



# CMHD Pathology Report



## CMHD Pathology Core

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ReportID: Report Date: June 05, 2013  
Pathologist: Dr. H. Adissu

## Mouse Genetics Project

Wellcome Trust Sanger  
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Hinxton, Cambridge  
CB10 1SA  
UK

CMHD LabID: N13-251

## Relevant History:

Phenotype

Urolithiasis

**AnimalID: M00433447 (Male)**

## Histopathology Findings:

### liver (MA:0000358)

#### Histopath Description:

severe 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).

### lymph node (MA:0000139)

#### Histopath Description:

Lymphoma

#### Morphological Diagnosis:

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

#### Definitive Diagnosis:

Lymphoma

### 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).

**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

**AnimalID: M00433448 (Male)**

**Histopathology Findings:**

**kidney (MA:0000368)**

**Histopath Description:**

Nearly half of the renal parenchyma is replaced by a large cyst; the renal parenchyma surrounding the cyst is mildly compressed. There is prominent tubular hyperplasia and interstitial inflammation. The urinary bladder mucosa is hyperplastic and the submucosa contains large numbers of inflammatory cells.

**Morphological Diagnosis:**

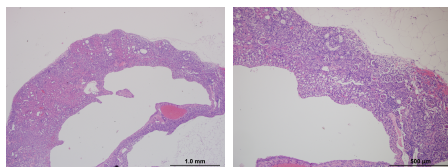
**Duration:** Chronic; **Distribution:** Unilateral; **Severity:** severe; **MPATH Diagnosis:** hydronephrosis MPATH:635

**Definitive Diagnosis:**

Hydronephrosis with mild parenchymal atrophy.

**Histopathology Comments:**

Hydronephrosis is usually caused by an ascending obstructive urinary lesion; this is not evident in the examined sections.



Kidney,  
hydronephrosis, 4x,  
HE

Kidney,  
hydronephrosis,  
10x, HE

**liver (MA:0000358)**

**Histopath Description:**

minimal lipidosis

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

minimal lipidosis

**pancreatic islet (MA:0000127)**

**Histopath Description:**

There is moderate enlargement of the pancreatic islets.

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

Pancreatic islet hypertrophy

**lymph node (MA:0000139)**

**Histopath Description:**

The mesenteric lymph node is enlarged (greater than three-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.

**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.

**AnimalID: M00464696 (Female)**

**Histopathology Findings:**

**kidney (MA:0000368)**

**Histopath Description:**

Nearly half of the renal parenchyma is replaced by a large cyst; the renal parenchyma surrounding the cyst is mildly compressed. There is prominent tubular hyperplasia and interstitial inflammation. The urinary bladder mucosa is hyperplastic and the submucosa contains large numbers of inflammatory cells. There are rare renal tubular mineralization in the cortex.

**Morphological Diagnosis:**

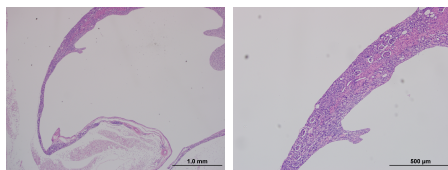
**Duration:** Chronic; **Distribution:** Unilateral; **Severity:** severe; **MPATH Diagnosis:** hydronephrosis MPATH:635

**Definitive Diagnosis:**

Hydronephrosis with mild parenchymal atrophy; Tubular mineralization (minimal) (contralateral kidney)

**Histopathology Comments:**

Hydronephrosis is usually caused by an ascending obstructive urinary lesion; this is not evident in the examined sections.



Kidney, hydronephrosis, 4x, HE  
Kidney, hydronephrosis, 10x, HE

**liver (MA:0000358)**

**Histopath Description:**

minimal lipidosis

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

minimal lipidos

**lymph node (MA:0000139)**

**Histopath Description:**

The mesenteric lymph node is enlarged (greater than three-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.

**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.

**AnimalID: M00464695 (Female)****Histopathology Findings:****kidney (MA:0000368)****Histopath Description:**

Nearly half of the renal parenchyma is replaced by a large cyst; the renal parenchyma surrounding the cyst is mildly compressed. There is prominent tubular hyperplasia and interstitial inflammation. The urinary bladder mucosa is hyperplastic and the submucosa contains large numbers of inflammatory cells. There are small multifocal mineralization within the renal papilla and pelvis in the contralateral (normal) kidney

**Morphological Diagnosis:**

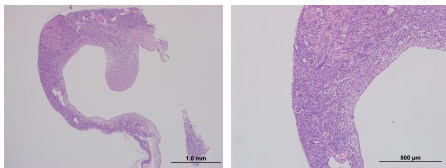
**Duration:** Chronic; **Distribution:** Unilateral; **Severity:** severe; **MPATH Diagnosis:** hydronephrosis MPATH:635

**Definitive Diagnosis:**

Hydronephrosis with mild parenchymal atrophy; Papillary and renal pelvis mineralization (contralateral kidney).

**Histopathology Comments:**

Hydronephrosis is usually caused by an ascending obstructive urinary lesion; this is not evident in the examined sections.



Kidney,  
hydronephrosis, 4x,  
HE

Kidney,  
hydronephrosis,  
10x, HE

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

minimal lipidosis

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

minimal lipidosis

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

marked erythroid hyperplasia

**Morphological Diagnosis:**

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

**Definitive Diagnosis:**

Splenic erythroid hyperplasia

**Report Summary and Recommendation:**

There is minimal hepatic lipidosis in three mice. Unilateral hydronephrosis was observed in three mice. This can not be confirmed in the other mouse as there was only one kidney available for examination. The lesions may be caused by obstructive condition in the ureter or distal urinary tract (consistent with urolithiasis observed on clinical phenotyping). We did not see evidence of urolithiasis. Calculi could be washed out during tissue processing. Cldn16 mutation has been associated with familial hypomagnesemia with hypercalciuria and nephrocalcinosis and renal impairment. Note that renal tubular mineralization was noted in the contralateral kidney of two of the three mice with hydronephrosis