

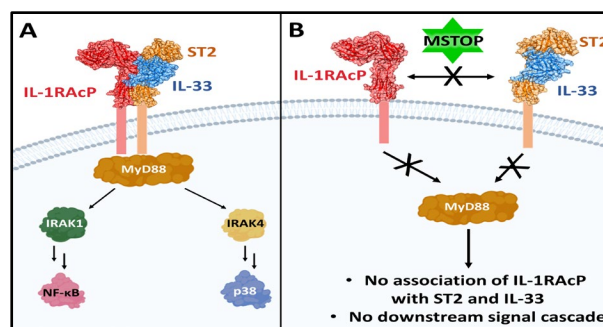
PRECISION-POWERED PEPTIDES: UNLOCKING NEW FRONTIERS IN CANCER IMMUNOTHERAPY

MSTOPs are a groundbreaking platform designed to disrupt protein-protein interactions in cancer immunotherapy. Utilizing nanoscale DNA scaffolds, MSTOPs position multiple peptides with precise spatial orientation, increasing their affinity and specificity for complex molecular targets. This novel approach provides a targeted and effective solution for inhibiting immune evasion mechanisms in breast cancer, specifically by focusing on the IL-33/ST2/IL-1RAcP complex, a critical player in suppressing immune responses.

Key Features

- **Multivalency for Enhanced Targeting:** Multiple peptides tethered to DNA scaffolds engage with distinct protein hotspots, improving both specificity and binding strength
- **Nanoscale Precision:** DNA origami scaffolds allow for customizable shapes and sizes, perfectly aligning peptides with target protein surfaces
- **Cancer Immunotherapy:** Focused on inhibiting the IL-33/ST2/IL-1RAcP complex, which is key to immune suppression in breast tumor microenvironment
- **Protein Painting for Hotspot Discovery:** A proprietary technique that maps protein interaction sites rapidly, enabling efficient peptide design
- **Improved Therapeutic Potential:** Offers a new modality for overcoming the limitations of monoclonal antibodies, with lower costs and enhanced tissue penetration

MSTOPs represent a revolutionary approach to cancer immunotherapy, offering a precise and potent disruption of protein-protein interactions to overcome immune suppression in the tumor microenvironment.



Disruption of the IL-33/ST2/IL-1RAcP complex disrupts downstream signaling. A) IL-1RAcP binds as a co-receptor to IL-33 and ST2, allowing for downstream inflammatory signaling through NF-κB and MAPK pathways. B) Disruption of IL-1RAcP/ST2/IL-33 complex prevents signaling.

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