ALPHA DIAGNOSTIC
INTERNATIONAL

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A large number of genes have been cloned and expressed in various host cells (E. coli, yeast, baculovirus, NSO, Sp2/0, HEK, CHO cells). Recombinant proteins can either be secreted into the culture medium or remain inside the cells. The target recombinant proteins, with or without a tag (His, GST, MBP etc), must be purified to remove most of the unwanted, majority of the host cell's protein (HCP). The traces of HCP present in the purified material do not represent a major problem for proteins that are used for in vitro or research use applications. However, many recombinant proteins are used for therapeutic purposes (Insulin, Erythropoietin, GM-CSF or humanized antibodies such Rituximab, Xolair rec), where the presence of HCP may be potentially toxic, allergic or create other health hazards. Therefore, it becomes necessary to determine the residual concentration of the HCP in the final recombinant material. Typically, ELISA & Western methods are used to determine concn of HCP in the samples. Western blot provides the nature (mol wt of the protein) of the contaminant and offer some idea about its concentration. This technique has limited used due to long assay, low sensitivity, and difficulty in processing large number of samples. ELISA, on the other hand, overcomes the limitations of the Western blot assay. Since the processing the recombinant cells are different for each protein, it is difficult to predict what contaminant(s) will remain at the end of the process. It is possible that the major HCP are eliminated by certain purification protocol but other less abundant proteins may not. The detection method is based upon the use of antibodies. **The most dominant proteins may not be immunogenic or less abundant may not be represented in the antigen mix.** In addition, animals (goat, rabbit, or chicken) may make better antibodies to certain HCP protein. In short, the issue of residual HCP and the applicable detection methods are complex and they must be addressed specific to a given recombinant protein and the applicable purification protocol.

ADI is the first company to address these issues.

We have used high avidity and high titer multi-host (Rabbit, Goat, and Chicken) anti-E. Coli HCP to offer the best recognition to E.coli HCP. Moreover, we have used a blend of 6 different commonly used E. coli strains to make antibodies. Therefore, this kit can be used to detect E. coli HCPs in most E. Coli based expression. Anti-E. coli antibodies have also been further characterized by SDS-PAGE, Western blot, and ELISA to detect HCPs in most common E. coli strains. ADI's E. Coli cell HCP ELISA kit is the most advanced, versatile, well characterized, and highly sensitive ELISA kit available in the market. **ADI's E. coli HCP ELISA kit employs the most versatile and well characterized antibodies .**

Click Here to read more about the HCP E.Coli kit specifications & relevant details ….

Likewise we have used high avidity and high titer multi-host (Rabbit and Goat) anti-CHO HCP (secreted into the culture medium and the total cellular proteins) to offer the best recognition to CHO HCP. Antibodies have also been further characterized by SDS-PAGE, Western blot, and ELISA to detect both secreted and non-secreted proteins. **ADI's CHO cell HCP ELISA kit is the most advanced, well characterized, and highly sensitive ELISA kit available in the market.**

Click Here to read more about the HCP CHO kit specifications & relevant details ….

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Besides the above, two major proteins – Protein A & Protein G are very common contaminants. Detection of these proteins with or without IgG is a routine QC process for man vaccine producers and bio-producers. The following are the web links for Protein A and Protein G detection kits.

Protein A ***Protein G***