Adult LacZ IMPC_ALZ_001

Purpose

To stain adult mutant and control tissues for bacterial beta-galactosidase (LacZ) activity in order to assess the adult organ, tissue, substructure and cell type of gene expression of IKMC alleles utilizing a LacZ reporter.

Description: Adult mouse tissues are scored for presence of LacZ staining which is distinct from either nonspecific staining observed in wildtype control mice, or is too faint to score as present. Intensity of staining is not required but can be reported. Anatomical terms to localize staining to the organ, structure, substructure, or cell type will use standard mouse anatomy ontology terms.

Experimental Design

Mutants:

- Minimum number of animals: 1M or 1F heterozygote
- Age will depend upon the logistics of each center, but all mice will be within ±7 days of the age stipulated in the center-specific protocols, and all mice will be > 50 days of age;
- The tissues in the agreed parameter list will be stained and annotated for each mutant

Controls:

- A minimum of one control mouse will be stained and annotated for every 10 mutants
- The tissues in the agreed parameter list will be stained and annotated for each control

Procedure

Center-specific methods will be provided and be on file and linked to the data for each mutant line.

For each mouse, for each tissue, the scoring system will be: + (specific staining), - (no staining), NS (non-specific staining), or NA (tissue not available)

Where positive, specific, staining is found:

A. A representative image will be taken and uploaded for each mutant line. The image will have a sizing reference bar and optional center-specific watermark embedded into the image.

B. The metadata collected for each mouse will be associated with the image.

C. Each image will have a substructure field for additional annotation provided by that center.
Notes

Tables of results for each tissue from each HET or HOM mouse scored for: presence /absence/non-specific/tissue not-available as defined above.

Representative images for positive staining tissues.

Additional annotation to provide anatomical substructure & cell specificity.

Database of non-specific staining and presentation of images representative of non-specific staining.

Data QC

Quality control for each center’s processes and annotation will be established by that center’s staff and published as part of their detailed protocol.

A database of control non-specific staining will be maintained by the Data Coordination Center and updated periodically to indicate the frequency of non-specific staining found in wildtype mice by each center. Representative images of non-specific staining will be linked to the data for each mutant line.

Parameters and Metadata

**Adrenal gland** IMPC_ALZ_001_001 | v1.2

*simpleParameter*

req. analysis: false  
req. upload: true  
is annotated: true

description: adrenal

options: imageOnly, expression, no expression, ambiguous, tissue not available,

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**Lower Urinary Tract** IMPC_ALZ_002_001 | v1.0

*simpleParameter*

req. analysis: false  
req. upload: true  
is annotated: true

description: lower urinary tract
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Brain IMPC_ALZ_003_001 | v1.0

simpleParameter


Description: brain

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Eye IMPC_ALZ_004_001 | v1.0

simpleParameter


Description: eye

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Heart IMPC_ALZ_005_001 | v1.0

simpleParameter


Description: heart

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
Kidney IMPC_ALZ_006_001 | v1.0

simpleParameter


Description: kidney

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Liver IMPC_ALZ_007_001 | v1.0

simpleParameter


Description: liver

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Lymph Node IMPC_ALZ_008_001 | v1.0

simpleParameter


Description: lymph_node

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
Mammary gland  IMPC_ALZ_009_001  | v1.0

simpleParameter

Description: mammary gland

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

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Ovary  IMPC_ALZ_010_001  | v1.0

simpleParameter

Description: ovary

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

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Oviduct  IMPC_ALZ_011_001  | v1.0

simpleParameter

Description: oviduct

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
**Skin**  IMPC_ALZ_012_001 | v1.1

*simpleParameter*

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

**Description:** skin_with_mg

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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**Stomach**  IMPC_ALZ_013_001 | v1.2

*simpleParameter*

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

**Description:** stomach

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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**Testis**  IMPC_ALZ_014_001 | v1.1

*simpleParameter*

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

**Description:** testis_epididymus

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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**Thymus**  IMPC_ALZ_015_001 | v1.0

*simpleParameter*
Description: thymus
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Trachea IMPC_ALZ_016_001 | v1.0
simpleParameter

Description: trachea
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Uterus IMPC_ALZ_017_001 | v1.0
simpleParameter

Description: uterus
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Large Intestine IMPC_ALZ_018_001 | v1.0
simpleParameter

Description: Large Intestine
Options: imageOnly, expression, no expression, ambiguous, tissue not available,
Description: large_intestine
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

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**Esophagus** IMPC_ALZ_019_001 | v1.0

*simpleParameter*


Description: esophagus
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

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**Spinal cord** IMPC_ALZ_020_001 | v1.0

*simpleParameter*


Description: spinal_cord
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

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**Thyroid gland** IMPC_ALZ_021_001 | v1.1

*simpleParameter*

Description: thyroid
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Pituitary gland  IMPC_ALZ_022_001 | v1.1
simpleParameter


Description: pituitary
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Skeletal Muscle  IMPC_ALZ_023_001 | v1.0
simpleParameter


