Immuno Technology

?The Immunotechnology-based techniques will be used in the medicine for therapeutics anddiagnostics, industries in the production, quality control and quality assurance, and in R&D. Immunotechnology, is an important arm of biotechnology, constituting the industrial scale application of immunological procedures to produce vaccines, for mass immunisation to prevent prevalent diseases and/or producing immunological therapeutic agents to cure the afflicted.

Application:

Protein microarrays represents a novel technology for multiplexed, high-throughput analysis of crude, complex samples, such as blood, tissue, and cell extracts. In these methods, up to thousands of proteins (e.g. antibodies) are printed in an ordered pattern, an array, onto a solid support (less than 1 cm2) and used as probes for the target analytes of interest. In this manner, thousands of analytes can be analysed simultaneously in a single experiment. The array patterns generated are then transformed into proteomic maps, or fingerprints, revealing the detailed composition of the proteome.

Future persceptive:

Protein microarrays represents a novel technology for multiplexed, high-throughput analysis of crude, complex samples, such as blood, tissue, and cell extracts.In the end, these methodologies will have a major impact on biomedicine, biotechnology, and high-throughput proteomic analysis for years to come, and will provide unique opportunities to perform e.g. disease diagnostics, biomarker discovery, as well as a wide range of biotechnical applications.

Challenges:

A major challenge for HIV-1 B cell vaccine development moving forward is the design of new envelope immunogens that can trigger the selection and expansion of germline precursor and intermediate memory B cells to recapitulate B cell ontogenies associated with the maturation of a broadly neutralizing antibody response. Equally important for vaccine development is the identification of delivery systems, prime-boost strategies, and synergistic adjuvant combinations that can induce the magnitude and quality of antigen-specific T follicular helper (TFH) cell responses needed to drive somatic hypermutation (SHM) and B cell maturation against heterologous primary virus envelopes. Finding the

combination of multi-protein envelope immunogens and immunization strategies that can evolve a potent broadly neutralizing antibody response portends to require a complex vaccine regimen that might be difficult to implement on any scale.Ensuring an adequate and safe supply of food (animal proteins) in the context of the expected increase in human population and heightened concern over the use of antibiotics in animal production is a challenge. One way of meeting the growing requirement for animal proteins, without overuse of antibiotics, involves education and experience in disciplines and technologies that improve animal health. Immunology/immunotechnology represent an area involved in the detection, prevention, and control of many infectious diseases and therefore significant for animal health. Having persons skilled in this area is important for animal production now and in the future

Future Persceptive ;

Hazelnuts are widely used nowadays, and can pose a serious threat to allergic consumers due to cross-contamination that may occur during processing. This might lead to the presence of hidden hazelnut in foods. Therefore, reliable tests are needed to detect hazelnut, especially in processed foods. A hazelnut-specific indirect competitive ELISA based on polyclonal chicken antibodies was developed. The polyclonal antibodies were raised against modified hazelnut proteins in order to improve the detectability of hazelnut proteins in processed foods. The assay showed a detection limit of 1.36 microg hazelnut protein/mL of 5 mM urea in phosphate-buffered saline buffer (pH 7.4). Limited cross-reactivity with walnut and pecan nut was observed; no cross-reactivity was observed with other food ingredients. Blank cookies spiked before analysis showed recoveries of 73-107%. However, cookies spiked before baking showed that the detectability was severely decreased. Addition of lactose to the cookies, which led to more severe modification through the Maillard reaction, led to an increase in the detectability. These results indicate that using antibodies developed toward allergens modified through food processing-simulating reactions is a better approach for detection.

In recent years, the use of display vectors and in vitro selection technologies has transformed the way in which we generate ligands, such as antibodies and peptides, for a given target. Using this technology, we are now able to design repertoires of ligands from scratch and use the power of phage selection to select those ligands having the desired (biological) properties. With phage display, tailor-made antibodies may be synthesized and selected to acquire the desired affinity of binding and specificity for in vitro and in vivo diagnosis, or for immunotherapy of human disease. This review addresses recent progress in the construction of, and selection from phage antibody libraries, together with novel approaches for screening phage antibodies. As the quality of large naïve and synthetic antibody repertoires improves and libraries becomes more generally available, new and exciting applications are pioneered such as the identification of novel antigens using differential selection and the generation of receptor a(nta)gonists. A combination of the design and generation of millions to billions of different ligands, together with phage display for the isolation of binding ligands and with functional assays for identifying (and possibly selecting) bio-active ligands, will open even more challenging applications of this

inspiring technology, and provide a powerful tool for drug and target discovery well into the next decade.

Market demand:

Lateral flow tests are performed to detect the presence of target analyte in the sample and are also known as lateral flow immunotechnology assays. The lateral flow diagnostic tests market in Asia Pacific is growing due to increasing incidence rate of infectious diseases. Moreover, lateral flow tests are extremely easy to use and have minimal operator-dependent steps and interpretation, hence propelling the demand for lateral flow test kits in Asia Pacific.

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1. Candidates have to pay **Rs 5000/-** in the below mentioned account to complete Registration Process for selected services.
2. **Registration fee is NOT ADDITIONAL AMOUNT** we will reduce this from the main fee at the time of joining.
3. After completing the fee payment, please scan the payment receipt as well as your college identity card [Any identity card for student proof] and email it to support@nthrys.com of whatsapp the same to the below given number
4. After receiving this email NTHRYS staff will send you a Registration No, Fee receipt & a Final Confirmation document to confirm the registration. For any additional queries regarding registration process please call / sms / whatsapp on +91 - 9014935156.

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Bank Name: Vijaya Bank
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Branch Under NEFT: Yes
RTGS - IFSC Code: VIJB0004008

IMP NOTE:

1. Registration Fee is included in the total service fee and it is a Non Refundable Fee as its charged to confirm the selected service slot as well as for issuing Service Confirmation Document.
2. Total Service Fee = Registration Fee + Service Fee
3. Once the Service Confirmation document is issued, Students / Scholars / Clients are requested to be in touch with assigned branches.
4. Balance fee must be paid at assigned branches to start the selected services.

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1. Registration Fee is Non Refundable as its charged to confirm the selected service slot as well as for issuing Legitimate Service Confirmation Document which are used by Students / Scholars / Clients to submit in respective departments.
2. If the Assigned branch fail to conduct all the practicals / services / modules in stipulated time period as per mentioned in the Selected Service Module, Students / Scholars / Clients can request for refund only after getting a signed copy of Fee

Refund confirmation document from the Branch Head stating the same.

3. Fee refund will be calculated by excluding the Registration fee from the Total Paid Fees (Registration fee + Service fee paid at the time of joining) and the balance practicals / protocols / modules from the Selected Service Module will only be taken into account.
4. Students / Scholars / Clients who seek refund should email the above mentioned Branch Head signed copy of Fee Refund confirmation document to legal [a t] nthrys [d o t] com inorder to initiate the refund process. NTHRYS Legal Team will synchronize with the Branch and initiate the refund with in 7 working days. Emails sent to any other email id are not considered by our team for refund requests.