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

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

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

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

CMHD LabID: N11-86

Relevant History:

(Body Weight Curves; Dysmorphology; Auditory Brainstem Response; Body Composition (DEXA); X-ray Imaging; Plasma Chemistry; Tail Epidermis Wholemount; Skin Histopathology; Salmonella Challenge; Citrobacter Challenge) Decreased body fat, decreased body weight, abnormal ABR, decreased ALT/ALP/AST, increased susceptibility to bacterial infection, scaly skin, abnormal skin morphology, abnormal shedding

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AnimalID: M00290002 Lrig1 -/-

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:

There is a round, 200 um in diameter, encapsulated adrenocortical structure attached to the adrenal capsule.

Morphological Diagnosis:

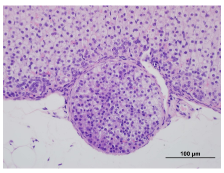
Distribution: Unilateral; **Severity:** mild; **MPATH Diagnosis:** choristoma MPATH:477

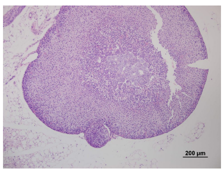
Definitive Diagnosis:

Accessory adrenocortical tissue.

Histopathology Comments:

Accessory adrenocortical tissue is seen as incidental finding of variable frequency in some strains of mice (Nyska and Maronpot, 1999).


Adrenal gland, accessory adrenocortical tissue, 40x, HE.


Adrenal gland, accessory adrenocortical tissue, 10x, HE.

stomach (MA:0000353)

Histopath Description:

There are low numbers of neutrophils within the deep lamina propria

Morphological Diagnosis:

Duration: Sub-acute; **Distribution:** Multifocal; **Severity:** moderate; **MPATH Diagnosis:** inflammation MPATH:212

Definitive Diagnosis:

Gastritis, suppurative

Histopathology Comments:

This lesion is most commonly associated with Helicobacter infection. Further investigation is suggested using histochemistry (Silver stain) or colony fecal PCR.

liver (MA:0000358)

Histopath Description:
The overall hepatic lobular architecture is normal. Low numbers of hepatocytes in periportal areas contain macrovesicular lipid.

Morphological Diagnosis:
Distribution: Multifocal; **Severity:** mild; **MPATH Diagnosis:** lipid deposition MPATH:42

Definitive Diagnosis:
Hepatic lipidosis

Histopathology Comments:
The hepatic lipidosis is very mild.

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.

Organ/Tissue Analyzed:
There were no significant findings in the following tissues: Eyes, salivary glands, trachea, lungs, heart, thymus, thyroid gland, parathyroid gland, spleen, exocrine and endocrine pancreas, esophagus, intestines, urinary organs and tract, reproductive organs, lymph nodes, spinal cord, bones, bone marrow, skeletal muscles, brown fat, and skin.

AnimalID: M00354887 Lrig1 -/-

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

Histopathology Findings:

stomach (MA:0000353)

Histopath Description:
There are large numbers of neutrophils within the deep lamina propria

Morphological Diagnosis:
Duration: Sub-acute; **Distribution:** Multifocal; **Severity:** moderate; **MPATH Diagnosis:** inflammation MPATH:212

Definitive Diagnosis:
Gastritis, suppurative

Histopathology Comments:
This lesion is most commonly associated with Helicobacter infection. Further investigation is suggested using histochemistry (Silver stain) or colony fecal PCR.

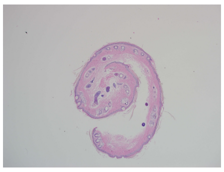
skin (MA:0000151)

Histopath Description:
The skin section is coiled. The epidermis is diffusely hyperplasia (2-3 times thicker than normal) and orthokeratotic hyperkeratosis. The epidermal hyperplasia also involves the hair follicles. The adnexal structures (sebaceous glands and hair follicles) are hyperplastic, but their numbers is reduced compared to normal. The dermis contains dense hypereosinophilic collagen (dermal fibrosis).

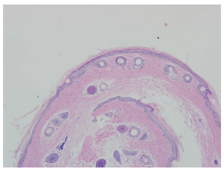
Morphological Diagnosis:
Duration: Chronic; **Distribution:** Diffuse; **Severity:** mild; **MPATH Diagnosis:** acanthosis MPATH:150

Definitive Diagnosis:
Epidermal hyperplasia with dermal fibrosis, adnexal hypertrophy and orthokeratotic hyperkeratosis.

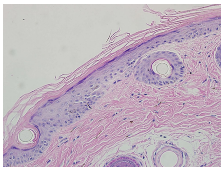
Histopathology Comments:
This is unusual diffuse epidermal hyperplasia and hyperkeratosis. See summary section.



Skin, Epidermal hyperplasia with dermal fibrosis and anexal hypertrophy, 4x, HE



Skin Epidermal hyperplasia with dermal fibrosis and anexal hypertrophy, 10x, HE.



Skin Epidermal hyperplasia with dermal fibrosis and anexal hypertrophy, 40x, HE.

liver (MA:0000358)

Histopath Description:
The overall hepatic lobular architecture is normal. Low numbers of hepatocytes in periportal areas contain macrovesicular lipid.

Morphological Diagnosis:
Distribution: Multifocal; **Severity:** mild; **MPATH Diagnosis:** lipid deposition MPATH:42

Definitive Diagnosis:
Hepatic lipidosis

Histopathology Comments:
The hepatic lipidosis is very mild.

salivary gland (MA:0000346)

Histopath Description:
Within the mandibular salivary gland, the interstitium is focally expanded by aggregates of lymphocytes, histiocytes, and low numbers of plasma cells.

