**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

**Lymph Node** IMPC_ALZ_008_001 | v1.0

simpleParameter

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

**Ileum** IMPC_ALZ_047_001 | v1.0

simpleParameter

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Thymus  IMPC_ALZ_015_001  |  v1.0

simpleParameter


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

Parathyroid gland  IMPC_ALZ_060_001  |  v1.1

simpleParameter


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

Colors space  IMPC_ALZ_094_001  |  v1.0

procedureMetadata


Experimental category  IMPC_ALZ_095_001  |  v1.0

procedureMetadata
Kidney  IMPC_ALZ_006_001 | v1.0
simpleParameter

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

Prostate gland  IMPC_ALZ_029_001 | v1.1
simpleParameter

Options: tissue not available, ambiguous, imageOnly, expression, no expression,
**Testis** IMPC_ALZ_014_001 | v1.1

simpleParameter

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

**Cerebellum** IMPC_ALZ_034_001 | v1.0

simpleParameter

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

**Illumination source manufacturer** IMPC_ALZ_089_001 | v1.0

procedureMetadata

**Microscope equipment id** IMPC_ALZ_080_001 | v1.0

procedureMetadata
**Tongue**  IMPC_ALZ_069_001  |  v1.0

simpleParameter

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

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**Ovary**  IMPC_ALZ_010_001  |  v1.0

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

simpleParameter
Harderian Gland IMPC_ALZ_057_001 | v1.1

**simpleParameter**

Illumination source model IMPC_ALZ_090_001 | v1.0

**procedureMetadata**

Large Intestine IMPC_ALZ_018_001 | v1.0

**simpleParameter**
**Orientation** IMPC_ALZ_096_001 | v1.0

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

**Bit Depth** IMPC_ALZ_093_001 | v1.0

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

**Hindlimb** IMPC_ALZ_058_001 | v1.1
**Eye** IMPC_ALZ_004_001 | v1.0

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**Olfactory Lobe** IMPC_ALZ_037_001 | v1.1

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**Sciatic nerve** IMPC_ALZ_065_001 | v1.1
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Spleen IMPC_ALZ_030_001 | v1.0
simpleParameter


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White Adipose Tissue IMPC_ALZ_025_001 | v1.0
simpleParameter


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

Brain IMPC_ALZ_003_001 | v1.0
simpleParameter


Options: no expression, ambiguous, expression, imageOnly, tissue not available,
Objective equipment company IMPC_ALZ_086_001 | v1.0
procedureMetadata


Trachea IMPC_ALZ_016_001 | v1.0
simpleParameter

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

Lower Urinary Tract IMPC_ALZ_002_001 | v1.0
simpleParameter

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

Gall Bladder IMPC_ALZ_056_001 | v1.0
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Options: expression, ambiguous, no expression, tissue not available, imageOnly,
**Uterus** IMPC_ALZ_017_001 | v1.0

*simpleParameter*

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**Vesicular Gland** IMPC_ALZ_072_001 | v1.0

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

*procedureMetadata*

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**Cranium** IMPC_ALZ_066_001 | v1.1

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Date of Perfusion IMPC_ALZ_101_001 | v1.2

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Midbrain IMPC_ALZ_104_001 | v1.0

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Aorta IMPC_ALZ_027_001 | v1.0

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Bone Marrow IMPC_ALZ_050_001 | v1.0

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Penis  IMPC_ALZ_062_001 | v1.0

simpleParameter


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

Mesenteric adipose tissue  IMPC_ALZ_053_001 | v1.1

simpleParameter


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

Oral epithelium  IMPC_ALZ_074_001 | v1.1

simpleParameter


Options: expression, imageOnly, tissue not available, ambiguous, no expression,
**Date of Sacrifice** IMPC_ALZ_100_001 | v1.1

procedureMetadata

**Pituitary gland** IMPC_ALZ_022_001 | v1.1

simpleParameter

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

procedureMetadata

**Vascular System** IMPC_ALZ_041_001 | v1.0

simpleParameter

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**Showcase image** IMPC_ALZ_099_001 | v1.0

