

SAMPLE HANDLING

For Canine DNA research & testing at the University of Missouri

Blood Sample - The ideal sample for DNA extraction is 3 to 7cc's of whole blood, in **purple-topped (EDTA)** tubes (one or several, depending on tube size). For very small dogs, 1 to 2 ccs should be sufficient. Please do not send less than 1 cc. The blood sample needs only to be put in the tubes and rocked gently a few times to distribute the anticoagulant - do **not** spin, extract serum, or do anything further. Refrigerate if the sample is being held for any time before shipping, but do not hold the sample longer than 1 week before shipping or it may become unusable.

Frozen Semen - Frozen semen stored from deceased sires or affected dogs can be a source of DNA for testing. Please send about 1 breeding unit. The straws or pellets do not need to be shipped frozen, but do pack them in a crush-proof & leak-proof container. Special handling fee is \$40 for this sample, in addition to the regular testing fee.

Tissue Sample - DNA can be extracted from any cell-rich tissue. If a dog is to be tested post-mortem, a 1" cube (or equivalent) of tongue, other major muscle, spleen, kidney, or liver will provide a large amount of DNA (one tissue is sufficient – do not send multiple tissues). Tissue samples should be placed in a clearly labeled freezer bag or other sterile container and frozen. **DO NOT place in formalin!** Place the bagged tissue inside another bag, freeze, and ship with a frozen cool pack (do not use dry ice, or ice cubes placed in a ziplock bag). If this is the only sample (no blood sample available), add special handling fee of \$40 to testing fee.

Label sample with the following:
call name - owner's last name

The ***Individual Dog Information Form & Survey*** that follow this instruction sheet should be completed, and a ***pedigree copy***, if available, should be included with the sample.

Include TESTING FEE of \$65 dogs from breeds with confirmed NCL mutations (American Bulldogs, American Staffordshire Terriers, Australian Cattle Dog, Australian Shepherd, Border Collie, Cane Corso, Chihuahua, Chinese Crested, Dachshunds, Golden Retriever, English Setters, Pit Bull Terriers & Pit Bull mixes, Staffordshire Bull Terriers, & Tibetan Terriers). *There is no fee for breeds where no NCL test is confirmed, and submission is for research purposes.* Fee payable via check or money order payable to "University of Missouri", or major credit cards (Visa, MC, AmEx, Discover).

Shipping - Ideally the sample should be shipped immediately. If samples are held for a day or over a weekend, blood must be refrigerated, and tissue samples must be kept frozen. Ship via overnight delivery (US Mail, UPS, FedEx, or others). **Do not send on a Friday** - there will not be anyone to accept the delivery on a weekend, and the sample could be unusable by Monday. Pack in a small insulated container (Styrofoam box, small cooler or insulated lunch bag), with one or more cool packs - it is important that samples be kept cool.

The delivery address is: Dr. Gary Johnson - NCL Testing/Research
320 Connaway Hall / 1500 Bouchelle Ave
University of Missouri
Columbia, MO 65211

DIAGNOSTIC and RESEARCH SAMPLING:

For definitive diagnosis and confirmation of NCL and for research analyses, dog owners or their veterinarians should contact Dr Martin Katz for instructions and a collection and shipping kit. Samples desired include whole blood, skin biopsies, and tissues obtained at the time of euthanasia. Kits need to be available to the veterinarian at the time of sample collection, so please request a kit as far in advance of when the samples will be collected as possible. Dr Katz can be reached by email at KatzM@health.missouri.edu, or by phone at 573-882-8480.

If you need clarification, or have any questions about any of these procedures, please contact Liz Hansen by phone (573-884-3712) or email (HansenL@missouri.edu).

CANINE NCL- DNA TESTING/RESEARCH

Breed _____

Individual Dog Information

ID code (lab assigned): _____

Blood – Tissue – other _____

Registered Name _____ Call name _____

Reg# _____ Birth Date _____ Sex? M – F Neutered/Spayed? Y – N

Sample Submission Date: _____ Color _____

Test/research requested: **Neuronal Ceroid Lipofuscinosis**

Owner: name _____ Veterinarian _____

address _____ address _____

cty-st-zip _____ cty-st-zip _____

phone (day) _____ phone _____

phone (eve) _____ _____

cell _____ _____

EMAIL _____

EMAIL _____

******Results are reported via email – please provide complete, legible email address!******

Report test results to (please circle): Owner Veterinarian Both

Does this dog exhibit any of the following conditions? (Please attach history for any Yes answer)

- | | |
|-----------------------------------|--|
| Y - N Allergies | Y - N Digestive difficulties |
| Y - N Arthritis | Y - N Heart Problems |
| Y - N Autoimmune Disorders | Y - N Hernia (where? _____) |
| Y - N Bite or Tooth Abnormalities | Y - N Reproductive Problems |
| Y - N Cancer / Tumors | Y - N Seizures |
| Y - N Cataracts / Vision Problems | Y - N Skin / Coat Problems |
| Y - N Deafness / Hearing Impaired | Y - N Skeletal Abnormalities (Hip Dysplasia, etc.) |
| other (please list on back): | Y - N Temperament Problems (shy, aggressive, etc.) |

See following pages for NCL-specific questions – please complete for ALL sampled dogs.

