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Nota di contenuto	Chapter 1. Pluripotent stem cells and skeletal muscle differentiation: challenges and immediate applications (Nuria Montserrat) -- Chapter 2. Role of the ubiquitin-proteasome pathway in skeletal muscle (Yasuo Kitajima) -- Chapter 3. Stem cell therapy in muscle degeneration (Maurilio Sampaolesi) -- Chapter 4. The autophagy-dependent signaling in skeletal muscle (Kunihiro Sakuma) -- Chapter 5. Cytokines in skeletal muscle growth and decay (Arkadiusz Orzechowski) -- Chapter 6. The role of ribosome biogenesis in skeletal muscle hypertrophy (John J. McCarthy) -- Chapter 7. Comprehensive approach to sarcopenia and cachexia treatment (Hidetaka Wakabayashi) -- Chapter 8. The functional role of PGC-1 in muscular adaptation (Aaron Russell) -- Chapter 9. Biological function of muscle-secreted proteins (Wataru Aoi) -- Chapter 10. Biological role of TRPC1 in myogenesis, regeneration and disease (Ella W. Yeung) -- Chapter 11. Redox Regulation of Mechanotransduction and Atrophy in Unloaded Skeletal Muscle (John M. Lawler) -- Chapter 12. Participation of AMPK in the control of skeletal muscle mass (Tatsuro Egawa) -- Chapter 13. Therapeutic potential of skeletal muscle plasticity in muscle diseases and conditions (Gordon S. Lynch).

Sommario/riassunto

This book discusses recent advances and various topics in plasticity of skeletal muscle from the perspectives of morphology, biological function, and clinical applications. Skeletal muscle is a highly plastic organ to adapt to environmental various demands, appears to endocrine various myokines, which flow into blood to protect the recognizing function of brain and inhibit the appearance of several cancer tumorigenesis. The book deals with current stem-cell based, pharmacological, and nutritional therapies for muscle wasting (sarcopenia, cachexia, and muscular dystrophy). It also explains the roles of biological mediators such as PGC-1, transient receptor potential cation channels (TRPC), and AMPK in modulating muscle function. The functional roles of ubiquitin-proteasome system, autophagy-dependent signaling in muscle homeostasis, ribosome biogenesis, and redox regulation of mechanotransduction to modulate skeletal muscle mass are also covered. It is an essential resource for physicians, researchers, post-docs as well as graduate students in the field of sports science including rehabilitation therapy, exercise physiology, exercise biochemistry, and molecular biology dealing with skeletal muscle.
