2024/03

Discovery research

INOMIXO Inc.

Points :

* Target based drug discovery
* Phenotypic drug discovery
* Target engagement
* Off target

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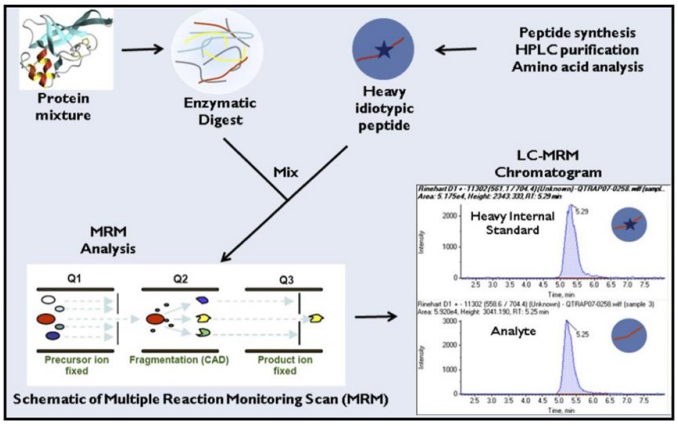
Proteomics based method

Proteomics plays a key role in the early research of drugs, and has the advantages of high efficiency and high accuracy in the identification of targets. By comparing the differences in the expression levels of the whole proteins between the drug-added group and the control group, and analyzing the proteins of these differences in bioinformatics, we can find out the effects of the drug on the physiological functions of cells, which can help to deepen the understanding of the use and mechanism of action of the drug.

At the same time, in the search for drug targets, proteomics can effectively enrich the proteins interacting with drugs through competitive experiments, and identify the target proteins through mass spectrometry, which is currently unachievable by traditional biological means. Proteomics can not only identify drug targets, but also further explore the effects of drug-target interactions on protein-protein interactions.



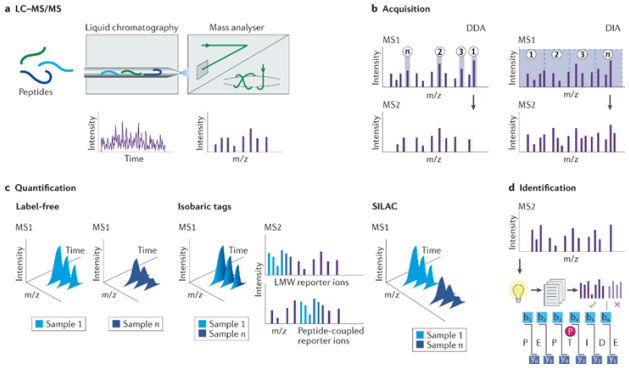
Schematic of Multiple Reaction Monitoring Scan (MRM)

Target engagement

some small molecule drugs require covalent binding to proteins before they can be effective, such as binding to free cysteine. Whether the drug binds effectively to the target protein and where the binding site is located are both critical. Competitive experiments were conducted using probes targeting cysteine to compete with drugs, monitoring the peptide bound to the drugs. Based on the administered concentration and the intensity of the target peptide, the status of drug targeting can be reflected.

Quantitative proteomics

We can provide a variety of proteomic analysis methods.
1. General LCMSMS analysis, including DDA and DIA technologies. Of the two analysis methods, DIA technology can obtain relatively more protein identification quantities.
2. Quantitative proteomics technology, we can provide label-free technology and TMT analysis technology. The two differ in cost and number of analysis channels.
3. In quantitative proteomics, if your biology platform can be selected in SILAC labeled culture. We can also provide more accurate relative quantitative comparison data.
4. In the case that isotope polypeptide standards are available, we can obtain absolute quantitative results of proteins by internal standard.



