Higher throughput techniques for PROTAC drug discovery

PROteolysis-TArgeting Chimeras (PROTACs) are an exciting development in drug discovery with the potential for modulation of targets that have historically been considered ‘undruggable’.

A PROTAC is designed with two small molecule ‘warheads’, one binds to the protein target of interest (TOI) and the second binds to an E3 ligase. The two are joined by a flexible linker which helps the E3 ligase to ubiquitinate the TOI - targeting it for degradation by the body’s intracellular ubiquitin proteasome system.

However a bottleneck exists in the relatively slow throughput of the methods that are traditionally used to discover and assess the performance of new PROTAC molecules. Higher throughput methods are needed to help identify novel warhead molecules against both TOIs and E3 ligases and then to assess their efficacy of target degradation in cells.

At Aurelia Bioscience we use several such higher throughput techniques to improve the efficiency and outcomes of our clients’ PROTAC discovery projects – from biophysical based methods to automated Western blotting.