

28AB-ISMS13 **Novel Approach for Oligonucleotide Therapeutics Development Focused on Manufacturing and Structure Improvement**

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Oligonucleotides which constitutes nucleic acid drug, are provided by chemical synthesis. Currently, we have several manufacturing track records for investigational drugs of nucleic acid drug under the GMP compliance. All these batches were synthesized by solid phase synthesis which is well established organic chemistry but it is limited for scalability and cost effectivity. To overcome this issue, we have been co-developed liquid phase base oligonucleotide synthesis chemistry called AJIPHASE® originated by AJINOMOTO. Comparison data between solid phase and AJIPHASE® showed that two methods is equivalent for impurity profile and purity. This result is one of breakthrough of cost effective nucleic acid drug development. Other approach for improving is structure modification to change high efficacy nucleotide acid drug. Based on this consideration we have invented two novel structures. One is miRNA inhibitor called “High efficient S-TuD” and the other is immune modulator soluble A-type CpG ODN. We would like to introduce these results in this presentation.