Brain Histopathology MGP_BHP_001

Purpose

To perform a histopathological examination of the brain (striatal, hippocampal and/or cerebellar sections) and to record abnormal findings.

To perform a histopathology examination and annotation on a standard list of parameters of the brain (striatal, hippocampal and/or cerebellar sections).

Experimental Design

Number of mutant animals: 2-3 mutant males

Typical age at experiment 6-16 weeks. Mutants are compared to wildtype mice of the same age

Procedure

1. Collect and weigh the brains.
2. Drop fix in PFA or 10% Neutral Buffered Formalin and ship weekly.
3. Trim the brain producing 3 chunks per brain for the 3 brain areas.
4. Place each brain area on its corresponding cassette and incubate at room temperature in 70% alcohol.
5. Place cassettes onto tissue processor for 18hr 30min for dehydration with alcohol, replacement with solvent and incubation with paraffin.
6. Properly embed the brain chunks in paraffin onto the sectioning cassettes.
7. Section each brain area to obtain the 4 critical 5um sections per area to be placed on slides.
8. Store the slides in a slide box without a lid to dry overnight at 37^{o}C in an incubator.
9. Double stain the slides with nissl-luxol and coverslip.
10. Select the best critical section for each area and scan on a Hamamatsu.
11. Analyse and record the standard list of parameters for each brain area.
12. QC data.
13. Deblind, group by genotype and perform statistical analysis.
14. Upload and annotate images in Centre-specific database using the standardized IMPC Gross Pathology ontology:
    i. MA ontology terms for location/topography
    ii. MP ontology terms for large/small/abnormal
15. Record all abnormal findings in a Center-specific database using the standardized IMPC Gross Pathology ontology:
    i. MA ontology terms for location/topography
    ii. MP ontology terms for large/small/abnormal

Parameters and Metadata

Striatal Section MGP_BHP_001_001 | v1.0

seriesMediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: striatal_section

Increments: Minimum 1

Total Striatum Brain Area MGP_BHP_002_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: total_striatum_brain_area

Lateral Ventricles, Striatum, Left MGP_BHP_003_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: lateral_ventricles_striatum_left

Lateral Ventricles, Striatum, Right MGP_BHP_004_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: lateral_ventricles_striatum_right

Cingulate Cortex, Left MGP_BHP_005_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: cingulate_cortex_left

Cingulate Cortex, Right MGP_BHP_006_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: cingulate_cortex_right

Cingulate Cortex, Width, Left MGP_BHP_007_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: cingulate_cortex_width_left

Cingulate Cortex, Width, Right MGP_BHP_008_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: cingulate_cortex_width_right

Cingulate Cortex, Height MGP_BHP_009_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: cingulate_cortex_height

Genu of the Corpus Callosum MGP_BHP_010_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: genu_of_the_corpus_callosum

Genu of the Corpus Callosum, Width, Top MGP_BHP_011_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: genu_of_the_corpus_callosum_width_top

Genu of the Corpus Callosum, Width, Bottom MGP_BHP_012_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: genu_of_the_corpus_callosum_width_bottom

Genu of the Corpus Callosum, Height MGP_BHP_013_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: genu_of_the_corpus_callosum_height

Caudate Putamen, Left MGP_BHP_014_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: caudate_putamen_left

Caudate Putamen, Right MGP_BHP_015_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: caudate_putamen_right

Anterior Commissure, Anterior Part, Left MGP_BHP_016_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: anterior_commissure_anterior_part_left

Anterior Commissure, Anterior Part, Right MGP_BHP_017_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: anterior_commissure_anterior_part_right

Piriform Cortex, Striatum, Left MGP_BHP_018_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: piriform_cortex_striatum_left

Piriform Cortex, Striatum, Right MGP_BHP_019_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: piriform_cortex_striatum_right

Primary Motor Cortex, Striatum, Left MGP_BHP_020_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: primary_motor_cortex_striatum_left