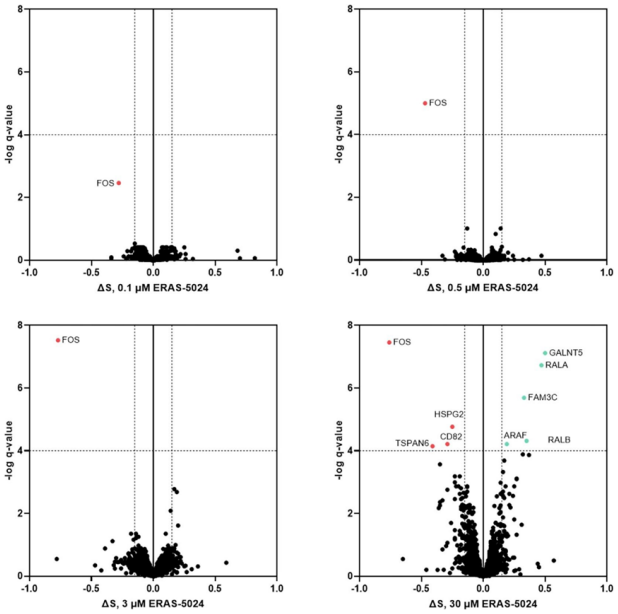
"We provide you with all the proteomics development laboratory services you need in drug development"

Off-target of PROTAC

Proteomics is very suitable for off-target studies of protac drugs, because it is possible to see the fold changes in the expression of global protein profile in the samples, and by comparing the different proteins between the drug group and the control group, potential off-target proteins can be found, which can then be verified by western blot or other techniques. In addition, the ubiquitinated proteome can also be used to find off-target proteins. By adding MG132 or other proteasome inhibitors, and then adding protac, and enriching the ubiquitin-modified peptides with ubiquitinated antibodies after enzymatic digestion, comparing the drug-added group with the control group, not only can we find the potential off-target proteins, but we can also identify the ubiquitin binding sites.

Off-target of PROTAC

Using quantitative proteomics technology, we can comprehensively analyze the off target judgment in the early development of PROTAC and other drugs.



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INMIXO is an innovative company dedicated to providing multiomics solutions in the field of life sciences. By integrating AI big data with advanced mass spectrometry multiomics tec hnology, along with our team of experienced R&D expertise, INOMIXO has developed two pr imary business segments, academic omics services and biopharmaceutical CRO services, creating a business landscape that provides solid, professional, and cutting-edge omics solutions for developing life sciences.

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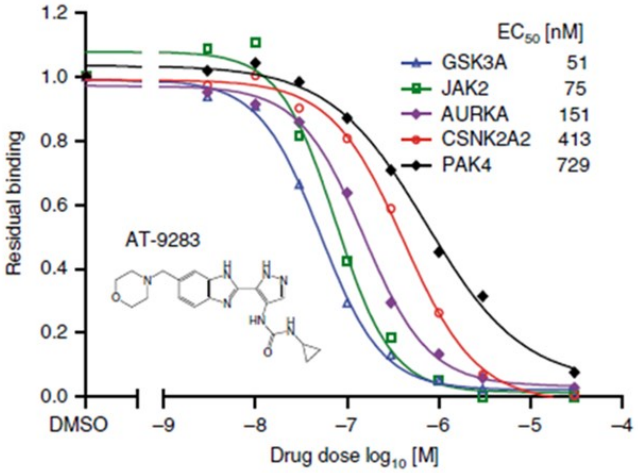

Proteomics service

INOMIXO offers a diverse range of proteomics qualitative and quantitative analysis services, which hold significant scientific importance in the field of biomedicine. The majority of these services are conducted on our LCMSMS platform. In contrast to traditional early-stage pharmaceutical development, the biomedical sector has experienced rapid growth in recent years with advancements in gene editing, PROTAC, and ADC drugs. Our LCMSMS platform, primarily utilizing high resolution mass spectrometry, can effectively complement early drug development by providing insights into the mechanism of action (MOA) for biopharmaceutical companies. We deliver cost-effective proteomics services that align with the requirements of the pharmaceutical industry.