

SANGER INSTITUTE STANDARD OPERATING PROCEDURE

SUBJECT: Hair Analysis and High Fat Diet – V1

SOP Number: SOP0044	To be reviewed:	
Author(s):	Signed:	Date:
Editor:	Signed:	Date:
Date modified:		

INTRODUCTION:

This purpose of this procedure is to check coat formation and development in wild-type and genetically altered mice and to replace regular Lab Diet with High-Fat Diet.

HEALTH & SAFETY:

- **RA003** – Hazardous Substances; *Section RA003.2*
- **RA004** – Physical Hazards; *Sections RA004.2, RA004.6*

RESPONSIBILITIES:

All staff performing this procedure are responsible for ensuring that this SOP has been read, understood and where applicable is followed in accordance with the relevant PPL. All staff should be trained and competent to perform the procedure, where applicable they should also be licensed to perform the procedure.

RESOURCES:

Equipment:

1. Weight scale
2. 70% Ethanol and paper hand towels
3. Clean cages with nestlets
4. Western RD diet (*Supplier name: Dietex International Ltd (SDS). Supplier product code: 10120000-001*)
5. Interactive cage change station
6. Chew blocks

Associated Documents & SOPs:

- **SOP0045** – Weigh Mice
- **EQ18** – Use of Interactive Change Station

Staff Required: This test can be completed by one phenotyper.

NOTE:

If a parameter is scored as abnormal and it is believed to be due to over-grooming, attach a 'Hair Reanalysis Required' label to the cage and repeat hair analysis at 5 weeks of age, date label accordingly. If the abnormality is no longer observed at 5

weeks of age, change the parameter to normal in the DCF and add the comment 'suspected over grooming – hair returned on (5 week date)'. If abnormality remains, leave as abnormal. Remove the 5 week observation card.

PROCEDURE:

Before performing the procedure, verify that this is the correct procedure at this point in the pipeline by consulting the cage card(s) and confirming that the procedure has not already been performed on the mouse.

- 1 Prepare change station for use (refer to **EQ18** – Use of Interactive Change Station).
- 2 Identify mouse to be tested by ear mark.
- 3 Check for guard hairs. This is most easily visible on the mouse's back (see Image 1 in the Appendix).
- 4 Observe the dorsal coat for abnormalities (long, short, rough, sparse, coarse, fine and/or skin visible) (see Image 2 in the Appendix).
- 5 Observe the ventral coat for abnormalities (long, short, rough, sparse, coarse, fine and/or skin visible) (see Image 3 in the Appendix).
- 6 Examine the area behind the mouse's ears for the presence or absence of hair (see Image 4 in the Appendix).
- 7 Examine the tail for the presence or absence of hair along its length (see Diagram 1 in the Appendix).
- 8 Examine the tip of the tail for the presence or absence of hair (see Diagram 1 & Image 5 in the Appendix).
- 9 Observe the whiskers for abnormalities (short, long, curly, disorientated, and/or absent) (see Image 6 in the Appendix).
- 10 Weigh mouse (refer to **SOP0045** – Weigh Mice).
- 11 Record results according to current DCF.
- 12 Place the mouse into a clean cage base with 3 chew blocks and a nestlet.
- 13 Repeat steps 2-12 for the rest of the mice in the cage.
- 14 Dispose of the Lab Diet in the food hopper of the original cage and replace with High Fat Diet. Transfer cage lid and cage enrichment to the new cage.
- 15 Repeat steps 2-14 for all cages to be tested.
- 16 Clean equipment and surfaces. Transfer all waste to a yellow offensive waste bag or clearly labelled waste container.
- 17 Ensure all cages display updated cage cards. Place 'POST PROCEDURE CHECK REQUIRED' labels on cages if returned to the holding room.

APPENDIX

Image 1: Guard hairs present & absent.

