



# CMHD Pathology Report



## CMHD Pathology Core

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ReportID: Report Date: November 23,  
2011  
Pathologist: H. Adissu

## Mouse Genetics Project

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Campus  
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CB10 1SA  
UK

CMHD LabID: N11-199

### AnimalID: M00375599 Ninl hom

#### Tissue Preservation and Staining:

There is separation of dermis and hypodermis. Tissues not present in submission: Calvarium, ears, tongue, Harderian gland, zymbal gland, nasal sinuses, teeth, gall bladder.

#### Histopathology Findings:

##### adrenal gland (MA:0000116)

##### Histopath Description:

Adrenal cortical cells immediately surrounding the medulla are vacuolated and contain fine granular golden brown cytoplasmic pigment. Rare mononuclear cells are present within this zone.

##### Morphological Diagnosis:

**Distribution:** Diffuse; **Severity:** no lesions; **MPATH Diagnosis:** degenerative change MPATH:14

##### Definitive Diagnosis:

Vacuolar degeneration of X-zone of the adenal gland with cytoplasmic ceroid accumulation (X-zone involution).

##### Histopathology Comments:

The X zone of the adrenal cortex disappears when males reach sexual maturity and females undergo their first pregnancy. The zone also disappears in virgin females, albeit graduall (Percy and Barthold, 2007).

##### liver (MA:0000358)

##### Histopath Description:

The overall hepatic lobular architecture is normal. Approximately 40% of hepatocytes within the midzonal region contain large (8-12 um in diameter) intracytoplasmic clear vacuoles (macrovesicular lipid). There are rare foci of neutrophilic clusters with rare nuclear fragments.

##### Morphological Diagnosis:

**Distribution:** Multifocal; **Severity:** moderate; **MPATH Diagnosis:** lipid deposition MPATH:42

##### Definitive Diagnosis:

Hepatic lipidosis.

##### Histopathology Comments:

Hepatocellular vacuolar change of variable degree suggestive of lipidosis is present in all mice from WTSI, consistent with high lipid diet.

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

##### Histopath Description:

The superficial lymph node is enlarged (greater than two-fold). There are multiple follicles with large germinal centers. The sinuses contain large numbers of mature lymphocytes.

##### Morphological Diagnosis:

**Duration:** Sub-acute; **Distribution:** Diffuse; **Severity:** moderate; **MPATH Diagnosis:** hyperplasia MPATH:134

##### Definitive Diagnosis:

Lymphoid hyperplasia.

**ear skin (MA:0001233)****Histopath Description:**

There is focally extensive epidermal hyperplasia. There are moderate numbers of neutrophils and lymphocytes within the corresponding underlying dermis.

**Morphological Diagnosis:**

**Duration:** Sub-acute; **Distribution:** Focal; **Severity:** mild; **MPATH Diagnosis:** inflammation MPATH:212

**Definitive Diagnosis:**

focal dermatitis with epidermal hyperplasia

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

There is only one eye available for analysis. The eye is small (nearly one-fourth normal size). The retina is mostly disorganized with blending of the nuclear zones. The inner nuclear zone is multifocally disorganized and extends as clusters into the ganglion layer. Degenerative changes consistent with cataract (Morgangnian globules, bladder cells) are present.

**Morphological Diagnosis:**

**Distribution:** Unilateral; **Severity:** severe; **MPATH Diagnosis:** hypoplasia MPATH:133

**Definitive Diagnosis:**

Microphthalmia with retinal dysplasia and cataract

**Histopathology Comments:**

Microphthalmia is frequently seen as incidental lesion in B6 strains.

**Organ/Tissue Analyzed:**

NSF will be appended

**AnimalID: M00375623 Ninl hom****Tissue Preservation and Staining:**

Tissues not present in submission: Calvarium, ears, tongue, Harderian gland, zymbal gland, nasal sinuses, teeth, gall bladder.

**Histopathology Findings:****adrenal gland (MA:0000116)****Histopath Description:**

Adrenal cortical cells immediately surrounding the medulla are vacuolated and contain fine granular golden brown cytoplasmic pigment. Rare mononuclear cells are present within this zone.