Description: skeletal_muscle
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Small Intestine  IMPC_ALZ_024_001 | v1.0
simpleParameter


Description: small_intestine
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

White Adipose Tissue IMPC_ALZ_025_001 | v1.0

simpleParameter


Description: white_adipose_tissue

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Lung IMPC_ALZ_026_001 | v1.1

simpleParameter


Description: lungs

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Aorta IMPC_ALZ_027_001 | v1.0

simpleParameter


Description: aorta

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
**Pancreas** IMPC_ALZ_028_001 | v1.0

*simpleParameter*


Description: pancreas

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

**Prostate gland** IMPC_ALZ_029_001 | v1.1

*simpleParameter*


Description: prostate

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

**Spleen** IMPC_ALZ_030_001 | v1.0

*simpleParameter*


Description: spleen

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
**Brainstem**  IMPC_ALZ_031_001 | v1.0
simpleParameter

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

Description: brainstem

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

**Cartilage tissue**  IMPC_ALZ_032_001 | v1.1
simpleParameter

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

Description: cartilage

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

**Cerebral Cortex** IMPC_ALZ_033_001 | v1.0
simpleParameter

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

Description: cerebral_cortex

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
Cerebellum IMPC_ALZ_034_001 | v1.0

simpleParameter


Description: cerebellum

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Hippocampus IMPC_ALZ_035_001 | v1.0

simpleParameter


Description: hippocampus

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Hypothalamus IMPC_ALZ_036_001 | v1.0

simpleParameter


Description: hypothalamus

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Olfactory Lobe IMPC_ALZ_037_001 | v1.1

simpleParameter
Description: olfactory_lobe
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Peripheral Nervous System IMPC_ALZ_038_001 | v1.0

Description: peripheral_nervous_system
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Peyers Patch IMPC_ALZ_039_001 | v1.0

Description: peyers_patch
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Striatum IMPC_ALZ_040_001 | v1.1
Description: striatum

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Vascular System IMPC_ALZ_041_001 | v1.0

Description: vascular_system

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Urinary bladder IMPC_ALZ_042_001 | v1.1

Description: urinary bladder

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Bone IMPC_ALZ_043_001 | v1.0

Description: vascular_system

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
Description: bone
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

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**Cecum**  IMPC_ALZ_044_001  |  v1.0

*simpleParameter*


Description: cecum
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

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**Colon**  IMPC_ALZ_045_001  |  v1.0

*simpleParameter*


Description: colon
Options: imageOnly, expression, no expression, ambiguous, tissue not available,

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**Duodenum**  IMPC_ALZ_046_001  |  v1.0

*simpleParameter*


Description: duodenum
**Ileum**  IMPC_ALZ_047_001  | v1.0

*simpleParameter*

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

**Description:** ileum

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

**Jejunum**  IMPC_ALZ_048_001  | v1.0

*simpleParameter*

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

**Description:** jejunum

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

**Gonadal fat pad**  IMPC_ALZ_049_001  | v1.1

*simpleParameter*

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

**Description:** adipose_gonad

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,
Bone Marrow  IMPC_ALZ_050_001 | v1.0

simpleParameter


Description: bone_marrow

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Vas Deferens  IMPC_ALZ_051_001 | v1.0

simpleParameter


Description: vas_deferens

Options: imageOnly, expression, no expression, ambiguous, tissue not available,

Brown adipose tissue  IMPC_ALZ_052_001 | v1.1

simpleParameter


Description: adipose_brown

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
**Mesenteric adipose tissue** IMPC_ALZ_053_001 | v1.1

**simpleParameter**

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

**Description:** adipose_mesenteric

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

**Blood** IMPC_ALZ_054_001 | v1.1

**simpleParameter**

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

**Description:** blood_smear

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

**Diaphragm** IMPC_ALZ_055_001 | v1.0

**simpleParameter**

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

**Description:** diaphragm

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,
**Gall Bladder** IMPC_ALZ_056_001 | v1.0

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simpleParameter


Description: gall_bladder

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
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**Harderian Gland** IMPC_ALZ_057_001 | v1.1

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simpleParameter


Description: hardarian_gland

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
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**Hindlimb** IMPC_ALZ_058_001 | v1.1

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simpleParameter


Description: hind_limb

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
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**Quadriceps** IMPC_ALZ_059_001 | v1.1

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simpleParameter


Description: quadriceps

Options: imageOnly, expression, no expression, ambiguous, tissue not available,
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Description: muscle_quad
Options: imageOnly, expression, no expression, ambiguous, tissue not available,
**Description:** penis

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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**Stomach pyloric region** IMPC_ALZ_063_001 | v1.1

**Description:** pylorus

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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**Chest bone** IMPC_ALZ_064_001 | v1.1

**Description:** ribcage

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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**Sciatic nerve** IMPC_ALZ_065_001 | v1.1

**Description:**

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,
**Description:** sciatic_nerve_quad

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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**Cranium**  IMPC_ALZ_066_001 | v1.1

