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Joint Event

4th Pharmaceutical Chemistry Conference

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12th World congress on Future Pharma

June 27-28, 2019 | Amsterdam, Netherlands

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KEYNOTE FORUM
DAY 01

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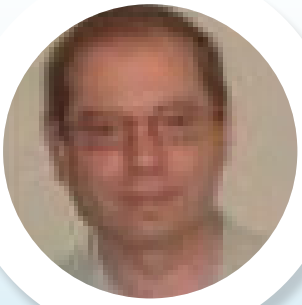
Increasing performance and throughput of ELISA procedures through implementation of ready-to-use plates and optimisation of the binding kinetics of the capture and detection antibodies



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Applications of the enzyme-linked immunosorbent assay (ELISA) are very common in a variety of biological disciplines. In the biopharmaceutical industry ELISAs are utilised for measuring drug substance and residual proteins for quality control and process development. However, they are labour intensive and lengthy procedures. This limits their throughput and hence determines a need to modify ELISA procedures to enhance their efficiency. We have previously described modifications of the transferrin ELISA procedure incorporating simultaneous addition of antigen and detection antibody and elimination of some washing steps, which significantly improved the performance of the method. In parallel the use of automated high throughput ELISA platforms and their advantages and limitations were discussed. The transferrin ELISA was used as a model to assess the effectiveness of the proposed modifications and could be extended to embrace other assays. Here we present our studies on additional optimisation approaches for ELISA techniques comprising preparation of ready-to-use plates and improved binding kinetics of capture and detection antibodies. These optimisations allow for further increase in sample throughput and maximisation of the performance of ELISA procedures. Following the implementation of the proposed modifications the overall duration of the assay was reduced from 4.5 hours to less than 1.5 hours without compromising the accuracy and precision parameters. The modified ELISA procedures could be easily adopted in QC, R&D and other analytical laboratories to replace the conventional methods. This would significantly improve the performance capabilities and economical efficency of the assays without a need to adopt highly expensive technologies.

Biography

Vladimir Gurevich has completed his PhD from the Moscow Academy of Veterinary Science and then worked in various areas of Veterinary and Medical Research. He was awarded several research grants. He is a Senior Scientist of the Bioanalytical Sciences in the Department of the Plasma Product Development Division of the CSL Behring (Australia) Pty Ltd., a leading biopharmaceutical company. His research has been published in many veterinary and medical peer-reviewed journals and presented at national and international conferences.

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Herbal drugs: Past, present and future scenario in India

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Medicinal plants have been used since ancient times and are regarded all over the world as a rich source of therapeutic agents for the prevention of diseases and ailments. Ancient literatures have documented that indigenous herbs had been used by cultures like Chinese, Japanese, African, Latin American and Southeast Asia in their healing rituals. The consumption of plant-based medicines in the West has increased manifold in recent years. Ayurvedic medicines in India, Kampo Medicine in Japan, Unani medicine in the Middle East and traditional Chinese medicine are still being used by a large majority of people. The medicinal use of herbs decreased rapidly in the West since the introduction of more predictable synthetic drugs with their fast effects and easy availability. However, it has also been observed that some plants are not safe for consumption and are liable to elicit adverse effects. As a result of increasing demand for herbal medicines, there are increasing concerns about the safety, standardization, efficacy and quality of herbal products by health professionals as well as the general public. Improvement in the quality of herbal medicines could be achieved more in future by implementation of good agricultural practices (GAPs) at the point of cultivation of medicinal plants good manufacturing practices (GMPs) during the process of manufacture and packaging of finished herbal products, and strict measures for quality control.

Biography

A K Saksena is currently working as a Professor and Head, Department of Pharmacology in King George's Medical University (Erstwhile KGMC), Lucknow, India. He has completed his MBBS in 1977 and MD in 1985. Subsequently, he worked as a SRF for a short time before joining as a Lecturer in 1986. During his 40 years of career, he has been actively involved in teaching of MBBS, BDS, MD and MDS students. He has played pivotal role in Curriculum Planning and its implementation for teaching the subject - Pharmacology.

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