**Morphological Diagnosis:**

**Distribution:** Diffuse; **Severity:** no lesions; **MPATH Diagnosis:** degenerative change MPATH:14

**Definitive Diagnosis:**

Vacuolar degeneration of X-zone of the adenal gland with cytoplasmic ceroid accumulation (X-zone involution).

**Histopathology Comments:**

The X zone of the adrenal cortex disappears when males reach sexual maturity and females undergo their first pregnancy. The zone also disappears in virgin females, albeit graduall (Percy and Barthold, 2007).

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

The overall hepatic lobular architecture is normal. Approximately 40% of hepatocytes within the midzonal region contain large (8-12 um in diameter) intracytoplasmic clear vacuoles (macrovesicular lipid). There are rare foci of neutrophilic clusters with rare nuclear fragments.

**Morphological Diagnosis:**

**Distribution:** Multifocal; **Severity:** moderate; **MPATH Diagnosis:** lipid deposition MPATH:42

**Definitive Diagnosis:**

Hepatic lipidosis.

**Histopathology Comments:**

Hepatocellular vacuolar change of variable degree suggestive of lipidosis is present in all mice from WTSI, consistent with high lipid diet.

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

There is a mild enlargement of the lateral ventricle.

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

hydrocephalus, lateral ventricle

**Histopathology Comments:**

Variable degree of hydrocephalus is observed in a proportion of wild type C57 Black 6 mice.

**pancreas (MA:0000120)****Histopath Description:**

Focal interstitial aggregate mononuclear inflammatory cells.

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

Interstitial pancreatitis, lymphocytic and histiocytic.

**Histopathology Comments:**

Aggregates of mononuclear inflammatory cells are occasionally seen within the pancreatic interstitium. This lesion is considered incidental and clinically insignificant.

**salivary gland (MA:0000346)****Histopath Description:**

Within the mandibular salivary gland, the interstitium (mainly surrounding blood vessels) is multifocally expanded by aggregates of histiocytic cells and rare lymphocytic cells.

**Morphological Diagnosis:**

**Distribution:** Multifocal; **Severity:** mild; **MPATH Diagnosis:** inflammation MPATH:212

**Definitive Diagnosis:**

Interstitial histiocytic and lymphocytic sialadenitis

**Histopathology Comments:**

Interstitial mononuclear inflammatory infiltrates are commonly seen within the salivary gland as a response to non specific antigenic stimulation.

**Organ/Tissue Analyzed:**

NSF will be appended

**AnimalID: M00333029 Ninl hom****Tissue Preservation and Staining:**

The thyroid is not present in section Tissues not present in submission: Calvarium, ears, tongue, Harderian gland, zymbal gland, nasal sinuses, teeth, gall bladder.

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

The overall hepatic lobular architecture is normal. Approximately 5% of hepatocytes within the midzonal region contain large (8-12 um in diameter) intracytoplasmic clear vacuoles (macrovesicular lipid).

**Morphological Diagnosis:**

**Distribution:** Multifocal; **Severity:** no lesions; **MPATH Diagnosis:** lipid deposition MPATH:42

**Definitive Diagnosis:**

Hepatic lipidosiis.

**Histopathology Comments:**

Hepatocellular vacuolar change of variable degree suggestive of lipidosiis is present in all mice from WT5I, consistent with high lipid diet.

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

The mesenteric lymph node is enlarged. There are multiple follicles with large germinal centers. The sinuses contain large numbers of mature lymphocytes.

**Morphological Diagnosis:**

**Duration:** Sub-acute; **Distribution:** Diffuse; **Severity:** mild; **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.

**brain (MA:0000168)**

**Histopath Description:**

There is a mild enlargement of the lateral ventricle.

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

hydrocephalus, lateral ventricle

**Histopathology Comments:**

Variable degree of hydrocephalus is observed in a proportion of wild type C57 Black 6 mice.

**kidney (MA:0000368)**

**Histopath Description:**

In two foci, single glomeruli in the deep cortex have disorganized mesangium; the Bowman's membrane at the urinary pole is hyperplastic. Few sloughed parietal cells are present within the urinary space. Rare tubules in the vicinity have hyperchromatic and hyperplastic epithelium.