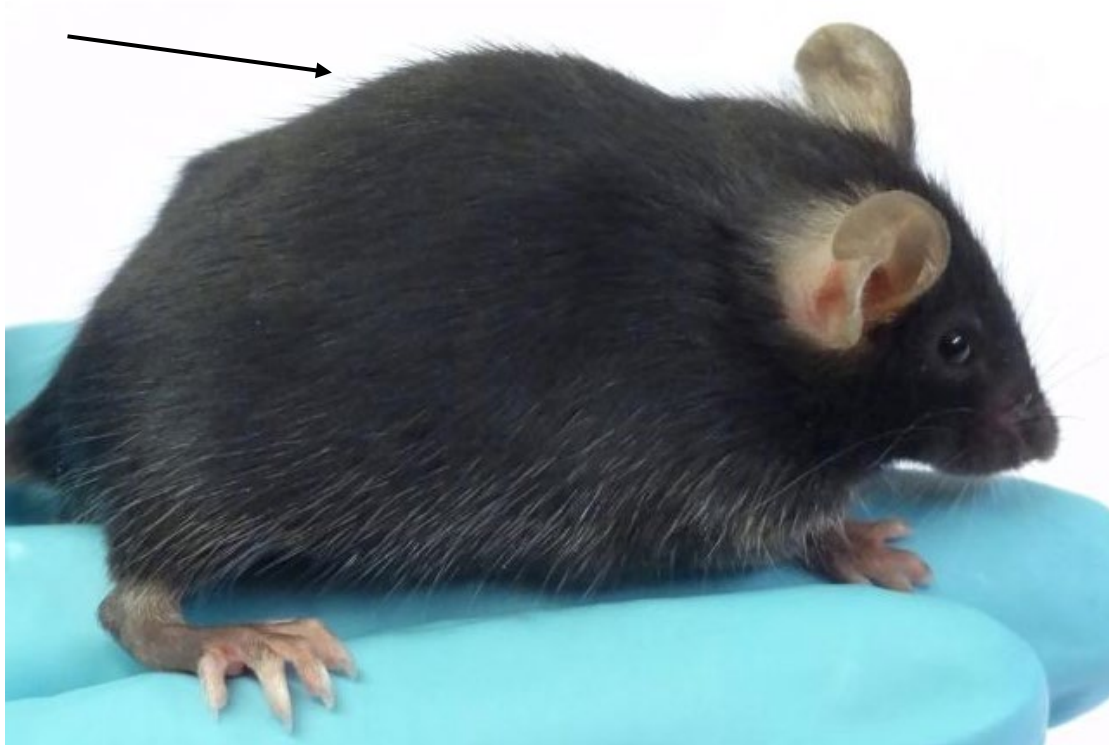


Image 2: Dorsal coat: normal in the 1st photo, greasy in the 2nd photo and sparse hair with skin visible in the 3rd photo.

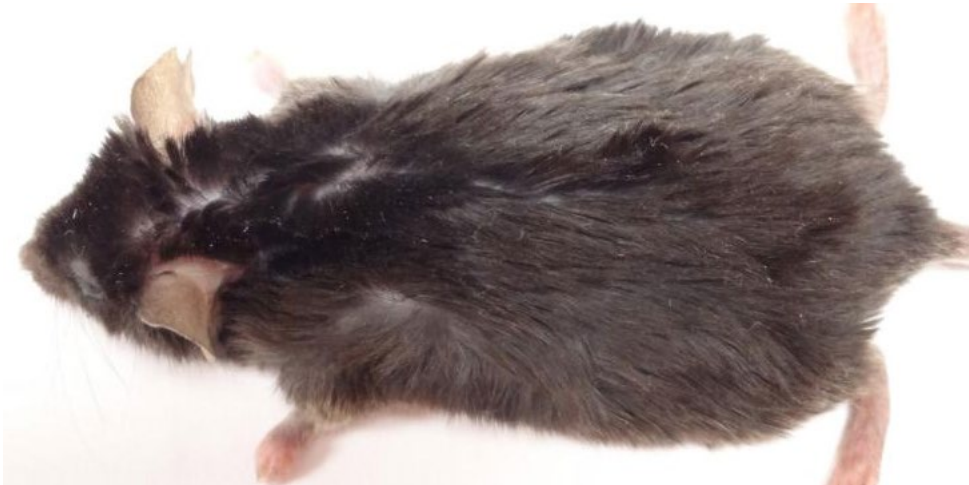


Image 3: The mouse on the left has a normal coat, while the mouse on the right has a sparse coat with skin visible.



