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Abstract

Furthermore, Immunohistochemistry is often being used to validate findings from alternative proteomic studies. For example the validation of prognostic and predictive protein biomarker candidates derived from cell line experiments is commonly performed in clinical tumour samples.

Keywords: Standardization; Immunohistochemistry; Signalling proteins; Antibody-microarray; Expression patterns; Microscopic quantities

Introduction

The validation of proteomic-based discovery using clinical specimen is reviewed by Hewitt. Although, antibody signals can be directly assigned to cellular localizations and thus laser micro-dissection is not required, Immunohistochemistry results are nonetheless influenced by pre-analytic tissue processing and antigen retrieval. Inconsistent quality of Immunohistochemistry reagents and antibodies is also discussed to influence robustness of Immunohistochemistry results [1]. Despite automation and knowledge, Immunohistochemistry, still lacks uniformity of technique, appropriate controls, and standardization of antibodies and grading techniques, making it difficult to compare results across institutions, laboratories and experiments [2]. The statistical analysis of Immunohistochemistry-based multiple markers may be complicated by the nonlinear nature of Immunohistochemistry

across the NCI60 cell lines, whereas non-cell-

protocols have been identified, which affect the molecular and genetic profiles of human tissue samples before, during and after the surgical resection. We propose that tissue samples that reflect molecular reality are a requirement to enable efficient cancer drug profiling and biomarker discovery. Besides technology-based challenges, regulatory issues are also limiting factors in the development of personalized medicine and predictive biomarkers. The clinical validation of putative functional regulators of drug response will run the risk of failure similar to other biomarker development efforts unless strict reporting guidelines are adhered to. Finally, the NCI-EORTC recommends that predictive biomarker studies require even stricter considerations, requiring validation in large randomized trials with sufficient power to detect drug-specific differences in tumour response.

Conclusion

Using, combining and further improving state of the art technologies and establishing stringent guidelines, the individualization of anticancer therapy especially in second-line treatment, will become accomplishable.

Acknowledgement

None

Conflict of Interest

None

References

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2. Lynch K (2019) The Man within the