TECH OFFER

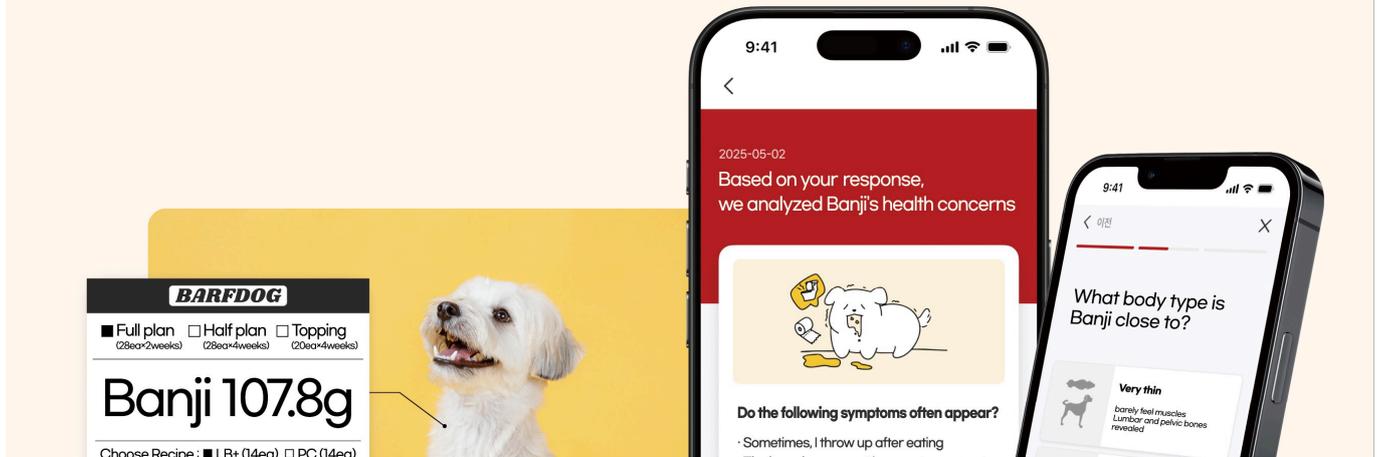## AI-Driven Pet Healthcare Platform Using Microbiome and PHR Big Data

Based on 1 million dog BIG DATA

AI Healthcare Diagnosis·Analysis Customized All-in-One Solution for pets

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KEY INFORMATION

TECHNOLOGY CATEGORY:

Foods - Ingredients

Healthcare - Diagnostics

Healthcare - Telehealth, Medical Software & Imaging

Infocomm - Artificial Intelligence

Infocomm - Big Data, Data Analytics, Data Mining & Data Visualisation

TECHNOLOGY READINESS LEVEL (TRL): **TRL8**
COUNTRY: **SOUTH KOREA**
ID NUMBER: **TO175368**

OVERVIEW

This technology offers an AI-powered healthcare platform that integrates pet personal health records (PHR) with microbial next-generation sequencing (NGS) data to assess disease risk and deliver tailored nutritional solutions. Unlike conventional pet health solutions that rely on visual symptoms or generic diets, this system utilizes multimodal deep learning to analyse microbial, clinical, and behavioural data, enabling early detection of chronic conditions. The system then prescribes custom-formulated, human-grade fresh pet meals based on diagnostic results. The entire process—from sampling and diagnostics to dietary formulation and subscription delivery—is fully automated. With over 1 million cases processed and multiple patents and publications, this solution aims to improve pet health, reduce veterinary costs, and enable personalized disease prevention at scale. The technology is first

targeted at dogs and the company is collecting additional data to expand to other domestic animals. The company would like to work with veterinary professionals/research institutes to discover biomarkers in other pets to improve in prediction of disease risks.

TECHNOLOGY FEATURES & SPECIFICATIONS

The technology is based on an AI-powered diagnostic engine that integrates gut microbiome next-generation sequencing (NGS) data with pet personal health records (PHR), including age, weight, clinical data, breed, and behavioural observations. It utilises a proprietary multimodal deep learning algorithm trained on over 5,000 microbial datasets, enabling the prediction of disease risks such as digestive disorders, kidney dysfunction, obesity, and metabolic imbalance.

The core service includes:

1. Home sampling kit for microbiome extraction and logistics.

2. AI diagnosis platform for analysing microbiome and PHR via cloud-based processing.

3. Dynamic diet generator, which translates diagnostic results into personalized meal plans.

4. Real-time subscription system that automatically updates food formulation based on health status changes.

The system is fully automated—from data collection and analysis to food production and delivery—offering seamless user experience without requiring veterinary intervention at each stage.

Differentiation lies in its standardized diagnostic algorithm, self-learning AI model, and closed-loop nutritional intervention, which are not offered by conventional pet food subscription services or diagnostic kits.

The solution is modular and can integrate with external systems such as veterinary electronic medical records (EMRs), wearable pet devices, and digital health platforms. It is optimised for deployment across web and mobile environments and is compatible with B2C and B2B (e.g., veterinary clinic) models. Its scalable architecture enables regional customisation of dietary recommendations based on ingredient availability and local veterinary standards.

POTENTIAL APPLICATIONS

This technology can be deployed in the pet healthcare, pet food, and veterinary services industries. It enables the commercialisation of:

- AI-powered health diagnostics tools for companion animals
- Customised pet nutrition products based on diagnostics
- Veterinary clinic-integrated digital diagnostic interfaces

Longitudinal PHR-based pet disease prediction services

MARKET TRENDS & OPPORTUNITIES

The global pet care market is projected to exceed USD 350 billion by 2030, with health and nutrition as key drivers. Demand for preventive, data-driven solutions is growing, particularly in aging pet populations. This technology uniquely captures the convergence of pet biotech, personalised health, and AI diagnostics.

UNIQUE VALUE PROPOSITION

This solution is the first to offer an end-to-end system that diagnoses pet health through microbial data and PHR and directly translates the results into customised meal prescriptions and delivery. Unlike existing products that generalise feeding or only track basic health metrics, this system integrates clinical, behavioural, and microbial information using AI for early-stage detection of obesity, digestive issues, kidney risks, and more. It is backed by multiple patents, peer-reviewed studies, and international collaborations, setting a new standard for personalised, preventive pet care.