**Biomarkers in Rheumatoid Arthritis: From Drug Discovery to the Clinic**

**Research Goal**

Multiple sclerosis (MS) is a disabling disease affecting the brain, spinal cord, and optic nerves, disrupting messages traveling along nerve fibers and causing subsequent nerve damage. There is no cure for treatment of MS, hence the treatment focuses on suppressing the autoimmune response and managing disease symptoms. Early diagnosis and timely therapeutic intervention are critical factors in ensuring favorable long-term outcomes in MS patients. Identification and selection of reliable biomarkers play a crucial role in diagnosis, management, and the selection of a right therapeutic strategy for the treatment of MS. How proteomic, genomic, metabolomics and cellular biomarkers can address specific questions in drug development and clinical research in Multiple Sclerosis.

The number of biomarkers that are evaluated in clinical, exploratory clinical and pre-clinical  
Biomarkers for stratification of patients who are most likely to respond to treatment  
Selection of appropriate biomarkers of drug efficacy in clinical trials  
Biomarkers for safety monitoring in clinical studies  
Biomarkers predicting the course of the disease and likely progression  
Selection of diagnostic biomarkers and associated kits to measure the biomarkers  
Identification of biological pathways in which biomarkers are involved  
Selection of pre-clinical/animal models that are used to evaluate the safety and efficacy of biomarkers  
Identification of biomarkers predictive of drug resistance and failure of treatment  
Selection of panel of biomarkers or signature for diagnosis  
Association of biomarkers with varied statistical variables such as clinical endpoints, other biomarkers

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