

28AB-ISMS14 **Therapeutic RNA Aptamer Discovery**

○Yosuke NONAKA¹, Ling JIN¹, Masatoshi FUJIWARA¹, Shin MIYAKAWA¹, Yoshikazu NAKAMURA¹
¹RIBOMIC Inc.

Aptamer is a folded single-stranded nucleic acid that binds given molecules. The concept is based on the ability of short (20-80 mer) sequences to fold, in the presence of a target, into unique three-dimensional structures, which allow the aptamer to bind target molecules with high affinity and specificity. We have been engaged in creating therapeutic RNA aptamers for unmet medical needs using the RiboART system for Ribomic Aptamer Refined Therapeutics. Aptamers hold several pharmaceutical advantages compared to antibodies such as chemistry-based engineering, a medium size between antibodies and small molecules, chemical synthesis, production cost, and little antigenicity. Currently RIBOMIC is developing eight programs in pre-clinical stages. Of these, we will present an RNA aptamer to fibroblast growth factor 2 (FGF2) from its discovery stage to the in vivo animal model study, demonstrating a promising approach to the treatment of bone diseases and bone cancer pain.