Morphological Diagnosis:
Distribution: Focal; **Severity:** mild; **MPATH Diagnosis:** inflammation MPATH:212

Definitive Diagnosis:
Interstitial histiocytic and lymphocytic sialadenitis

Histopathology Comments:
This is a common and insignificant incidental finding in mice.

Organ/Tissue Analyzed:
There were no significant findings in the following tissues: Brain, eyes, trachea, lungs, heart, thymus, thyroid gland, parathyroid gland, spleen, exocrine and endocrine pancreas, esophagus, intestines, urinary organs and tract, adrenal gland, reproductive organs, lymph nodes, spinal cord, bones, bone marrow, skeletal muscles, brown fat.

AnimalID: M00354888 Lrig1 -/-

Tissue Preservation and Staining:
Tissues not present in submission: Calvarium, ears, tongue, Harderian gland, zymbal gland, nasal sinuses, teeth, gall bladder. There is marked artifactual tissue sepration and tear in the skin.

Histopathology Findings:

liver (MA:0000358)

Histopath Description:
The overall hepatic lobular architecture is normal. Low numbers of hepatocytes in periportal areas contain macrovesicular lipid.

Morphological Diagnosis:
Distribution: Multifocal; **Severity:** mild; **MPATH Diagnosis:** lipid deposition MPATH:42

Definitive Diagnosis:
Hepatic lipidosis

Histopathology Comments:
The hepatic lipidosis is very mild.

stomach (MA:0000353)

Histopath Description:
The submucosa is markedly expanded by edema in which are present numerous neutrophils, lymphocytes, and plasma cells. Moderate numbers of neutrophils are also present within the deep lamina propria. There is marked mucous gland hyperplasia.

Morphological Diagnosis:
Duration: Sub-acute; **Distribution:** Multifocal; **Severity:** moderate; **MPATH Diagnosis:**

inflammation MPATH:212

Definitive Diagnosis:
Gastritis, neutrophilic and and plasmacytic with submucosal edema and gastric gland hyperplasia.

Histopathology Comments:
This lesion is most commonly associated with Helicobacter infection. Further investigation is suggested using histochemistry (Silver stain) or colony fecal PCR.

Organ/Tissue Analyzed:
There were no significant findings in the following tissues: Brain, eyes, salivary glands, trachea, lungs, heart, thymus, thyroid gland, parathyroid gland, spleen, exocrine and endocrine pancreas, esophagus, intestines, urinary organs and tract, adrenal gland, reproductive organs, lymph nodes, spinal cord, bones, bone marrow, skeletal muscles, brown fat, and skin.

AnimalID: M00180642 Lrig1 -/-

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

Histopathology Findings:

lung (MA:0000415)

Histopath Description:
There is a focal perivascular mononuclear inflammatory cell aggregate within the lung

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

Definitive Diagnosis:
Perivascular inflammatory aggregates

Histopathology Comments:
This lesion is suggestive of antigenic stimulation of hematogenous origin. It is a common and insignificant incidental finding.

stomach (MA:0000353)

Histopath Description:
There are low numbers of neutrophils within the deep lamina propria

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

Definitive Diagnosis:
Gastritis, suppurative

Histopathology Comments:
This lesion is most commonly associated with Helicobacter infection. Further investigation is suggested using histochemistry (Silver stain) or colony fecal PCR.

liver (MA:0000358)

Histopath Description:
The overall hepatic lobular architecture is normal. Low numbers of hepatocytes in periportal areas contain macrovesicular lipid.

Morphological Diagnosis:
Distribution: Multifocal; **Severity:** mild; **MPATH Diagnosis:** lipid deposition MPATH:42

Definitive Diagnosis:
Hepatic lipidosis

Histopathology Comments:
The hepatic lipidosis is very mild.

Organ/Tissue Analyzed:
There were no significant findings in the following tissues: Brain, eyes, salivary glands, trachea, heart, thymus, thyroid gland, parathyroid gland, spleen, exocrine and endocrine pancreas, esophagus, intestines, urinary organs and tract, adrenal gland, reproductive organs, lymph nodes, spinal cord, bones, bone marrow, skeletal muscles, brown fat, and skin.

Summary:

Various incidental lesions were found. These lesions were also variably documented in the wild type control mice. The dermal lesion seen in one of the male mice is atypical. The lesion is diffuse, hence ruling out post-inflammatory response (which is usually focal). Note that there is a non-specified skin abnormality documented in this line, notably in males. The lesion is not observed in the females and the other male mouse (tissue is not well preserved in this latter male mouse). We did not see abnormality in the vertebral cross-sections to explain the vertebral fusion observed during in-life phenotyping (sagital section of contiguous vertebrae may be more helpful to detect vertebral fusion defects).

Report Summary and Recommendation:

Various incidental lesions were found. These lesions were also variably documented in the wild type control mice. The skin lesion seen in one of the male mice is unusual. The lesion is diffuse, hence ruling out post-inflammatory response (which is usually focal). Note that there is a non-specified skin abnormality documented in this line, notably in males. The lesion is not observed in the females and the other male mouse (tissue is not well preserved in this latter male mouse). We did not see abnormality in the vertebral cross-sections to explain the vertebral fusion observed during in-life phenotyping (sagital section of contiguous vertebrae may be more helpful to detect vertebral fusion defects).

Skin: hyperplasia MPATH:134

References:

Nyska A and Maronpot RR (1999). Adrenal Gland. In: Pathology of The Mouse. Maronpot RR et al (eds..) Cachey River Press, IL. Pp 513-514.