
Preface

Immunochemical techniques have been in use for many years with early examples of bacterial strain typing dating back to the 1940s. The basis for the science is the exquisite elegance of the mammalian immune system with its ability to recognize foreign proteins and to manufacture antibody molecules that strongly bind to the substances that elicited them. Not only are potentially harmful pathogens and toxins recognized by the immune system, but the system can be persuaded to manufacture antibodies to an astonishing array of substances.

In the early days of this science, all antibodies for investigative work were produced by immunizing mammals with the substance of interest, followed by regular donor bleeds that yielded antisera. Serum produced in this way yields heterogenic populations of antibody molecules recognizing different epitopes on the target protein, which may be adequate for its intended purposes, but can also cause problems of crossreactivity. In 1975, Kohler and Milstein reported that spleen cells from immune donor animals could be immortalized, cloned from single cells, and grown in continuous culture. This original work described the method for the production of monoclonal antibodies.

The development of techniques based on antibodies has increased across the years and the routine use of them is now commonplace in many kinds of diagnostic and other investigative work. Workers new to the science may find the array of techniques and reagents bewildering, and this third edition of *Immunochemical Protocols* seeks to provide both the basic methods for producing and using antibodies along with some advanced protocols that will prove especially valuable to the more experienced worker. It provides full details of methods for antigen selection and preparation, antibody production, reagent manufacture, as well as protocols covering many of the areas where immunochemical techniques are used. Each protocol has been written by an investigator who has precise, practical knowledge and hands-on experience of the individual technique. Chapters contain detailed background to the use of the method, step-by-step instructions and a Notes section based on the authors' practical experience.

Immunochemical Protocols, Third Edition should provide workers with limited experience of antibody technology a broad array of protocols immediately of use in the laboratory. Experienced workers will find details of

alternative methods to those being currently used by them, and should also find new techniques that they may wish to use for their investigative work.

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