Biomarkers - Technologies, Markets and Companies

Description: This report follows the broad definition of a biomarker as a characteristic that can be objectively measured and evaluated as an indicator of normal biological or pathogenic processes as well as pharmacological responses to a therapeutic intervention. Tests based on biomarkers have been around for more than half a century, but interest in their application for diagnostics and drug discovery as well as development has increased remarkably since the beginning of the 21st century. This report describes different types of biomarkers and their discovery using various “-omics” technologies such as proteomics and metabolomics. Molecular diagnostics technologies are used for the discovery of biomarkers and new tests are also based on biomarker.

Currently the most important applications of biomarkers are in drug discovery and development. The role of biomarkers in various therapeutic areas particularly cancer, cardiovascular diseases and disorders of the central nervous system, is described. Biomarkers are useful not only for diagnosis of some of these diseases but also for understanding the pathomechanism as well as a basis for development of therapeutics.

Biomarkers will facilitate the combination of therapeutics with diagnostics and will thus play an important role in the development of personalized medicine. Biomarkers play a role in use of pharmacogenetics, pharmacogenomics and pharmacoproteomics for development of personalized medicine.

Many of the regulatory issues concerning biomarkers are related to genomics, proteomics, molecular diagnostics and pharmacogenomics/pharmacogenetics. Validation of biomarkers and their role in clinical trials is discussed.

Biomarker markets are estimated from 2015 to 2025 according to share of markets for various technologies and applications: proteomics, metabolomics, molecular diagnostics, drug discovery, clinical trials, and bioinformatics. Market values are further split according to therapeutic applications and major geographical areas. Unfulfilled needs in biomarkers are identified as well as the drivers for biomarker markets. Challenges facing the biomarker industry and strategies for developing biomarker markets are discussed.

A large number of companies with varying technical backgrounds are involved in biomarkers and 302 of these are profiled in part 2 of the report with classification into various categories. These also include major pharmaceutical companies. There is tabulation of 464 collaborations between companies and additional academic collaborations are mentioned in the individual profiles of companies. The report is supplemented by 1,200 references, 76 tables and 18 figures.

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