*procedureMetadata*

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

*procedureMetadata*

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**Skeletal Muscle** IMPC_ALZ_023_001 | v1.0

*simpleParameter*

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

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**Cartilage tissue** IMPC_ALZ_032_001 | v1.1

*simpleParameter*

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**Stomach** IMPC_ALZ_013_001 | v1.2

simpleParameter

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Is Annotated: true

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

**Skin** IMPC_ALZ_012_001 | v1.1

simpleParameter

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

**Striatum** IMPC_ALZ_040_001 | v1.1

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**Lung** IMPC_ALZ_026_001 | v1.1

simpleParameter

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**Blood** IMPC_ALZ_054_001 | v1.1

simpleParameter

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**Chest bone** IMPC_ALZ_064_001 | v1.1

simpleParameter

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**Peripheral Nervous System** IMPC_ALZ_038_001 | v1.0

simpleParameter

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Pancreas IMPC_ALZ_028_001 | v1.0

simpleParameter


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

LacZ Images Section IMPC_ALZ_075_001 | v1.1

seriesMediaParameter


Increments: Minimum 1

Oviduct IMPC_ALZ_011_001 | v1.0

simpleParameter


Options: imageOnly, no expression, ambiguous, tissue not available, expression,
Liver IMPC_ALZ_007_001 | v1.0

simpleParameter


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

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Free Ontology IMPC_ALZ_077_001 | v1.1

simpleParameter


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Vagina IMPC_ALZ_071_001 | v1.0

simpleParameter


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

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Detector equipment model IMPC_ALZ_085_001 | v1.0

procedureMetadata

**Peyers Patch** IMPC_ALZ_039_001 | v1.0

*simpleParameter*

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- **Is Annotated:** true

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

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**Trigeminal V nerve** IMPC_ALZ_070_001 | v1.1

*simpleParameter*

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

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**Parotid gland** IMPC_ALZ_061_001 | v1.0

*simpleParameter*

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**Objective equipment model** IMPC_ALZ_087_001 | v1.0

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**Sublingual Gland** IMPC_ALZ_067_001 | v1.0

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**Submandibular Gland** IMPC_ALZ_068_001 | v1.0

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**Urinary bladder** IMPC_ALZ_042_001 | v1.1
**Objective magnification**  IMPC_ALZ_088_001  |  v1.0

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

**Sample preparation reference impc**  IMPC_ALZ_092_001  |  v1.1

**Stomach pyloric region**  IMPC_ALZ_063_001  |  v1.1
Options: imageOnly, no expression, ambiguous, expression, tissue not available,

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**Quadriceps** IMPC_ALZ_059_001 | v1.1
simpleParameter


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

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**Cecum** IMPC_ALZ_044_001 | v1.0
simpleParameter


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

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**Duodenum** IMPC_ALZ_046_001 | v1.0
simpleParameter


Options: imageOnly, no expression, expression, tissue not available, ambiguous,
**Brown adipose tissue** IMPC_ALZ_052_001 | v1.1

simpleParameter


**Options**: expression, no expression, ambiguous, tissue not available, imageOnly,
Esophagus  IMPC_ALZ_019_001 | v1.0

Mammary gland  IMPC_ALZ_009_001 | v1.0

Thyroid gland  IMPC_ALZ_021_001 | v1.1

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**Hypothalamus** IMPC_ALZ_036_001 | v1.0

*simpleParameter*

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

 simplesParameter


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

**Adrenal gland** IMPC_ALZ_001_001 | v1.2

 simplesParameter


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

**Free text comment** IMPC_ALZ_079_001 | v1.1

 simplesParameter


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

procedureMetadata

**Small Intestine**  IMPC_ALZ_024_001 | v1.0

simpleParameter


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

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**Spinal cord**  IMPC_ALZ_020_001 | v1.0

simpleParameter


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

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**Jejunum**  IMPC_ALZ_048_001 | v1.0

simpleParameter


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