**Morphological Diagnosis:**

**Distribution:** Focal; **Severity:** mild; **MPATH Diagnosis:** glomerulonephritis MPATH:197

**Definitive Diagnosis:**

Focal glomerulopathy with tubular epithelial hypertrophy.

**bone marrow (MA:0000134)**

**Histopath Description:**

There is an increase in granulocytic myeloid cell population (myeloid erythroid ratio of estimated 6:1 to 8:1)

**Morphological Diagnosis:**

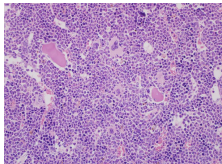
**Severity:** mild; **MPATH Diagnosis:** hyperplasia MPATH:134

**Definitive Diagnosis:**

Granulocytic myeloid proliferation (erythroid hypoplasia)

**Histopathology Comments:**

Increased myeloid: erythroid ration could be from actual myeloid hyperplasia or relative due to erythroid hypoplasia. Peripheral blood count helps confirm either. Myeloid hyperplasia is usually secondary to bacterial infection. Note that there is also a mild lymphoid hyperplasia in mesenteric lymph nodes in this mouse.



Bone marrow,  
myeloid  
hyperplasia, 40x,  
HE.

**Organ/Tissue Analyzed:**

NSF will be appended

**AnimalID: M00333030 Ninl hom**

**Tissue Preservation and Staining:**

Tissues not present in submission: Calvarium, ears, tongue, Harderian gland, zymbal gland, nasal sinuses, teeth, gall bladder.

**Histopathology Findings:**

**liver (MA:0000358)**

**Histopath Description:**

The overall hepatic lobular architecture is normal. Approximately 5% of hepatocytes within the midzonal region contain large (8-12 um in diameter) intracytoplasmic clear vacuoles (macrovesicular lipid).

**Morphological Diagnosis:**

**Distribution:** Multifocal; **Severity:** no lesions; **MPATH Diagnosis:** lipid deposition MPATH:42

**Definitive Diagnosis:**

Hepatic lipidosiis.

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The mesenteric lymph node is enlarged. There are multiple follicles with large germinal centers. The sinuses contain large numbers of mature lymphocytes.

**Morphological Diagnosis:**

**Duration:** Sub-acute; **Distribution:** Diffuse; **Severity:** mild; **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.

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

There is a mild enlargement of the lateral ventricle.

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

hydrocephalus, lateral ventricle

**Histopathology Comments:**

Variable degree of hydrocephalus is observed in a proportion of wild type C57 Black 6 mice.

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

There is an increase in granulocytic myeloid cell population (myeloid erythroid ratio of estimated 6:1 to 8:1)

**Morphological Diagnosis:**

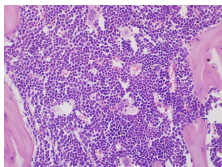
**Severity:** mild; **MPATH Diagnosis:** hyperplasia MPATH:134

**Definitive Diagnosis:**

Granulocytic myeloid hypoplasia (erythroid hypoplasia)

**Histopathology Comments:**

Increased myeloid: erythroid ration could be from actual myeloid hyperplasia or relative due to erythroid hypoplasia. Peripheral blood count helps confirm either. Myeloid hyperplasia is usually secondary to bacterial infection. Note that there is also a mild lymphoid hyperplasia in mesenteric lymph nodes in this mouse.



Bone marrow,  
myeloid  
hyperplasia, 40x,  
HE.

**Organ/Tissue Analyzed:**

NSF will be appended

**Summary:**

There is a moderate increase in marrow myeloid population in the two male mice in this line (M00333029 and M00333030). Bone marrow will be reviewed; updated result will be appended. Other lesions are incidental or attributable to strain background (eg. Microphthalmia)

**Report Summary and Recommendation:**

There is a moderate marrow myeloid hyperplasia in the two male mice in this line (M00333029 and M00333030). The presence of increased myeloid granulocytic cells in the bone marrow without increased counts in peripheral blood may be designated as myeloproliferation (genetic) (Kogan et al., 2002, Blood, 100:238-45). Other lesions are incidental or attributable to strain background (eg. Microphthalmia).

Bone marrow - Myeloid hyperplasia - hyperplasia MPATH:134