Ionic Liquid Screen - 0.5 ml, tube format - 0.5 ml

- Manipulate sample-sample & sample-solvent interactions to improve crystals or alter sample solubility
- Additive screen for protein crystallization

Product codes:

Reference: HR 2214

Product gallery:

Product description:

- 24 unique ionic liquids
- 0.5 ml tube format

Ionic Liquid Screen is a kit designed to allow the rapid and convenient evaluation of 24 unique ionic liquids and their ability to influence the crystallization of the sample. The screen is designed to be compatible with most crystallization reagents including all reagents utilized in all of the Hampton Research screens.

Ionic liquids have been found effective as additives in protein crystallization, with different ionic liquids used to increase crystallization rates and crystal size.1-4 The inclusion of ionic liquids in crystallization experiments has been reported to lead to less crystal polymorphism as well as less precipitation at higher precipitant concentrations.25 Ionic liquids have been used as additives to produce crystals in reagents that had previously not resulted in crystallization and results suggest ionic liquids may be applicable for the solubilization and crystallization of membrane proteins.2

Ionic liquids are organic salts with melting points below 100°Celsius. They are thermally stable, nonflammable and demonstrate very low vapor pressure. Ionic liquids are soluble in a variety of

organic and inorganic reagents and can be highly water soluble. Ionic liquids can demonstrate a degree of localized structuring about each ion compared to materials composed of disassociated ions, setting them apart from salt solutions.5-6 Ionic liquids can participate in ionic, hydrophobic and hydrogen bond interactions. Ionic liquids are often chaotropic, composed of low symmetry ions with charge delocalization and weak intermolecular interactions.1 These organic salts generally consist of combinations of organic cations and either an organic or inorganic anion. Ionic liquids have been demonstrated to suppress protein aggregation and significantly increase protein folding yields.7-8 Ionic liquids have been reported to stabilize protein activity and structure.9-11 The inclusion of the ionic liquid 1-n-Butyl-3-methylimidazolium tetrafluoroborate (included in this kit) improved the thermal stability and solubility of integral membrane proteins for membrane proteomics study.12

Some ionic liquids, such as ethylammonium nitrate have water-like characteristics, including the capacity for hydrogen bonding and the promotion of micelle formation by some surfactants.13 Many ionic liquids are also organics acids and have ionic character in addition to the hydrophobic behavior, which makes them unique and useful solvents in protein chemistry.

Variation of the anion and the cation as well as the utilization of both soft (formate and acetate) and hard anions (nitrate) in the Ionic Liquid Screen reagents provides an additional dimension for evaluating the effects on ionic liquids on the solubility and crystallization of proteins. The Ionic Liquid Screen contains a set of 24 water soluble ionic liquids that comprise different cation (imidazolium, phosphonium, ammonium) and anion (borate, halides, sulfates, acetates, sulfonates, nitrates) structures for a diverse ionic liquid additive screen for use in improving the crystallization behavior and X-ray diffraction resolution of proteins.

Each of the 24 ionic liquids are preformulated in deionized water and sterile filtered using a 0.2 micron filter. Ionic liquid Screen contains 24 unique reagents, 0.5 milliliter each.

Per maggiori informazioni visita il sito https://hamptonresearch.com/

Product features:

CRF - TIPO: Ionic Liquid Screen