Please circle your response to the following;

- I am / am not willing to provide additional blood samples if needed for research.

- I will / will not consider donation of a tissue sample upon the death of this dog, and will discuss this decision with my veterinarian so that a notation is placed in my file.

I submit this sample and pedigree for the purpose of DNA research; I understand that the identity of dogs and owners participating in the research will not be revealed; and I have supplied complete and accurate information, to the best of my knowledge.

Signed: _____ date _____

Test fee \$65 dogs from breeds with confirmed NCL mutations (see instruction page). *There is no fee for breeds where no NCL test is confirmed, and submission is for research purposes.*

PAYMENT INFORMATION: Check or money order payable to “University of Missouri” enclosed

OR Charge to VISA-MC-AmEx-Discover Card# _____

Cardholder name: _____ Exp Date: _____

Canine NCL-specific Questionnaire

Has this dog been diagnosed as likely to be affected with NCL? Yes No Suspected

Have any relatives of this dog been diagnosed with NCL? Yes No Don't Know

If yes, which relatives? Sire Dam Sibling Offspring Other _____

Paternal Grandsire Paternal Grand-dam Maternal Grandsire Maternal Grand-dam

When is the best time to reach you by phone? _____

Veterinary Contact Information

Primary Care

Vet Name _____

Clinic Name _____

Address _____

City,St,Zip _____

Phone # _____

Email _____

Ophthalmologist

Name _____

Clinic Name _____

Address _____

City,St,Zip _____

Phone # _____

Email _____

Neurologist

Vet Name _____

Clinic Name _____

Address _____

City,St,Zip _____

Phone # _____

Email _____

Other Specialist

Name _____

Clinic Name _____

Address _____

City,St,Zip _____

Phone # _____

Email _____

May we have your permission to contact your veterinarians to request records and discuss your dog's health history, diagnostic testing, and possible treatment options? Yes No

Signed: _____ date: _____

Behavior and Activity survey follows – please complete for all sampled dogs

CHANGES IN BEHAVIOR

Compare this dog's current behavior to its earlier behavior. Please circle the correct answer.

If you need additional space to describe changes, please use back of form or attach additional pages.

	Normal - or - Degree of Change				Describe Changes & Age of Onset
1. Housetraining	normal	mild	moderate	severe	_____
2. Interest in food (eating habits)	normal	mild	moderate	severe	_____
3. Appears nervous	normal	mild	moderate	severe	_____
4. Interaction/socialization with other dogs	normal	mild	moderate	severe	_____
5. Aggressiveness to other dogs	normal	mild	moderate	severe	_____
6. Aggressiveness to people	normal	mild	moderate	severe	_____
7. Tolerance to grooming or bathing	normal	mild	moderate	severe	_____
8. Tolerance to being alone	normal	mild	moderate	severe	_____
9. Ability to recognize/respond to commands	normal	mild	moderate	severe	_____
10. Ability to recognize or respond to name	normal	mild	moderate	severe	_____
11. Recognizes you or other familiar people	normal	mild	moderate	severe	_____
13. Responses to noise/loud sounds	normal	mild	moderate	severe	_____
14. Development of compulsive behavior	normal	mild	moderate	severe	_____
15. Circling	normal	mild	moderate	severe	_____
16. Wakes you more at night	normal	mild	moderate	severe	_____
17. Inappropriate or persistent vocalization	normal	mild	moderate	severe	_____

CHANGES IN PHYSICAL ACTIVITY

Compare this dog's current physical activity to its earlier activity and ability. Please circle the correct answer. If you need additional space to describe changes, please use back of form or attach additional pages.

	Normal - or - Degree of Change				Describe Changes & Age of Onset
18. Climbing up or down stairs	normal	mild	moderate	severe	_____
19. Tremors or shaking	normal	mild	moderate	severe	_____
20. Seizures	normal	mild	moderate	severe	_____
21. Increased stiffness or weakness	normal	mild	moderate	severe	_____
22. Difficulty in movement or coordination	normal	mild	moderate	severe	_____
23. Changes in posture ("roached" back)	normal	mild	moderate	severe	_____
24. Tail carriage when alert & interested	normal	mild	moderate	severe	_____
25. Ability to see during the day	normal	mild	moderate	severe	_____
26. Ability to see at night in dim light	normal	mild	moderate	severe	_____
27. Head movements	normal	mild	moderate	severe	_____
28. Trance-like behavior	normal	mild	moderate	severe	_____
29. Bumps into objects, clumsy	normal	mild	moderate	severe	_____

Please describe any other health problems or behavioral abnormalities:
