GEORGE MASON UNIVERSITY

PROTEIN PAINTING TECHNOLOGY

GMU-19-008

PROTEIN PAINTING: UNVEILING DRUG TARGETS WITH PRECISION

Protein-protein interactions (PPIs) are critical for many biological processes and represent promising drug targets. However, targeting PPIs with small molecules is challenging due to their larger, featureless interfaces. Protein Painting Technology revolutionizes drug discovery by mapping protein interaction hotspots without the need for crystallographic structural data. This novel dye-based technique rapidly identifies binding sites, paving the way for the development of peptide-based inhibitors and small-molecule therapeutics.

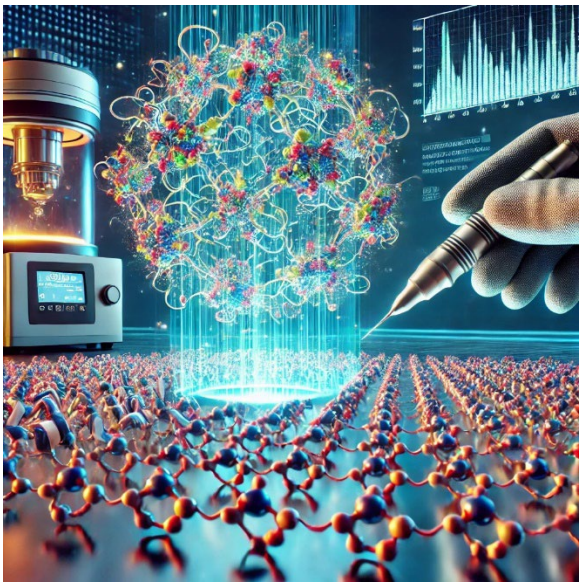
- ☑ **Rapid PPI Mapping –** Identifies interaction hotspots in proteins under physiological conditions.
- ☑ **Universal Dye System –** Utilizes the optimized **FBBNA dye**, which binds diverse protein complexes with high affinity, eliminating time-consuming screening steps.
- ☑ **Accelerates Drug Discovery –** Guides rational design of inhibitors even in the absence of complete structural data.
- ☑ **Proven Case Studies –** Successfully identified drug-like peptide inhibitors for **PD-1/PD-L1** (Immune checkpoint blockade) and **Hippo pathway proteins** (cancer and wound healing).
- ☑ **Broad Application –** Applicable in oncology, regenerative medicine, and therapeutic development.

Applications

💊**Cancer Therapy Development –** Guides small molecule and peptide inhibitor design for key signaling pathways.

💉**Pharmaceutical & Biotech Research –** Accelerates identification of novel drug targets.

🔬**Academic & Industrial Labs –** A powerful tool for studying PPIs in various diseases.



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