Basset Hound Thrombopathia

Basset Hound Thrombopathia (BHT) was first described by Johnstone and Lotz in 1979. Since that time investigators at Cornell, Michigan State, and Auburn University have studied the disorder in affected and carrier Basset hounds in attempts to understand the functional, biochemical, and molecular bases for the disorder. The disorder is due to a congenital/inherited signal transduction defect in platelets. Platelets are small, circulating cytoplasmic fragments that are the first line of defense in stopping the flow of blood from injured blood vessels. An important aspect of platelet function is their ability to stick to each other and plug holes in damaged vessels until blood clotting and tissue repair can occur. The platelets of dogs with BHT are defective in their ability to stick to each other due to the inability of the platelets to transmit internal signals properly. Therefore, these individuals are at increased risk for spontaneous hemorrhage and they are also at high risk for excessive hemorrhage as a result of injury or surgery. Affected Basset hounds experience spontaneous mucosal type bleeding (including gingival bleeding, particularly during permanent tooth eruption, gastrointestinal bleeding, urinary tract bleeding, and nose bleeds), and petechial and ecchymotic hemorrhages of the skin (bruising that can range from small, pinpoint lesions to lesions as large as a half-dollar or larger) and hemorrhage at the tips of the ears secondary to trauma. Gastrointestinal bleeding may or may not be apparent. If bleeding is severe, the stools will appear black and tarry. Gastrointestinal bleeds can also be slow and insidious (microscopic and not visibly apparent) resulting in iron deficiency anemia with time.

For many years the disease could not be diagnosed without bringing dogs to a testing facility that specialized in studying platelet function disorders in animals. Although these methods were accurate in diagnosing affected dogs, the methods could not readily identify carriers of the disease. Carrier detection is vital in controlling spread of inherited defects and DNA testing is the only reliable method of detecting these animals. During the summer of 2006, the molecular basis for BHT was determined at Auburn University. A mutation was found in a gene that encodes for a signal transduction protein vitally important in transmitting signals that result in normal platelet aggregation and granule release. By using DNA testing, affected and carrier Basset hounds can now be identified by submitting a blood sample through the mail.

- ***Johnstone IB, Lotz F: An inherited platelet function defect in Basset hounds Can Vet J 20:211-215, 1979.***
- ***Catalfamo JL, Raymond SL, White JG, Dodds WJ: Defective platelet-fibrinogen interaction in hereditary canine thrombopathia. Blood 67:1568-1577, 1986.***
- ***Boudreaux MK, Dodds WJ, Slauson DO, Catalfamo JL: Evidence for regulatory control of canine platelet phosphodiesterase. Biochem Biophys Res Commun 140(2):580-594, 1986.***
- ***Boudreaux MK, Dodds WJ, Slauson DO, Catalfamo JL: Impaired cAMP metabolism associated with abnormal function of thrombopathic canine platelets. Biochem Biophys Res Commun 140:595-601, 1986.***
- ***Patterson WR, Estry DW, Schwartz KA, Borchert RD, Bell TG: Absent platelet aggregation with normal fibrinogen binding in Basset hound hereditary thrombopathy. Thromb Haemostas 62(3):1011-1015,1989.***
- ***Boudreaux MK, Catalfamo JL, Klok M: Calcium-diacylglycerol guanine nucleotide exchange factor I gene mutations associated with loss of function in canine platelets. Transl Res 150(2):81-92, 2007.***

Specimen requirements: At least 1ml EDTA whole blood (purple top tube). Do not cross contaminate samples during collection particularly if more than one dog is collected at the same time. Label all specimens clearly. Protect the tubes to prevent breakage during shipping. All methods of shipping are acceptable. Blood samples do not require ice.

Ship to: Hemostasis Laboratory, Peter W. Christopherson
166 Greene Hall
Auburn University, AL 36849-5519

Fee for testing: $125.00 (payment options listed below)

Make checks payable to: Auburn University, Department of Pathobiology
Credit Card payments accepted by phone: 334-844-2690
Wire transfers: Email chrispw@auburn.edu for wire transfer instructions

Hemostasis Laboratory
Department of Pathobiology
Dr. Peter W. Christopherson, DVM, PhD, DACVP
166 Greene Hall
Auburn, AL 36849-5519
PH: 334-844-2797 Fax: 334-844-2652
Email: chrispw@auburn.edu

OFFICE USE ONLY

Accession # _____

Date _____

HEMOSTASIS LABORATORY

Basset Hound Thrombopathia

Sample Date: _____ Age at time of sampling or Date of Birth: _____

Breed: _____ Sex: ☐ Male ☐ Female

Animal Name (Registered Name): _____

Animal Registration Number (if applicable): _____

Name of Sire (if applicable): _____

Registration Number of Sire (if applicable): _____

Name of Dam (if applicable): _____

Registration Number of Dam (if applicable): _____

PERTINENT HISTORY:

_____

☐ Please check this box if you would like to share the results of this test to the Basset Hound Club of America Health and Research Committee

I am hereby requesting this sample be tested for the mutation described as causing Basset Hound Thrombopathia in Basset Hounds. I understand that my individual test results will only be released to me. I certify that I am the owner of this dog. I understand and agree that the results of this test may be confidentially combined with those of other owners and used in aggregate result form for research purposes including publication. I understand in aggregate result form my individual results will not be identifiable specially to my dog. I release Dr. Christopherson and any associates working with him and Auburn University from all liability regarding this sample.

Owner's Signature	Owner's Printed Name	Date	Phone Number

OWNER'S INFORMATION

NAME: _____

ADDRESS: _____

CITY/TOWN: _____

PROVINCE: _____

POSTAL CODE: _____

COUNTRY: _____

PHONE: _____

VETERINARIAN'S INFORMATION
(BILLING INFORMATION)

REFERRING VETERINARIAN: _____

CLINIC: _____

ADDRESS: _____

CITY/TOWN: _____

PROVINCE: _____

POSTAL CODE: _____ COUNTRY: _____

PHONE: _____ FAX: _____

EMAIL: _____

FAX RESULTS: ☐ EMAIL RESULTS: ☐

RESULTS (if you would like the results sent to additional emails and/or faxes please list below):

EMAIL 1: _____ FAX 1: _____

EMAIL 2: _____ FAX 2: _____

SPECIMEN REQUIREMENTS: EDTA WHOLE BLOOD (1ML)
TURNAROUND TIME FOR RESULTS: TYPICALLY 4 TO 5 WORKING DAYS UPON ARRIVAL
HARD COPIES OF REPORTS AVAILABLE UPON REQUEST