Primary Motor Cortex, Striatum, Right MGP_BHP_021_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: primary_motor_cortex_striatum_right

Secondary Somatosensory Cortex, Striatum, Left MGP_BHP_022_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: secondary_somatosensory_cortex_striatum_left

Secondary Somatosensory Cortex, Striatum, Right MGP_BHP_023_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: secondary_somatosensory_cortex_striatum_right

Hippocampal section MGP_BHP_024_001 | v1.0

seriesMediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: hippocampal_section

Increments: Minimum 1

Total Hippocampus Brain Area MGP_BHP_025_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: total_hippocampus_brain_area

Lateral Ventricles, Hippocampus, Left MGP_BHP_026_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: lateral_ventricles_hippocampus_left

Lateral Ventricles, Hippocampus, Right MGP_BHP_027_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: lateral_ventricles_hippocampus_right

Dorsal Third Ventricle MGP_BHP_028_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: dorsal_third_ventricle

Retrosplenial Granular Cortex, C Region, Left MGP_BHP_029_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: retrosplenial_granular_cortex_c_region_left

Retrosplenial Granular Cortex, C Region, Right MGP_BHP_030_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: retrosplenial_granular_cortex_c_region_right

Retrosplenial Granular Cortex, C Region, Width, Left MGP_BHP_031_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: retrosplenial_granular_cortex_c_region_width_left

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Retrosplenial Granular Cortex, C Region, Width, Right MGP_BHP_032_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: retrosplenial_granular_cortex_c_region_width_right

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Retrosplenial Granular Cortex, C Region, Height MGP_BHP_033_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: retrosplenial_granular_cortex_c_region_height

Corpus Callosum MGP_BHP_034_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: corpus_callosum

Corpus Callosum, Width MGP_BHP_035_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: corpus_callosum_width

Corpus Callosum, Height MGP_BHP_036_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: corpus_callosum_height

Dorsal Hippocampal Commissure MGP_BHP_037_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: dorsal_hippocampal_commissure

Hippocampus MGP_BHP_038_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: hippocampus

Total Internal Length of Pyramidal Cells MGP_BHP_039_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: total_internal_length_of_pyramidal_cells

Dentate Gyrus, Left MGP_BHP_040_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: dentate_gyrus_left

Dentate Gyrus, Right MGP_BHP_041_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: dentate_gyrus_right

Molecular Layer of the Hippocampus, Left MGP_BHP_042_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: molecular_layer_of_the_hippocampus_left

Molecular Layer of the Hippocampus, Right MGP_BHP_043_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: molecular_layer_of_the_hippocampus_right

Radiatum Layer of the Hippocampus, Left MGP_BHP_044_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: radiatum_layer_of_the_hippocampus_left

Radiatum Layer of the Hippocampus, Right MGP_BHP_045_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: radiatum_layer_of_the_hippocampus_right

Oriens Layer of the Hippocampus, Left MGP_BHP_046_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: oriens_layer_of_the_hippocampus_left

Oriens Layer of the Hippocampus, Right MGP_BHP_047_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: oriens_layer_of_the_hippocampus_right

Amygdaloid Nucleus, Left MGP_BHP_048_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: amygdaloid_nucleus_left

Amygdaloid Nucleus, Right MGP_BHP_049_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: amygdaloid_nucleus_right

Piriform Cortex, Hippocampus, Left MGP_BHP_050_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: piriform_cortex_hippocampus_left

Piriform Cortex, Hippocampus, Right MGP_BHP_051_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: piriform_cortex_hippocampus_right

Primary Motor Cortex, Hippocampus, Left MGP_BHP_052_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: primary_motor_cortex_hippocampus_left

Primary Motor Cortex, Hippocampus, Right MGP_BHP_053_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: primary_motor_cortex_hippocampus_right