Image 4: The mouse on the left has hair present behind its ears as normal, while the mouse on the right doesn't.

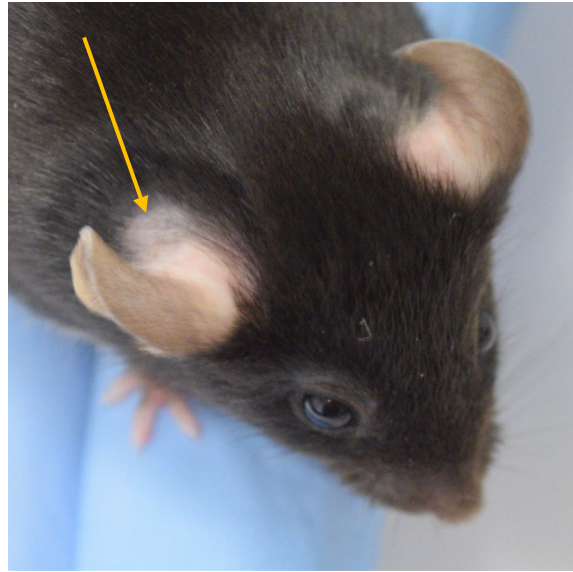


Diagram 1: This diagram shows the difference between having hair on the tail and having hair on the tip of the tail. Both examples would be marked as *present* for having *hair on tail*, but the second would be marked as *absent* for having *tail tip hairs*.

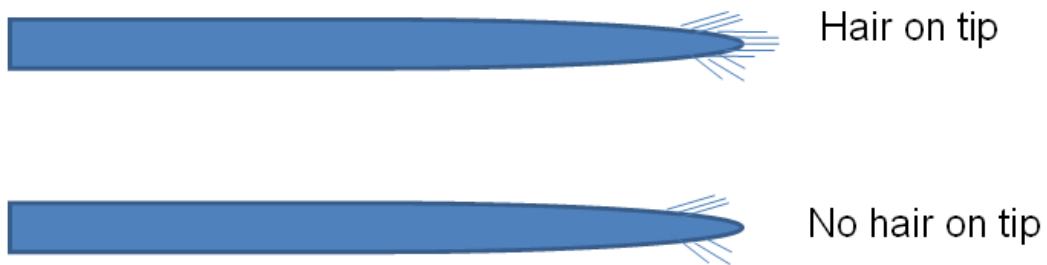


Image 5: This is a normal tail with hairs present at the tip.

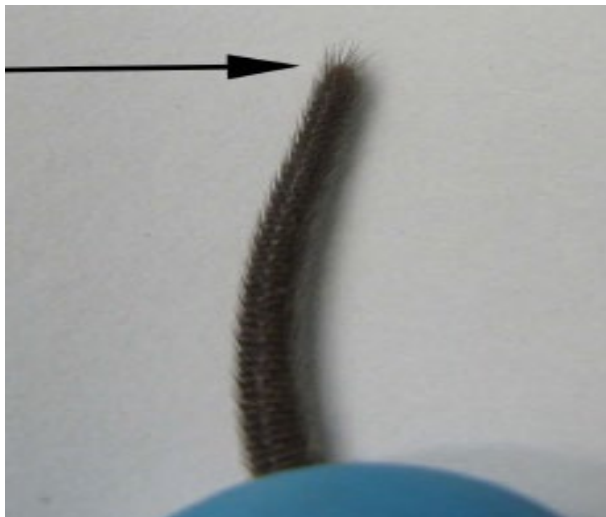


Image 6: The 1st photo shows normal whiskers, the 2nd short whiskers and the 3rd absent whiskers.

