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Reference: Heartworm
detection



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Noninvasive heartworm detection in dogs

Auburn University is seeking a licensee or development partner for a noninvasive method and accompanying device for heartworm detection in dogs.

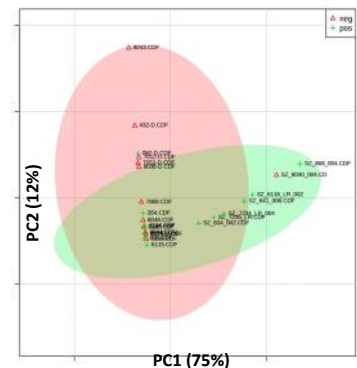
Overview: Canine heartworm disease is a serious and potentially fatal disease of the heart and lungs of dogs worldwide. A 22% increase in diagnosis of heartworm infection was observed between 2013-2016, and a 2017 forecast predicted still more increases to come. Most tests to detect heartworm require a blood sample, which may be stressful for pet owners and their dogs. Now there is a quick and painless way to check for heartworm without taking blood.



Advantages:

- **PAINLESS** - No blood is needed to test for heartworm
- **COMPANION TEST** - Can be paired with existing tests to confirm infection, if needed
- **RAPID** - Results obtained the same day

Description: Canine heartworm disease is caused by *Dirofilaria immitis*, a mosquito-borne pathogen that infects the heart and lungs of dogs, cats, and ferrets. Present in both developed and developing nations, this pathogen may infect up to 800,000 dogs in the US alone. Because it can be fatal, annual testing is recommended. Blood draws are currently used to detect adult and juvenile forms of the disease. This new method allows noninvasive sampling of breath volatiles in less than two minutes followed by gas chromatography to detect key compounds present only in infected animals. Testing can be completed during a typical veterinarian examination, allowing blood draws to be taken that same day for confirmatory testing, if needed. Alternatively, this test could enable the convenience of at-home/mail-in sampling by pet owners where captured breath volatiles are mailed to a lab for analysis.



Different volatiles in infected vs noninfected dogs. (Left) Breath is easily sampled and stored. **(Right)** Principal Component Analysis of volatiles from uninfected (red) and infected (green) dogs. A breath volatile “fingerprint” allows detection of infected animal.

Status:

- US (20220205878) and PCT patent applications have been filed
- Demonstrated *in vivo* in laboratory setting
- A development partner is sought to further develop a market-ready device and method
- This technology is available for exclusive or non-exclusive licensing

