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Poster Sessions

Generation of specific aptamers targeting MRGPRX2 using synthetic proteoliposomes

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Mas-related G protein coupled receptor-X2 (MRGPRX2) is a novel G protein-coupled receptor with unique features including selective expression and response to peptidergic drug-induced activation in mast cells. With the aim of inhibiting MRGPRX2-dependent mast cell activation, a specific functional aptamer was generated using the proteoliposome-based systematic evolution of ligands by exponential enrichment. After multiple cycles of selection and evolution, potential functional aptamers with high affinity and specificity were selected by binding assay and functional screening and enriched for sequencing. Several aptamers showed dose-dependent inhibitory potency on MRGPRX-dependent mast cell activation. The feasibility and efficacy of these aptamers on drug-induced anaphylactoid reactions will be investigated in our future planned study.