

Product Data Sheet

Detergent Screening Kit

Catalog Number: 0601

Product Description

The AthenaES™ Detergent Screening Kit is intended for use in protein refolding applications. Detergents have been shown to aid in the protein refolding process of both native and recombinant proteins. Numerous observations have demonstrated that some proteins will fold into their correct structure in the presence of detergent. However, no single detergent has proved to be suitable for all proteins. This requires that the best detergent for any given protein be determined empirically.

Athena's Detergent Screening Kit provides researchers with 6 common detergents (10mL each), which have been shown to affect protein refolding, for determining the optimum detergent for a given protein refolding scenario. The kit permits the identification of the best available detergent for a given target protein in a rapid screening format. Individual detergents can also be purchased in 100mL quantities.

Detergents are usually used as a step in the protein refolding process, often in conjunction with cyclodextrins. The detergent binds to the protein in the dilution stage to form a detergent-protein complex which prevents aggregation of the protein. A binding agent, such as cyclodextrin, can then be used to strip away the detergent from the protein, allowing it to properly refold. For this step in the protein refolding process, AthenaES™ offers a Cyclodextrin Screening Kit, as well as individual cyclodextrins.

Instructions for Use

The following algorithm is recommended when screening detergents for their utility in refolding a specific protein:

1. Perform a screen to determine the best buffer conditions for protein refolding. A complete optimization is not necessary, but a buffer composition which gives some level of refolding is important. The critical parameters that should be examined include: pH, ionic strength, excipients (i.e., detergents, polyols, chaotropic agents), redox state, temperature, and protein concentration. Refolding can be done by dilution, dialysis, or immobilization on a resin. Several commercial kits are available, such as Athena's Protein Refolding Kit (Cat. No. 0600), which simplify the screening process by providing pre-mixed buffers along with straightforward statistical analyses of the results. A detailed method can be found in the AthenaES's Protein Refolding Kit Applications Manual at www.athenaes.com.
2. Perform the refolding using the base buffer conditions identified in step 1, by preparing six buffers each containing a different detergent of the Detergent Screening Kit. A starting concentration of 5 mM is recommended. The Detergent



Athena Enzyme Systems™
1450 South Rolling Road
Baltimore, MD 21227
USA
a division of Athena Environmental Sciences, Inc.

T (MD): 410-455-6319
T (USA): 888-892-8408
F: 410-455-1155
aesinfo@athenaes.com

Product Specifications

| | |
|-----------|--|
| Unit Size | 1 Kit |
| Storage | Store at Room Temperature DO NOT FREEZE |

Kit Contents

| Reorder No. | Component | Amt. |
|-------------|------------------------|------|
| 0603 | 100mM Triton-X | 10mL |
| 0604 | 100mM Tween 80 | 10mL |
| 0605 | 100mM CTAB | 10mL |
| 0606 | 100mM POE(10)L | 10mL |
| 0607 | 100mM TTAB | 10mL |
| 0608 | 100mM Zwittergent 3-14 | 10mL |

Material Safety Data

FOR RESEARCH USE ONLY. NOT INTENDED OR APPROVED FOR HUMAN, DIAGNOSTICS OR VETERINARY USE. Do not ingest, swallow or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. For complete safety information see full Material Safety Data Sheet.

Screening Kit can be used in conjunction with the Cyclodextrin Screening Kit (Cat. No. 0602).

3. Once the best detergent has been identified (i.e., the detergent which yields the highest recovery of refolded protein) the optimum concentration can be determined using a range finding experiment.

Material Safety Data

FOR RESEARCH USE ONLY. NOT INTENDED OR APPROVED FOR HUMAN, DIAGNOSTICS OR VETERINARY USE. Do not ingest, swallow or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. For complete safety information see full Material Safety Data Sheet.