



CMHD Pathology Report



CMHD Pathology Core

Toronto Centre for
Phenogenomics
25 Orde St. 3rd fl.
Toronto, Ont. M5T 3H7
Tel.(416) 586-8375
Fax (416) 586-5993

contact: Dr. Susan
Newbigging
email:
newbigging@lunenfeld.ca

Principle Investigator: Dr. Jacqui White

Institute: Wellcome Trust Sanger Institute
Address: Attn: Linda Read Wellcome Trust
Genome Campus Hinxton Cambridge CB10
1SA, UK

ReportID: Report Date: September 06,
2013
Pathologist: Dr. H. Adissu

Mouse Genetics Project

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

email:
MGPenquiries@sanger.ac.uk
[Mouse Portal](#)
[Europhenome](#)

CMHD LabID: N13-564

Relevant History:

Phenotypes:

hyperalbuminemia
increased circulating total protein level
increased circulating LDL cholesterol level
increased circulating cholesterol level

AnimalID: M00947198 (Male)

Histopathology Findings:

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.

liver (MA:0000358)

Histopath Description:

Most hepatocytes contain a large well-defined single rounded vacuole (macrovesicular lipidosis).

Morphological Diagnosis:

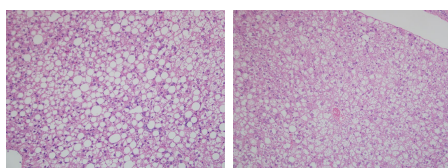
Distribution: diffuse; **Severity:** extreme; **MPATH Diagnosis:** steatosis MPATH:622

Definitive Diagnosis:

hepatic steatosis

Histopathology Comments:

Marked macrovesicular lipidosis is seen in the liver in this line; this feature may have significance in relation to the metabolic phenotypes observed



Liver,
macrovesicular
lipidosis, 20x. HE

Liver, WT,
microvesicular
lipidosis, 20x. HE

stomach (MA:0000353)**Histopath Description:**

mild neutrophilic gastritis; there is also mild epithelial proteinosis

Morphological Diagnosis:

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

Definitive Diagnosis:

Mild neutrophilic gastritis with epithelial proteinosis

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

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: M00933215 (Male)**Histopathology Findings:****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 maginal center lymphoma is suspected.

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

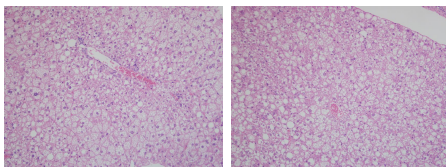
Most hepatocytes contain numerous small lipid vacuoles (microvesicular lipidosis)

Morphological Diagnosis:

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

Definitive Diagnosis:

hepatic steatosis



Liver,
microvesicular
lipidosis, 20x. HE

Liver, WT,
microvesicular
lipidosis, 20x. 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: M00933219 (Female)

Histopathology Findings:

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.

liver (MA:0000358)

Histopath Description:

Most hepatocytes contain a large well-defined single rounded vacuole (macrovesicular lipidosis).

Morphological Diagnosis:

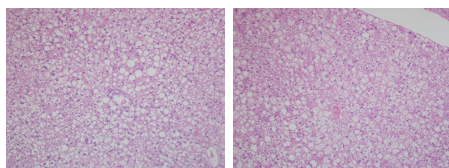
Distribution: diffuse; **Severity:** extreme; **MPATH Diagnosis:** steatosis MPATH:622

Definitive Diagnosis:

hepatic steatosis

Histopathology Comments:

Marked macrovesicular lipidosis is seen in the liver in this line; this feature may have significance in relation to the metabolic phenotypes observed



Liver,
macrovesicular
lipidosis, 20x. HE

Liver, WT,
microvesicular
lipidosis, 20x. HE

thymus (MA:0000142)

Histopath Description:

There are two 50 um diameter epithelial cysts.

Morphological Diagnosis:

Distribution: multifocal; **MPATH Diagnosis:** cyst MPATH:62

Definitive Diagnosis:

Epithelial cyst

Histopathology Comments:

This is a developmental abnormality commonly seen in mice.

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

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: M00933217 (Female)

Histopathology Findings:

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.

liver (MA:0000358)

Histopath Description:

Most hepatocytes contain a large well-defined single rounded vacuole (macrovesicular lipidosis).

Morphological Diagnosis:

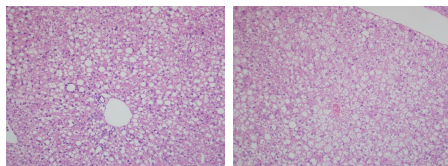
Distribution: diffuse; **Severity:** extreme; **MPATH Diagnosis:** steatosis MPATH:622

Definitive Diagnosis:

hepatic steatosis

Histopathology Comments:

Marked macrovesicular lipidosis is seen in the liver in this line; this feature may have significance in relation to the metabolic phenotypes observed



Liver,
macrovesicular
lipidosis, 20x. HE

Liver, WT,
microvesicular
lipidosis, 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).

thymus (MA:0000142)

Histopath Description:

There are two 50 um diameter epithelial cysts.

Morphological Diagnosis:

Distribution: multifocal; **MPATH Diagnosis:** cyst MPATH:62

Definitive Diagnosis:

Epithelial cyst

Histopathology Comments:

This is a developmental abnormality commonly seen in mice.

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:

All mice have marked and diffuse hepatic lipidosis consistent with high fat diet. However, the presence of predominantly macrovesicular lipidosis may be significant in light of abnormal lipid profile in this line (increased circulating LDL cholesterol level and increased circulating cholesterol level). Both macrovesicular and microvesicular hepatic steatosis are observed in nutritional disturbances as is the case in high fat diet. Macrovesicular lipidosis is considered to be the result of coalescing of small (micro) lipid vesicles; hence may reflect severity.