Activity-Based Probes with Unnatural Amino Acids to Monitor the Proteasome in Live Cells

Highly sensitive fluorescent sensors for cellular protein degradation enable efficient drug screening and real-time monitoring of therapeutic activity in live cells.

Researchers at Purdue University have developed a set of activity-based probes which have shown improved fluorescence properties and selectivity towards the proteasome compared to other cellular proteases. They have included unnatural amino acids and have found probes which can be utilized in various applications, including monitoring the effects of small molecule stimulators of the proteasome in live cells and comparing the relative proteasome activity across different cancer cell types.

Advantages:

-Improved Proteasome Sensitivity

-Cell-Based Assay Compatibility

Potential Applications:

-High throughput assays

-Finding Proteasome Stimulators and Inhibitors

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