353)

###### Histopath Description:

moderate neutrophilic gastritis

###### Morphological Diagnosis:

**Distribution:** multifocal to coalescing; **Severity:** moderate;

###### Definitive Diagnosis:

Gastritis, neutrophilic

##### bone marrow (MA:0000134)

###### Histopath Description:

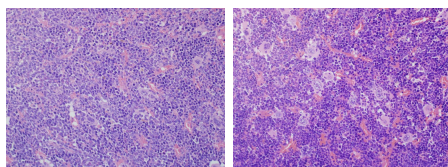
The number of megakaryocytes is reduced (compared to wild type).

###### Morphological Diagnosis:

**Severity:** mild;

###### Definitive Diagnosis:

Megakaryocyte hypoplasia



Bonemarrow,  
megakaryocyte  
hypoplasia, 40x, HE

Bonemarrow,  
wildtype control,  
normal, 40x, HE

**heart (MA:0000072)****Histopath Description:**

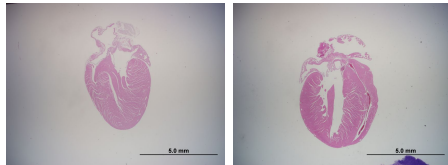
The heart is small compared to that of WT control; there is no evidence of morphological abnormalities in any of the structures examined.

**Morphological Diagnosis:**

**Distribution:** generalized; **Severity:** moderate;

**Definitive Diagnosis:**

Cardiac hypoplasia



Heart, hypoplasia,  
1.25x, HE

Heart, wildtype  
control, normal,  
1.25x, 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: M00217389 (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

**bone marrow (MA:0000134)****Histopath Description:**

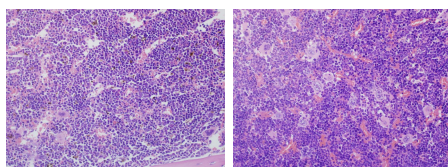
The number of megakaryocytes is reduced (compared to wild type).

**Morphological Diagnosis:**

**Severity:** mild;

**Definitive Diagnosis:**

Megakaryocyte hypoplasia



Bonemarrow,  
megakaryocyte  
hypoplasia, 40x, HE

Bonemarrow,  
wildtype control,  
normal, 40x, HE

**heart (MA:0000072)****Histopath Description:**

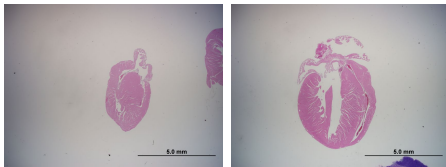
The heart is small compared to that of WT control; there is no evidence of morphological abnormalities in any of the structures examined.

**Morphological Diagnosis:**

**Distribution:** generalized; **Severity:** moderate;

**Definitive Diagnosis:**

Cardiac hypoplasia



Heart, hypoplasia,  
1.25x, HE

Heart, wildtype  
control, normal,  
1.25x, HE

### 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, uterus, oviduct, and ovary, and mammary gland.

### AnimalID: M00217384 (Male)

#### 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 more marked dilation of the lateral ventricles; there is rarefaction of the periventricular neuropil

#### 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).

### eye (MA:0000261)

#### Histopath Description:

There is extensive adhesion of the iris with the cornea (anterior synechia). The cornea is overall thin and is irregular in thickness; the corneal epithelium is reduced to a single cuboidal layer.

#### Morphological Diagnosis:

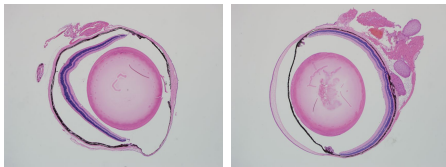
**Distribution:** unilateral; **Severity:** severe;

#### Definitive Diagnosis:

Corneal atrophy and anterior synechia

#### Histopathology Comments:

The lesion may explain the ocular abnormalities detected. Only one eye is present for examination



Eye, corneal atrophy and anterior synechia, 4x, HE

Eye, wildtype control, normal, 40x, HE

### bone marrow (MA:0000134)

#### Histopath Description:

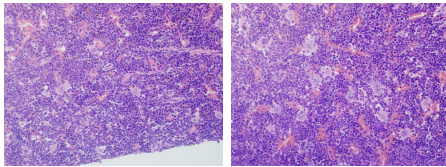
The number of megakaryocytes is reduced (compared to wild type).

#### Morphological Diagnosis:

**Severity:** mild;

#### Definitive Diagnosis:

Megakaryocyte hypoplasia



Bonemarrow, megakaryocyte hypoplasia, 40x, HE

Bonemarrow, wildtype control, normal, 40x, HE

### heart (MA:0000072)

#### Histopath Description:

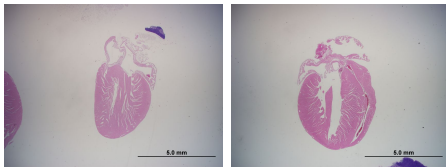
The heart is small compared to that of WT control; there is no evidence of morphological abnormalities in any of the structures examined.

#### Morphological Diagnosis:

**Distribution:** generalized; **Severity:** moderate;

#### Definitive Diagnosis:

Cardiac hypoplasia



Heart, hypoplasia, 1.25x, HE

Heart, wildtype control, normal, 1.25x, 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, testis, epididymis, seminal vesicle, and prostate.

#### Report Summary and Recommendation:

Various lesions that correlate with some of the observed phenotypes are noted in this line.

Corneal lesion may explain the ocular abnormalities. Testicular degeneration and atrophy is consistent with infertility. Megakaryocyte hypoplasia may explain reduced platelet count. Small heart size is consistent with decreased heart weight.

Line summary: Corneal atrophy and anterior synechia (1/4); Testicular degeneration and atrophy (2/2); Megakaryocyte hypoplasia (4/4); Cardiac hypoplasia (4/4)