# INTERVIEW WITH PROF. YOON OF JEJU VETERINARY UNIVERSITY

**I: Hello, Professor could you please introduce yourself?**

**Y:** Hello, I am Dr. Youngmin Yoon, a professor of Internal Medicine and Veterinary Medicine at Jeju National University. I'm also the director of the affiliated Animal Hospital. My responsibilities include teaching veterinary internal medicine and medical care for animal hospital.

**I: Which pathogen do you test the most at your lab? and, if you could tell us the amount of test performed and requested monthly?**

**Y:** Jeju's tropical climate make it a midway stop for migratory birds, providing opportunities for the introduction and habitat of various diseases and livelihood for vectors of these diseases. Babesia is the most common vector-borne disease in the country, there is demand for other vector-borne diseases such as Hepatozoon, Anaplasma, and Ehrlichia. Requests for testing are high from spring to fall, when ticks are most active, and occasional diagnosis are performed in winter. During the peak season, there are 20 ~ 30 cases of babesia per month.

**I: Previously you mentioned, in cases of vector-borne diseases (especially, babesia) that you perform Conventional PCR after performing M10. Is there a specific reason behind testing order?**

**Y:** We are currently conducting two tests simultaneously and comparing the results to verify the accuracy and reproducibility of the M10. Babesia is a tick-borne disease, it is a particularly acute illness that causes symptoms such as anemia. Therefore, it is important to quickly identify the cause and administer appropriate treatment. In Korea, Babesia gibsoni is the most common and the treatment is highly toxic, so there is a significant risk using it before confirming the diagnosis. If performance of M10 is confirmed, the test results will be available faster than with conventional PCR, making it clinically useful for faster treatment. We have conducted about 30-40 comparative tests so far, and the correlation with conventional PCR has been very high. Additional tests are being conducted to confirm these findings.

**I: What are the advantages of M10 compared to the Conventional PCR?**

**Y:** I think the device is very convenient for use in clinical settings as the entire process from nucleic acid extraction to amplification is automated, requiring only minimal steps (pipetting) compared to traditional methods. The device is user-friendly with simple instructions, making it easy for even inexperienced users to operate. The cartridge only requires a sample (100 µl of blood) to yield test results within an hour, which is highly useful for on-site clinical diagnosis. Additionally, the device is compact compared to traditional PCR machines and the necessary reagents can be stored at room temperature, making it highly convenient. I believe that in the future, the device can be widely used in general veterinary clinics, especially if more cartridges for detecting a wider range of pathogens become available. This could potentially cause a shift in the domestic PCR diagnostic market.

**I: For the past 4months you have experienced M10, would you recommend this product to labs, veterinary hospitals, or clinics?**

**Y:** Up until now, the diagnosis of various infectious diseases in clinical settings has been performed using rapid kits, such as distemper, COVID-19, parvo virus, babesia antibodies, and heartworm antibodies and antigens. For more accurate genetic testing, samples had to be sent to specialized testing institutions with appropriate equipment and personnel, and the process was complicated and time-consuming. However, M10 can directly test the desired sample on-site at any environment, allowing for quick results, making it suitable for urgent animal hospital situations. In general animal clinics, PCR testing requires transfer of sample to a laboratory or specialized testing institution, which takes several days to for the results. In contrast, the M10 can provide results in about an hour on-site, making it useful for patients requiring rapid diagnosis and treatment. If accuracy and reproducibility are confirmed, I am willing to recommend the M10 as a device for clinical use in animal hospitals.

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