

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
350 Greene Hall Annex
Auburn University, AL 36849-5519

Fee for testing: \$130.00 (payment options listed below)

Invoice payments are due within 30 days from the invoice date and can be made securely online:

<https://www.aub.ie/payinvoice>, by mailed check payable to: Pathobiology Diagnostic Services, or through wire transfer (email weldolm@auburn.edu for wire transfer instructions)

Questions regarding invoicing and/or payments: weldolm@auburn.edu



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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 INFORMATION		VETERINARIAN'S INFORMATION (BILLING INFORMATION)	
NAME		REFERRING VETERINARIAN	
ADDRESS		CLINIC	
CITY/TOWN		ADDRESS	
PROVINCE		CITY/TOWN	
POSTAL CODE		PROVINCE	
COUNTRY		POSTAL CODE	COUNTRY
PHONE		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 8 TO 10 WORKING DAYS UPON

ARRIVAL HARD COPIES OF REPORTS AVAILABLE UPON REQUEST