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Collana	Methods in Physiology, , 2628-7471
Disciplina	612
Soggetti	Human physiology Proteomics Metabolism Human genetics Systems biology Human Physiology Metabolomics Human Genetics Systems Biology Músculs Fisiologia humana Malalties musculars Genètica molecular humana Llibres electrònics
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	Part I: Genomic and Epi-genomic -- 1) GWAS/muscle function and diseases (by Eric Hoffman) -- 2) Whole genome and whole exon sequencing/muscle disorders (by Silvère van der Maarel and Richard Lemmers) -- 3) Epi-genome approaches/muscle regeneration (by Vittorio Sartorelli) -- Part II: Transcriptomic -- 4) RNA profiling (by Yi-Wen Chen, confirmed) -- 5) miRNA profiling (by Alyson Fiorillo) -- 6) Single cell profiling in muscle (byPier Lorenzo Puri) -- 7) Statistics and bioinformatics (by Heather Gordish) -- Part III: Proteomic -- 8). Proteome profiling of human/ clinical samples – i.e. necessarily label-

free techniques (by Lawrence Mandarino) -- 9) Proteome profiling of cell and animal models – i.e. label techniques such as SILAC (by Matthias Mann OR SILAM with JR Yates III) -- 10) Global analysis of post-translational modifications (by David E James) -- 11) Proteome dynamics – synthesis and degradation on a proteome wide scale (by Jatin Burniston, confirmed) -- Part IV: Metabolomic -- 12) Non-targeted metabolomics using mass spectrometry (by Charles Burant).

Sommario/riassunto

This book is a collection of principles and current practices in omics research, applied to skeletal muscle physiology and disorders. The various sections are categorized according to the level of biological organization, namely, genomics (DNA), transcriptomics (RNA), proteomics (protein), and metabolomics (metabolite). With skeletal muscle as the unifying theme, and featuring contributions from leading experts in this traditional field of research, it highlights the importance of skeletal muscle tissue in human development, health and successful ageing. It also discusses other fascinating topics like developmental biology, muscular dystrophies, exercise, insulin resistance and atrophy due to disuse, ageing or other muscle diseases, conveying the vast opportunities for generating new hypotheses as well as testing existing hypotheses by combining high-throughput techniques with proper experiment designs, bioinformatics and statistical analyses. Presenting the latest research techniques, this book is a valuable resource for the physiology community, particularly researchers and grad students who want to explore the new opportunities for omics technologies in basic physiology research.