Indirect ophthalmoscopy ESLIM_013_001

Purpose

This test can be used to determine whether a mouse presents with abnormalities of the fundus, such as retinal degeneration, optic disc coloboma, or vascular problems.

EMPReSS Standard Operating Procedure	Title: Using an indirect ophthalmoscope	
	Doc. Number: ESLIM_013_001 Rev No.	Date Issued: 01/06/04

1.0 Purpose:

1.1 This test can be used to determine whether a mouse presents with abnormalities of the fundus, such as retinal degeneration, optic disc coloboma, or vascular problems.

2.0 Scope:

2.1 Individuals who have been trained, and are competent in performing the procedures described herein must follow this procedure.

2.2 Any queries, comments or suggestions, either relating to this SOP in general or to a specific problem encountered during a procedure, should be addressed to the Visual Research Project Leader.

2.3 Any deviances from this protocol must be reported to the Visual Research Project Leader.

3.0 Safety Requirements:

3.1 General laboratory procedures should be followed, which include: no eating, no chewing gum, no drinking, and no applying of cosmetics in the work area. Laboratory coats and gloves must be worn at all times in the work area, unless the protocol specifically describes the appropriate attire for the procedure.

4.0 Associated Documents:

5.0 Notes:

6.0 Quality Control:

7.0 Equipment:

7.1 Heine Sigma 150 ophthalmoscope (full head brace or spectacle mounted ophthalmoscope), or a Heine Omega 180 ophthalmoscope (full head brace) or a

Heine Video Omega 2C indirect Ophthalmoscope (full head brace), VRmAVC Video Grabber, computer or a Kowa Genesis opthalmoscope

7.2 Power supply, Heine Accubox II

7.3 Volk double aspheric 30, 40, 60 or 90D lens, or Volk Superfield NC lens

8.0 Supplies:

8.1 Mydriatic: Tropicamide, 1% supplied by Minims or 1% Atropine (active ingredient 1% atropine sulfate)

9.0 Procedure:

9.1 Remove the screw top from the vial containing the mydriatic (1% tropicamide or 1% atropine).

9.2 Restrain the mouse firmly in one hand.

9.3 Whilst holding the mouse in one hand, pick up the vial containing the mydriatic and squeeze directly above an eye of the mouse allowing a drop to cover the surface of the eye. Take care that no contact is made with the surface of the eye and the dropper. Repeat the procedure for the second eye.

9.4 Return the mouse to its cage and allow at least 5 minutes for the effect of the mydriatic to take place.

9.5 Using either the Heine Sigma 150, or Heine Omega 180, place the device onto your head and adjust the binoculars accordingly.

9.6 Adjust the light being emitted from the ophthalmoscope by altering the pinhole size button located on the binocular housing.

9.7 Once time has elapsed, restrain the mouse firmly in one hand.

9.8 Hold the mouse at arms length and shine the light into the eye of the mouse to determine if the pupil has fully dilated. This will be apparent when the iris is not visible.

9.9 Pick up the lens and place between the mouse eye and the beam of light.

9.10 Adjust the lens in and out until the back of the retina can be visualised.

9.11 Orientate the field of view by visualising the optic disc.

9.12 Moving the lens around the eye will alter the view, such that the whole fundus can be examined.

9.13 Record a description of the mouse eye observed.

9.14 Repeat the observation for the second eye.

9.15 To take fundus photos the Heine Video Omega 2C Ophthalmoscope, connected to the video grabber and the computer, is used. The handling is similar as described before.

9.16 If possible a second person should check the fundus image on the computer monitor. To save the image, click on "snapshot".

10.0 Supporting Information:

10.1 Presence of visual head tracking differentiates normal sighted from retinal degenerate mice. Thaung C, Arnold K, Jackson IJ, Coffey PJ. Neurosci Lett. 2002 May 31;325(1):21-4.

