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: July 12, 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: N13-475

Relevant History:
Phenotype:

partial lethality

AnimalID: M00562180 (Male)

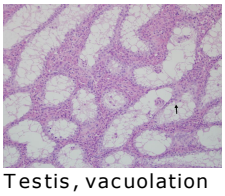
Histopathology Findings:

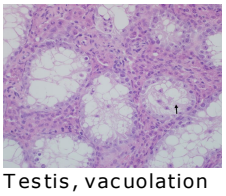
testis (MA:0000411)

Histopath Description:
There is extensive atrophy and vacuolation of the seminiferous tubule affecting the entire testicular parenchyma. There is no evidence of spermatids and sperm cells. The interstitial tissue is prominent with marked hyperplasia of the leydig cells.

Morphological Diagnosis:
Distribution: diffuse; **Severity:** extreme;

Definitive Diagnosis:
Testicular vacuolation and hypoplasia; Ledig cell hyperplasia


Testis, vacuolation and atrophy, Leydig cell hyperplasia, 20x, HE

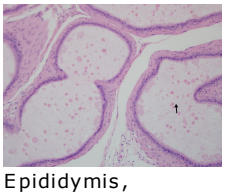

Testis, vacuolation and atrophy, Leydig cell hyperplasia, 40x, HE

epididymal duct (MA:0001735)

Histopath Description:
The epididymis is devoid of spermatocytes and contains cellular debris and proteinaceous fluid.

Morphological Diagnosis:
Severity: extreme;

Definitive Diagnosis:
Epididymal aspermia


Epididymis, aspermia, 40x, HE

thymus (MA:0000142)

Histopath Description:
There is a 50 um diamater epithelial cyst.

Morphological Diagnosis:
Distribution: focal; **MPATH Diagnosis:** cyst MPATH:62

Definitive Diagnosis:
Epithelial cyst

Histopathology Comments:
This is a developmental abnormality commonly seen in mice.

liver (MA:0000358)

Histopath Description:
diffuse lipidosis

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

Definitive Diagnosis:
Hepatic lipidosis

lymph node (MA:0000139)

Histopath Description:
The mesenteric lymph node is markedly enlarged (greater than five-fold). The medulla is expanded by chords and sheets of plasmatoid cells.

Morphological Diagnosis:
Distribution: Diffuse; **Severity:** moderate; **MPATH Diagnosis:** hyperplasia MPATH:134

Definitive Diagnosis:
Lymphoid hyperplasia with medullary plasmacytosis.

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.

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: M00562178 (Male)

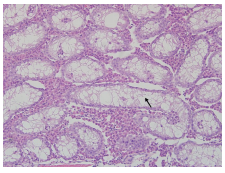
Histopathology Findings:

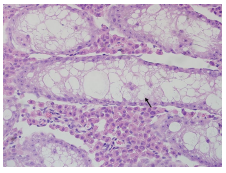
testis (MA:0000411)

Histopath Description:
There is extensive atrophy and vacuolation of the seminiferous tubule affecting the entire testicular parenchyma. There is no evidence of spermatids and sperm cells. The interstitial tissue is prominent with marked hyperplasia of the leydig cells.

Morphological Diagnosis:
Distribution: diffuse; **Severity:** extreme;

Definitive Diagnosis:
Testicular vacuolation and hypoplasia; Ledig cell hyperplasia


Testis, vacuolation and atrophy, Leydig cell hyperplasia, 20x, HE

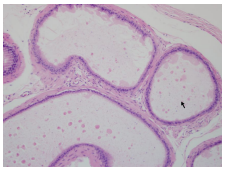

Testis, vacuolation and atrophy, Leydig cell hyperplasia, 40x, HE

epididymal duct (MA:0001735)

Histopath Description:
The epididymis is devoid of spermatocytes and contains cellular debris and proteinaceous fluid.

Morphological Diagnosis:
Severity: extreme;

Definitive Diagnosis:
Epididymal aspermia



Epididymis, aspermia, 40x, HE

thymus (MA:0000142)

Histopath Description:
There is a 50 um diamater epithelial cyst.

Morphological Diagnosis:
Distribution: focal; **MPATH Diagnosis:** cyst MPATH:62

Definitive Diagnosis:
Epithelial cyst

Histopathology Comments:
This is a developmental abnormality commonly seen in mice.

liver (MA:0000358)

Histopath Description:
diffuse lipidosis

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

Definitive Diagnosis:
Hepatic lipidosis

lymph node (MA:0000139)

Histopath Description:
The mesenteric lymph node is markedly enlarged (greater than five-fold). The medulla is expanded by chords and sheets of plasmatoid cells.

Morphological Diagnosis:
Distribution: Diffuse; **Severity:** moderate; **MPATH Diagnosis:** hyperplasia MPATH:134

Definitive Diagnosis:
Lymphoid hyperplasia with medullary plasmacytosis.

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 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).

retina (MA:0000276)

Histopath Description:
Involving one eye, there are clusters of external nuclear structures within the internal plexiform layer.

Morphological Diagnosis:
Distribution: Focal; **Severity:** mild;

Definitive Diagnosis:

Retinal dysplasia

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: M00584636 (Male)

Histopathology Findings:

thymus (MA:0000142)

Histopath Description:
There is a 50 um diamater epithelial cyst.

Morphological Diagnosis:
Distribution: focal; **MPATH Diagnosis:** cyst MPATH:62

Definitive Diagnosis:
Epithelial cyst

Histopathology Comments:
This is a developmental abnormality commonly seen in mice.

liver (MA:0000358)

Histopath Description:
diffuse lipidosis

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

Definitive Diagnosis:
Hepatic lipidosis

eye (MA:0000261)

Histopath Description:
A 100-um long stretch of fibrous connective tissue extends from the area of the optic disc towards the posterior capsule of the lens.

Morphological Diagnosis:
MPATH Diagnosis: developmental and structural abnormality MPATH:55

Definitive Diagnosis:
Persistent hyaloid artery

Histopathology Comments:
hyaloid artery remnant is a rare condition in which there remain some parts of the hyaloid artery. The posterior hyaloid vascular system of mice usually undergoes involution in the first month of life (Richard et al., 2000).

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: M00572305 (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

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:
Main finding in this line is diffuse testicular atrophy/degeneration with marked expansion of the interstitial tissues (Leydig cells) and absence of spermatocytes in the epididymis. This lesion is suggestive of testicular hypoplasia and should cause infertility (which is not reported in this line). There are no findings predictive of lethality in this line; histopathology analysis of earlier age or embryos is recommended.

Line summary: Testicular atrophy/degeneration; interstitial cell (leydig cell) hyperplasia; Epididymal aspermia (2/2)