CMHD Pathology Report

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ReportID: Report Date: September 25, 2013
Pathologist: Dr. H. Adissu

CMHD LabID: N13-577

Relevant History:
Phenotype:

abnormal vertebral arch morphology
preweaning lethality

AnimalID: M00948580 (Male)

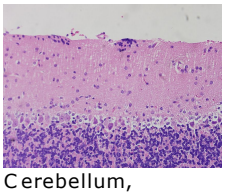
Histopathology Findings:

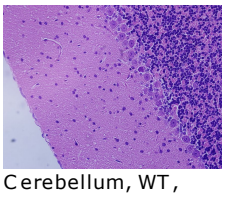
brain (MA:0000168)

Histopath Description:
There are three foci of aggregates of granular cells in the within the outer aspect of the molecular layer.

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

Definitive Diagnosis:
Cerebellar granular cell heterotopia


Cerebellum, heterotopic granular cells, 40x, HE


Cerebellum, WT, normal, 40x, 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).

liver (MA:0000358)

Histopath Description:
diffuse lipidosis

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

Definitive Diagnosis:

hepatic steatosis

thymus (MA:0000142)

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

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, testis, epididymis, seminal vesicle, and prostate.

AnimalID: M00948527 (Male)

Histopathology Findings:

liver (MA:0000358)

Histopath Description:
diffuse lipidosis

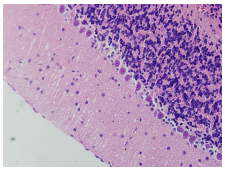
Morphological Diagnosis:
Distribution: diffuse; **Severity:** extreme; **MPATH Diagnosis:** steatosis MPATH:622

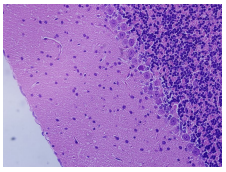
Definitive Diagnosis:
hepatic steatosis

brain (MA:0000168)

Histopath Description:
Normal

Definitive Diagnosis:
Normal


Cerebellum, normal, 40x, HE


Cerebellum, WT, normal, 40x, 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: M00948558 (Female)

Histopathology Findings:

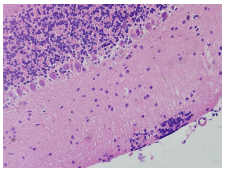
brain (MA:0000168)

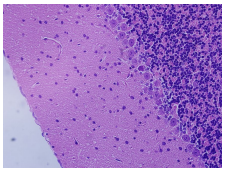
Histopath Description:
There are three foci of aggregates of granular cells in the within the outer aspect of the molecular layer.

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

Definitive Diagnosis:

Cerebellar granular cell heterotopia


Cerebellum, heterotopic granular cells, 40x, HE


Cerebellum, WT, normal, 40x, 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).

liver (MA:0000358)

Histopath Description:
diffuse lipidosis

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

Definitive Diagnosis:
hepatic steatosis

lung (MA:0000415)

Histopath Description:
focal peribrochiolar lymphocyte aggregate

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

Definitive Diagnosis:
focal peribrochiolar lymphocyte aggregate

spleen (MA:0000141)

Histopath Description:
moderate erythropoiesis

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

Definitive Diagnosis:
Moderate erythropoiesis

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: M00960529 (Female)

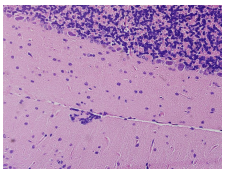
Histopathology Findings:

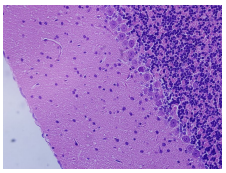
brain (MA:0000168)

Histopath Description:
There are three foci of aggregates of granular cells in the within the outer aspect of the molecular layer.

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

Definitive Diagnosis:
Cerebellar granular cell heterotopia


Cerebellum, heterotopic granular cells, 40x, HE


Cerebellum, normal, 40x, 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).

liver (MA:0000358)

Histopath Description:
diffuse lipidosis

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

Definitive Diagnosis:
hepatic steatosis

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 plasmatoid cells. There are promient 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.

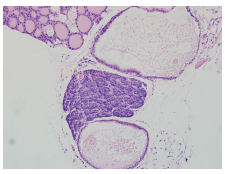
thyroid gland (MA:0000129)

Histopath Description:
Unilaterally and adjacent to the thyroid gland and the parathyroid gland are two 75 and 100 um diameter cysts that are lined by a single squamous and a stretch of simiple ciliated columnar epithelium. The cysts contain granular eosinophilic material in the lumen

Morphological Diagnosis:
Distribution: multifocal;

Definitive Diagnosis:
Cystic ultimobranchial body remnants

Histopathology Comments:
These are branchial pouch cysts located near thyroid or occasionally within thyroid. They are very common in human neonates. They are rare in mice.



Thyroid and parathyroid glands, cystic ultimobranchial body remnants, 40x, 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:
Three mice from these line have cerebellar granular cell heterotopia. The lesions are minimal and likely not clinically important, but its presence in 3 of the 4 mice in this line suggests genotype effect.

Other lesions in this line are incidental or attributable to diet or strain background. Histological analyses of single tissue sections is not suited to confirm veretbral dysmorphology.

There are no lesions predictive of preweaning homozygous lethality. Analysis of preweaning homozygous animals is required to determine cause of mortality. Further, such analysis may also help to assess the presence of lesions comparable to those seen humans with SEC23A gene recessive mutations. In humans homozygous missense mutation in the SEC23A gene is associated with with CRANIOLENTICULOSUTURAL DYSPLASIA; CLSD; OMIM - #607812).

Summary: Brain, Cerebellum: Granular cell heterotopia