**simpleParameter**

**Description:** skull

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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**Sublingual Gland**  IMPC_ALZ_067_001 | v1.0

**simpleParameter**

**Description:** sublingual_gland

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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**Submandibular Gland**  IMPC_ALZ_068_001 | v1.0

**simpleParameter**

**Description:** submandibular_gland

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,
Tongue IMPC_ALZ_069_001 | v1.0

**simpleParameter**

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

**Description:** tongue

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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Trigeminal V nerve IMPC_ALZ_070_001 | v1.1

**simpleParameter**

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

**Description:** trigeminal_nerve

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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Vagina IMPC_ALZ_071_001 | v1.0

**simpleParameter**

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

**Description:** vagina

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,
**Vesicular Gland**  IMPC_ALZ_072_001  | v1.0

simpleParameter

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

**Description:** vesicular_gland

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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**Mesenteric Lymph Node**  IMPC_ALZ_073_001  | v1.0

simpleParameter

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

**Description:** mesenteric_lymph_node

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

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**Oral epithelium**  IMPC_ALZ_074_001  | v1.1

simpleParameter

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

**Description:** oral_epithelia

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,
**LacZ Images Section**  IMPC_ALZ_075_001  | v1.1

seriesMediaParameter


Description: lacz_images_section

Increments: Minimum 1

**LacZ Images Wholemount**  IMPC_ALZ_076_001  | v1.1

seriesMediaParameter


Description: lacz_images_wholemount

Increments: Minimum 1

**Free Ontology**  IMPC_ALZ_077_001  | v1.1

simpleParameter


Description: free_ontology

**Free Ontology Annotation reason**  IMPC_ALZ_078_001  | v1.1

simpleParameter
Free text comment IMPC_ALZ_079_001 | v1.1

Microscope equipment id IMPC_ALZ_080_001 | v1.0

Microscope equipment manufacturer IMPC_ALZ_081_001 | v1.1
**Microscope equipment model**  IMPC_ALZ_082_001 | v1.1

*procedureMetadata*

**Description:** microscope_equipment_model

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**Date Microscope last calibrated**  IMPC_ALZ_083_001 | v1.1

*procedureMetadata*

**Description:** date_microscope_last_calibrated

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**Detector equipment manufacturer**  IMPC_ALZ_084_001 | v1.0

*procedureMetadata*

**Description:** detector_equipment_manufacturer

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**Detector equipment model**  IMPC_ALZ_085_001 | v1.0

*procedureMetadata*

**Description:** detector_equipment_model
Description: detector_equipment_model

Objective equipment company  IMPC_ALZ_086_001 | v1.0

Description: objective_equipment_company

Objective equipment model  IMPC_ALZ_087_001 | v1.0

Description: objective_equipment_model

Objective magnification  IMPC_ALZ_088_001 | v1.0

Description: objective_magnification

Illumination source manufacturer  IMPC_ALZ_089_001 | v1.0
procedureMetadata

**Illumination source model** IMPC_ALZ_090_001 | v1.0

**Sample preparation stain name** IMPC_ALZ_091_001 | v1.1

**Sample preparation reference impc** IMPC_ALZ_092_001 | v1.1
**Bit Depth**  IMPC_ALZ_093_001  | v1.0

*procedureMetadata*

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

**Description:** bit_depth

**Colorspace**  IMPC_ALZ_094_001  | v1.0

*procedureMetadata*

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

**Description:** colorspace

**Experimental category**  IMPC_ALZ_095_001  | v1.0

*procedureMetadata*

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

**Description:** experimental_category

**Orientation**  IMPC_ALZ_096_001  | v1.0

*procedureMetadata*

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

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**Pixels per millimeter before processing**  IMPC_ALZ_097_001 | v1.0

procedureMetadata


Description: pixels_per_millimeter_before_processing

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**Pixels per millimeter after processing**  IMPC_ALZ_098_001 | v1.1

procedureMetadata


Description: pixels_per_millimeter_after_processing

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**Showcase image**  IMPC_ALZ_099_001 | v1.0

procedureMetadata


Description: showcase_image
**Date of Sacrifice**  IMPC_ALZ_100_001 | v1.1

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

**Description:** date_of_sacrifice

**Date of Perfusion**  IMPC_ALZ_101_001 | v1.2

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

**Description:** date_of_perfusion

**Epididymis**  IMPC_ALZ_102_001 | v1.2

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

**Options:** imageOnly, expression, no expression, ambiguous, tissue not available,

**Main olfactory bulb** IMPC_ALZ_103_001 | v1.1

- **Req. Analysis:** false  
- **Req. Upload:** false  
- **Is Annotated:** true
**Midbrain** IMPC_ALZ_104_001 | v1.0

simpleParameter

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

**Options:** expression, no expression, ambiguous, imageOnly, tissue not available,


**Thalamus** IMPC_ALZ_105_001 | v1.0

simpleParameter

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

**Options:** expression, no expression, ambiguous, imageOnly, tissue not available,