Deep Bio to Present Cutting-Edge AI-Powered Research in Digital Pathology at AACR 2025

AI-driven biomarker quantification and cancer diagnostics research to be featured in multiple poster presentations

SEOUL, SOUTH KOREA, April 2, 2025 /EINPresswire.com/ -- Deep Bio, a pioneer in AI-powered digital pathology, will present new research at the American Association for Cancer Research (AACR) Annual Meeting 2025, highlighting the role of artificial intelligence in enhancing biomarker quantification and cancer diagnostics. The company's findings will be showcased in multiple poster presentations based on deep learning models for PD-L1 and c-MET IHC quantification and frozen-section lymph node diagnosis.

The studies demonstrate how AI-driven image analysis can improve biomarker assessment, enhance patient stratification, and support clinical decision-making in oncology.

One featured study explores AI-based quantification of PD-L1 staining intensity in non-small cell lung cancer (NSCLC). The research reveals a strong correlation between AI-driven PD-L1 intensity scores and clinically assessed Tumor Proportion Scores (TPS), underscoring the potential of AI in enhancing precision and reproducibility in immunotherapy biomarker evaluation.

Another study investigates the application of AI-estimated H-scores in c-MET IHC-stained whole slide images (WSIs), demonstrating a high correlation with pathologist-assessed scores and analyzing biomarker expression across different tumor subtypes. Deep Bio's AI technology provides precise, quantitative biomarker assessments by leveraging deep learning for fully quantitative biomarker assessment. It analyzes biomarker expression, cell morphology, and how they correlate with clinical data, offering new insights that could help identify novel biomarkers

in the future.

Deep Bio will also present a novel deep-learning model for cancer diagnosis in frozen-section sentinel lymph nodes, designed to operate effectively even with limited annotations. By integrating multiple instance learning (MIL) and a classifier-isolate training approach, the AI model significantly improves diagnostic accuracy and robustness, outperforming conventional fine-tuned models. These findings highlight the potential of AI-driven pathology solutions to standardize and enhance frozen-section cancer diagnosis, a critical area in intraoperative decision-making.

Deep Bio's proprietary DeepCDx Membrane IHC solution enables biomarker-agnostic, fully quantitative analysis that enhances biomarker interpretation and patient selection for targeted therapies. The company continues to push the boundaries of AI-powered pathology, offering cutting-edge solutions that drive precision medicine and accelerate drug development.

"These studies highlight the power of AI in cancer diagnostics," said Sun Woo Kim, CEO of Deep Bio. "By applying deep learning to biomarker quantification and histopathology, we can deliver precise, reproducible insights—improving the assessment of PD-L1, c-MET, and frozen-section diagnostics to support better treatment decisions."

Deep Bio's research will be presented during the AACR Annual Meeting 2025, with details as follows:

Poster Presentation Details
1. Artificial intelligence-based quantification of PD-L1 staining intensity in non-small cell lung cancer: Beyond binary assessment
Session: Artificial Intelligence for Digital Pathology and Spatial Molecular Technologies
Date & Time: April 28, 2025 | 9:00 AM – 12:00 PM
Location: Poster Section 45, Board #26
Presenter: Tae-Yeong Kwak (Primary Author: Yunseob Hwang)

2. Correlation analysis between AI-based H-score and clinical data in MET IHC-stained WSIs
Session: Artificial Intelligence for Digital Pathology and Spatial Molecular Technologies
Date & Time: April 28, 2025 | 9:00 AM – 12:00 PM
Location: Poster Section 45, Board #25
Presenter: Tae-Yeong Kwak (Primary Author: Hyeon Seok Yang)

3. Deep Learning Model for Cancer Diagnosis in Frozen Section Sentinel Lymph Nodes with Limited Annotations
Session: Single-Cell and Spatial Molecular Analysis
Date & Time: April 29, 2025 | 9:00 AM – 12:00 PM
Location: Poster Section 47, Board #20
Presenter: Tae-Yeong Kwak (Primary Author: Joonho Lee)

For more information on Deep Bio’s AI-powered digital pathology solutions, visit www.deepbio.co.kr or booth #846

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About Deep Bio

Founded in 2015, Deep Bio Inc. develops AI-powered solutions for cancer pathology diagnostics, utilizing advanced deep learning technologies to enhance diagnostic precision and pathologist efficiency. The company specializes in in-vitro diagnostic medical device software (IVD SaMD) that integrates data-driven insights to support clinical decision-making.

Deep Bio’s flagship AI solution, DeepDx Prostate, marked with European CE-IVD, processes Whole Slide Images (WSI) to accurately identify and segment cancerous lesions. The software provides comprehensive classification by Gleason pattern, precise tumor localization, and critical metrics such as Gleason score quantification and tumor volume assessment, which are essential for diagnosis, prognosis, and treatment planning.

This AI technology enables detailed analysis and reporting, supporting healthcare professionals with precise diagnostic insights. In 2024, Deep Bio was recognized for its innovation with the CES Innovation Award. The company remains committed to transforming pathology workflows and improving patient outcomes worldwide.

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