Advanced High-throughput Platforms for Protein Crystallography

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In recent years, the area of protein crystallization has been subject to fundamental developments. The demand for sophisticated and diversified platforms, especially with regard to optical properties, multiple screening capabilities, and suitability for small sample volumes, has resulted in the creation of highly specialized, multifaceted products to meet the diverse requirements of automated highthroughput approaches. Combined with additional necessities for more efficient drop inspection and analysis, these technological advancements have initiated the development of microplates with low birefringent background (LBR plates) to allow more effective use of polarized light in protein crystal detection. LBR plates are especially beneficial for identification of crystals out of focus, very small microcrystals, microcrystals hidden in or resembling precipitate or phase seperation and crystals located at the edge of droplets or crystallization wells.

As an alternative to classical microplates, plastic microstructured devices for liquid-liquid diffusion crystallography offer the benefits of low protein and reagent consumption, ease of handling and time conservation. Further advantages of plastic microstructures devices are a broad selection of available raw materials and surface treatments as well as reasonable costs of manufacture.

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