10.2 Novel ENU-induced eye mutations in the mouse: models for human eye disease. Thaung C, West K, Clark BJ, McKie L, Morgan JE, Arnold K, Nolan PM, Peters J, Hunter AJ, Brown SD, Jackson IJ, Cross SH. Hum Mol Genet. 2002 Apr 1;11(7):755-67

10.3 Hawes NL, et al., 1999 Mouse fundus photography and angiography: a catalogue of normal and mutant phenotypes. Mol Vis. 5:22.

10.4 Helmlinger, D. et al., 2002 Progressive retinal degeneration and dysfunction in R6 Huntington's disease mice. Human mol. Genet., 11:3351-3359.

11.0 History Review:

12.0 Emergency Procedures:

Parameters and Metadata

Eye ESLIM_013_001_001 | v1.0

simpleParameter

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

Description: Eye

Options: normal, abnormal,

Description ESLIM_013_001_002 | v1.0

simpleParameter

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

Description: Description

Left retina ESLIM_013_001_003 | v1.0

simpleParameter

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

Description: Left_Retina

Options: normal, abnormal, no data,

Left retina pigmentation ESLIM_013_001_004 | v1.0

simpleParameter

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

Description: Left_Retina_Pigmentation

Options: normal, abnormal, not defined, no data,

Left retina structure ESLIM_013_001_005 | v1.0

simpleParameter

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

Description: Left_Retina_Structure

Options: normal, degenerate, not defined, no data,

Left optic disc ESLIM_013_001_006 | v1.0

simpleParameter

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

Description: Left_Optic_Disc

Options: normal, abnormal, not defined, no data,

Right retina ESLIM_013_001_007 | v1.0

simpleParameter

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

Description: Right_Retina

Options: normal, abnormal, no data,

Right retina pigmentation ESLIM_013_001_008 | v1.0

simpleParameter

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

Description: Right_Retina_Pigmentation

Options: normal, abnormal, not defined, no data,

Right retina structure ESLIM_013_001_009 | v1.0

simpleParameter

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

Description: Right_Retina_Structure

Options: normal, degenerate, not defined, no data,

Right optic disc ESLIM_013_001_010 | v1.0

simpleParameter

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

Description: Right_Optic_Disc

Options: normal, abnormal, not defined, no data,

Left eye blood vessels ESLIM_013_001_011 | v1.0

simpleParameter

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

Description: Left_Eye_Blood_Vessels

Options: normal, abnormal, no data,

Left eye blood vessels structure ESLIM_013_001_012 | v1.0

simpleParameter

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

Description: Left_Eye_Blood_Vessels_Structure

Options: normal appearance, abnormal appearance, not defined, no data,

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Left eye blood vessels pattern ESLIM_013_001_013 | v1.0

simpleParameter

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

Description: Left_Eye_Blood_Vessels_Pattern

Options: normal, abnormal, not defined, no data,

Right eye blood vessels ESLIM_013_001_014 | v1.0

simpleParameter

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

Description: Right_Eye_Blood_Vessels

Options: normal, abnormal, no data,

Right eye blood vessels structure ESLIM_013_001_015 | v1.0

simpleParameter

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

Description: Right_Eye_Blood_Vessels_Structure

Options: normal appearance, abnormal appearance, not defined, no data,

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Right eye blood vessels pattern ESLIM_013_001_016 | v1.0

simpleParameter

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

Description: Right_Eye_Blood_Vessels_Pattern

Options: normal, abnormal, not defined, no data,

Digitial image(s) ESLIM_013_001_017 | v1.0

seriesMediaParameter

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

Description: Digitial_Image_s_

Body weight ESLIM_013_001_018 | v1.0

simpleParameter

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

Unit Measured: g

Description: Body_Weight

Equipment name ESLIM_013_001_801 | v1.0

procedureMetadata

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

Description: Equipment_name

Equipment manufacturer ESLIM_013_001_802 | v1.0

procedureMetadata

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

Description: Equipment_manufacturer

Equipment model ESLIM_013_001_803 | v1.0

procedureMetadata

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

Description: Equipment_model

Topical agent(s) ESLIM_013_001_804 | v1.0

procedureMetadata

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

Description: Topical_agent_s_

Options: atropine, tropicamide, atropine + neosynephrine, tropicamide + neosynephrine, tropicamide + phenylephrine,

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