

# Preface

ELISA: From A to Z was written aiming to provide Readers with a proper coverage of all aspects of ELISA from fundamentals of immune system and the history of the analytical assay prior to the invention of ELISA to the materials of choice for fabrication of the platforms, possible biomolecular interactions, different protocols, and evaluation parameters among the rest. This book guides Readers through different steps of the analytical assay while familiarizing them with the possible sources of error in the assay. The book offers detailed insights on the immobilization techniques used for protein attachment, different methods for evaluation of the assay and calculation of the key important parameters in the analytical assay such as sensitivity, specificity, accuracy, and limit of detection. Advantages and shortages of the conventional ELISA as well as different attempts for improvement of its performance are covered in this book. Merging and intergrading different technologies with widely known ELISA have opened numerous windows of opportunity to the advancement of this immunoassay. In that respect, the current book provides the latest updates on integrated platforms such as ELISpot, plasmonic ELISA, sphere-/bead-based ELISAs, paper-/fiber-based ELISAs as well as ELISA in micro-devices.

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