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February 12<sup>th</sup>, 2020

## **A Joint Clinical Research Collaboration among Tokyo Medical and Dental University (TMDU), ACT Genomics, and ACTmed Seeks to Investigate the Cancer Genomic Landscape of Japanese Population**

### **Summary**

- Tokyo Medical and Dental University (TMDU), ACT Genomics, and ACTmed launched a joint clinical research collaboration aimed to establish comprehensive genomic profiles of highly prevalent cancers within the Japanese population.
- TMDU Bioresource Research Center (BRC) provides tissue samples and clinical information collected from 2,000 cancer patients, and ACT Genomics and ACTmed are responsible for genomic mutation analysis regarding 440 cancer genes.
- The obtained data will be utilized to identify potential biomarkers for prognosis and predict treatment response.

Tokyo Medical and Dental University (TMDU), ACT Genomics (Taipei, Taiwan), and ACTmed (Japan) launched a joint clinical research collaboration aimed to establish comprehensive genomic profiles of highly prevalent cancers within the Japanese population. This retrospective study utilizes next-generation sequencing (NGS) technology to investigate biomarkers associated with solid tumors collected from 2,000 cancer patients in TMDU Biobank Project. The study is expected to lead to future development of safer and more effective drugs as well as new methods for diagnosis.

The study will interrogate genomic alterations of 440 genes involved in cancer development, treatment response, drug resistance, as well as the immune system using ACT Genomics' flagship cancer gene panel list, ACTOnco<sup>®</sup>+, to perform comprehensive genomic analyses. TMDU Bioresource Research Center (BRC, Director, Dr. Johji Inazawa) provides formalin-fixed paraffin-embedded (FFPE) samples and clinical information. A CAP-accredited laboratory in ACT Genomics and ACTmed (applying for CAP-accreditation) are responsible for sequencing and bioinformatics analysis. Genomic mutation patterns including mutation, copy number variation (CNV), microsatellite instability (MSI), and tumor mutation burden (TMB) will be integrated with

clinicopathological information. The obtained data will be utilized to identify potential biomarkers for prognosis and predict treatment response.

TMDU Medical Hospital and Dental Hospital are large hospitals that more than 500,000 patients visit a year. TMDU BRC was established in 2013 across the university to recruit and store biospecimens and clinical data from consented patients of TMDU Hospitals. Comprehensive informed consent has been obtained from 6,500 patients, and over 15,000 high quality biospecimens, including genomic DNA from peripheral blood or saliva, serum, fresh frozen tissue samples and FFPE tissue samples, have been stored as of September 2019. The detailed clinical information of those bioresources on BRC server is safely managed and regularly updated from the Electronic Medical Record System. A sample search system has also been organized, and the samples are available for distribution for research purposes to both internal and external researchers with appropriate approval from Institutional Review Board (IRB). This three-way collaboration will accelerate not only local precision medicine services but also facilitate multinational collaborations.

#### About ACT Genomics

ACT Genomics has been offering tumor profiling and clinical services using its proprietary designed cancer gene panels in Asia since 2014. The company has implanted its AI-enabled bioinformatics pipeline translating complex sequencing data into useful medical interpretations to guide cancer treatment and clinical trials. Integrated genomic databases with Asian specific genome profiling can be used to build the foundation for precision cancer medicine for the Asian population through this research collaboration.

#### About ACTmed

ACTmed is a joint venture company established by ACT Genomics and Canon Medical Systems Corporation in 2018, providing clinical sequence services in Japan. Technology introduction from ACT Genomics expedites the progress in Japan towards the establishment of genomic profiling and precision medicine.

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