Secondary Somatosensory Cortex, Hippocampus, Left MGP_BHP_054_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: secondary_somatosensory_cortex_hippocampus_left

Secondary Somatosensory Cortex, Hippocampus, Right MGP_BHP_055_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm

Description: secondary_somatosensory_cortex_hippocampus_right

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Mammillothalamic Tract, Left MGP_BHP_056_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: mammillothalamic_tract_left

Mammillothalamic Tract, Right MGP_BHP_057_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: mammillothalamic_tract_right

Internal Capsule, Left MGP_BHP_058_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: internal_capsule_left

Internal Capsule, Right MGP_BHP_059_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: internal_capsule_right

Optic Tract, Left MGP_BHP_060_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: optic_tract_left

Optic Tract, Right MGP_BHP_061_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: optic_tract_right

Fimbria of the Hippocampus, Left MGP_BHP_062_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: fimbria_of_the_hippocampus_left

Fimbria of the Hippocampus, Right MGP_BHP_063_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: fimbria_of_the_hippocampus_right

Habenular Nucleus, Left MGP_BHP_064_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: habenular_nucleus_left

Habenular Nucleus, Right MGP_BHP_065_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: habenular_nucleus_right

Cerebellar Section MGP_BHP_066_001 | v1.0

seriesMediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: cerebellar_section

Increments: Minimum 1

Number of Cerebellar Folia MGP_BHP_067_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: number_of_cerebellar_folia

Total Cerebellum Brain Area MGP_BHP_068_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: total_cerebellum_brain_area

Fourth Ventricle MGP_BHP_069_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: fourth_ventricle

Pons MGP_BHP_070_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: pons

Pyramidal Tract, Left MGP_BHP_071_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: pyramidal_tract_left

Pyramidal Tract, Right MGP_BHP_072_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: pyramidal_tract_right

Genu of the Facial Nerve, Left MGP_BHP_073_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: genu_of_the_facial_nerve_left

Genu of the Facial Nerve, Right MGP_BHP_074_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: genu_of_the_facial_nerve_right

Cochlear Nucleus, Left MGP_BHP_075_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: cochlear_nucleus_left

Cochlear Nucleus, Right MGP_BHP_076_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: cochlear_nucleus_right

Lateral Cerebellar Nucleus, Left MGP_BHP_077_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: lateral_cerebellar_nucleus_left

Lateral Cerebellar Nucleus, Right MGP_BHP_078_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: lateral_cerebellar_nucleus_right

Interposed Cerebellar Nucleus, Anterior Part, Left MGP_BHP_079_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: interposed_cerebellar_nucleus_anterior_part_left

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Interposed Cerebellar Nucleus, Anterior Part, Right MGP_BHP_080_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: interposed_cerebellar_nucleus_anterior_part_right

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Internal Granular Layer MGP_BHP_081_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: cm2

Description: internal_granular_layer

Project_ID MGP_BHP_082_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Description: project_id

Options:
Sanger_HistologiX Sanger_ICS Sanger_WTCHG_14-16w Sanger_WTCHG_6w Sanger_WTCHG_ICS,

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Fixative MGP_BHP_083_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: fixative

Options: 10% Buffered Formalin 4% paraformaldehyde,

Staining Striatum MGP_BHP_084_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: staining_striatum

Options: Luxol-Nissl Nissl Dcx,

Staining Hippocampus MGP_BHP_085_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: staining_hippocampus

Options: Luxol-Nissl Nissl Dcx,

Staining Cerebellum MGP_BHP_086_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: staining_cerebellum

Options: Luxol-Nissl Nissl Dcx,

Experimentor ID (Analysis) Striatum MGP_BHP_087_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: experimentor_id_analysis_striatum

Experimentor ID (Analysis) Hippocampus MGP_BHP_088_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: experimentor_id_analysis_hippocampus

Experimentor ID (Analysis) Cerebellum MGP_BHP_089_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: experimentor_id_analysis_cerebellum
