



# CMHD Pathology Report



## CMHD Pathology Core

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ReportID: Report Date: October 24, 2013  
Pathologist: Dr. H. Adissu

## Mouse Genetics Project

Wellcome Trust Sanger  
Institute  
Wellcome Trust Genome  
Campus  
Hinxton, Cambridge  
CB10 1SA  
UK

CMHD LabID: N13-705

## Relevant History:

Phenotypes:

decreased grip strength  
abnormal tail morphology  
kinked tail  
decreased body length  
decreased body weight  
decreased lean body mass  
decreased bone mineral content  
abnormal digit morphology  
abnormal femur morphology  
abnormal joint morphology  
abnormal tibia morphology  
bowed tibia  
decreased body weight  
decreased leukocyte cell number  
increased blood urea nitrogen level  
increased energy expenditure  
increased oxygen consumption  
increased carbon dioxide production

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## AnimalID: M00516946 (Male)

### Histopathology Findings:

#### liver (MA:0000358)

##### Histopath Description:

very minimal lipidosis

##### Morphological Diagnosis:

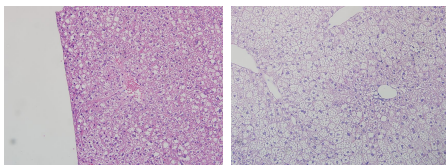
**Distribution:** multifocal; **Severity:** mild; **MPATH Process Term:** lipid deposition MPATH:42

##### Definitive Diagnosis:

Minimal hepatic lipidosis

##### Histopathology Comments:

Hepatic lipidosis is minimal in this mouse despite high fat diet



Liver, Minimal  
lipidosis, 20x, HE

Liver, WT, severe  
lipidosis, 20x, HE

## brain (MA:0000168)

##### Histopath Description:

There is a mild dorsolateral flattening of the brain

##### Morphological Diagnosis:

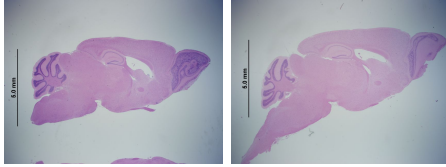
**Distribution:** diffuse; **Severity:** mild; **MPATH Process Term:** developmental and structural abnormality MPATH:55

**Definitive Diagnosis:**

Brain, dorsolateral flattening

**Histopathology Comments:**

The lesion suggests abnormal morphology of the cranium



Brain, dorsoventral flattening (compression), 1.25x, HE

Brain, WT, 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: M00516954 (Male)**

**Histopathology Findings:**

**liver (MA:0000358)**

**Histopath Description:**

Hepatic lipidosis is minimal to absent

**Morphological Diagnosis:**

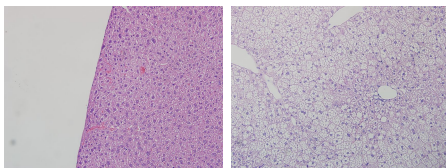
**Severity:** no lesions;

**Definitive Diagnosis:**

Absent hepatic lipidosis

**Histopathology Comments:**

Hepatic lipidosis is minimal in this mouse despite high fat diet



Liver, absent lipidosis, 20x, HE

Liver, WT, severe lipidosis, 20x, HE

**brain (MA:0000168)**

**Histopath Description:**

There is a mild dorsolateral flattening of the brain

**Morphological Diagnosis:**

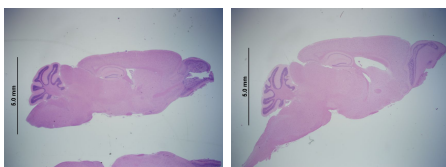
**Distribution:** diffuse; **Severity:** mild; **MPATH Process Term:** developmental and structural abnormality MPATH:55

**Definitive Diagnosis:**

Brain, dorsolateral flattening

**Histopathology Comments:**

The lesion suggests abnormal morphology of the cranium



Brain, dorsoventral flattening (compression), 1.25x, HE

Brain, WT, 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: M00516955 M00516955 (Female)**

**Tissue Preservation and Staining:**

There is marked tissue processing artifact in both eyes; so the eyes are not analyzed

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

Hepatic lipidosis is minimal to absent

**Morphological Diagnosis:**

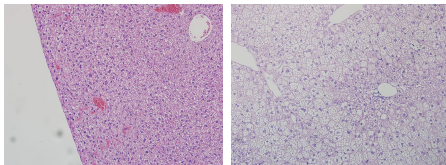
**Severity:** no lesions;

**Definitive Diagnosis:**

Absent hepatic lipidosis

**Histopathology Comments:**

Hepatic lipidosis is minimal in this mouse despite high fat diet



Liver, absent lipidosis, 20x, HE

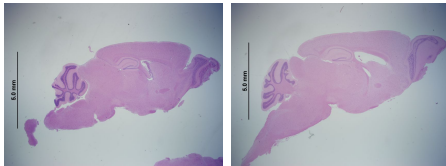
Liver, WT, severe lipidosis, 20x, HE

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

Normal

**Morphological Diagnosis:**

**Severity:** no lesions;



Brain, normal, 1.25x, HE

Brain, WT, 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: M00516953 M00516955 (Female)**

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

Hepatic lipidosis is minimal to absent

**Morphological Diagnosis:**

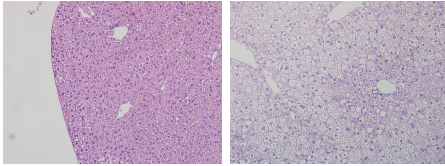
**Severity:** no lesions;

**Definitive Diagnosis:**

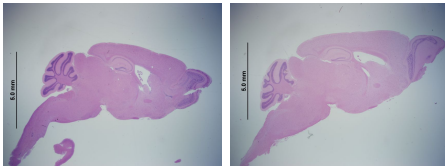
Absent hepatic lipidosis

**Histopathology Comments:**

Hepatic lipidosis is minimal in this mouse despite high fat diet

Liver, absent  
lipidosis, 20x, HELiver, WT, severe  
lipidosis, 20x, HE**brain (MA:0000168)****Histopath Description:**

Normal

**Morphological Diagnosis:****Severity:** no lesions;Brain, normal,  
1.25x, HEBrain, 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.

**Report Summary and Recommendation:**

Hepatic lipidosis is absent or minimal is consistent with decreased body weight in this line. There is mild dorsoventral flattening in two mice (both males). The lesion suggests malformation of the cranial skeleton. We could not confirm skeletal abnormalities by histopathology analysis. There are no abnormalities in peripheral or central nervous tissues to explain decreased grip strength. This phenotype might have been confounded by abnormal digit morphology.

Line summary:

Liver: Minimal or absence of hepatic lipidosis (4/4)

Brain: Dorsoventral compression/flattening (2/4)