RUO Cytokine FAQ

The relevant information relating to each product appears on the Certificate of Analysis that is shipped with the product. Please read this information carefully to obtain useful instructions for reconstitution and storage. If, after reading the CoA, you need additional information, please review the following set of questions and answers, or call our technical service department at 800-436-9910.

1. What should I know about the stability of your protein products?

Unless otherwise mentioned on the product information sheet, all of our products are formulated in such a manner that the lyophilized proteins are very stable at room temperature. However, we recommend storing lyophilized products at -20°C to -80°C.

For reconstituted solutions of most products, we recommend short-term storage at 4°C. For longer term storage, the protein solution should be stored with a carrier protein (e.g. 0.1% BSA) in working aliquots and stored frozen at -20°C to -80°C. Aliquots should be prepared to concentration no lower than 1μg/ml or to a volume no lower than 10μl independent of concentration.

Please keep in mind that every freeze/thaw cycle may cause some denaturation of the protein.

2. What endotoxin level should be expected when purchasing PeproTech proteins?

For PeproTech’s Animal-Free proteins, the endotoxin level is guaranteed to be less than 0.01 ng/μg of protein or 0.1 EU/μg. For most of PeproTech’s non-Animal-Free proteins the endotoxin level is guaranteed to be less than 0.1 ng/μg of protein, or 1 EU/μg. However, for many proteins, the actual measured endotoxin values are consistently below this stated endotoxin level. Please contact our technical service department for more information.

3. Why can’t I see the protein pellet in the vial?

Unlike many protein products available on the market, PeproTech products are not formulated with carrier proteins or other additives (e.g., BSA, HSA, sucrose, etc.) and are often lyophilized with a minimum amount of salt. As a result, the small amounts of protein can be deposited on the vial during lyophilization as a thin and sometimes invisible film. Before opening, we recommend centrifuging each vial in a microcentrifuge for 20-30 seconds to drive any protein that may be lodged in the cap or on the side to the bottom of the vial. Our quality control procedures assure that each vial contains the correct amount of product.

4. What is the relationship between the specific activity expressed as an ED_{50} and as units/mg?

The ED_{50} is defined as the cytokine concentration at which the activity is 50% of the maximum response. This method of expressing potency should only be used for cytokines whose dose-response curves are sigmoidal in shape. The formula for converting the activity as an ED_{50} in ng/ml to specific activity in units/mg is:

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\frac{1 \times 10^6}{ED_{50} \text{ (ng/ml)}} = \text{specific activity (units/mg)}
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5. Which cytokines show cross-species activity?

With a few exceptions, most human cytokines are active on mouse cells. Many mouse cytokines are active on human cells, but may show lower specific activity than the corresponding human cytokine. A few human cytokines, such as IL-7, even exhibit higher specific activities on mouse cells than do the corresponding mouse cytokines. The interferons, GM-CSF, IL-3, and IL-4 are known to be species-specific with very little, if any, activity on non-homologous cells. In contrast, the FGFs and neurotrophins are very highly conserved and show excellent activity on cells of other animal species.