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Schizonepeta tenuifolia extract (DKB138) enhances the muscle strength in dexametasone-induced muscle atrophy mice model

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Sarcopenia progresses from the age of 40 and muscle mass decreases by more than 30% in the age of 70 or older. So far, there is no drug for sarcopenia, and it mainly relies on exercise and protein supplement-oriented health foods, but drugs or functional foods are needed for elderly and patients who have difficulty moving. Schizonepeta tenuifolia is a medicinal plant widely found in Korea, China, Japan and is commonly used for headaches, colds and allergies. However, preventive effect of this herb on sarcopenia have yet to be explored. Schizonepeta tenuifolia extract (DKB138) inhibited hydrogen peroxide-induced C2C12 skeletal muscle cell death. DKB138 was analyzed by UPLC-Q-ToF/MS and 9 components were identified. In the treadmill test, DKB138-treated mice group showed a significantly enhanced running time and greater running distance compered with DEX-indcued mice group(control). Also DKB138 treatment led to the downregulation of inflammation-related cytokines. In conclusion, we demonstrated that DKB138 administraion protected against DEX-induced muscle atrophy. DKB138 suppressed the expression of muscle degradation factors and increased muscle strength. These results highlight the potential of DKB138 as protective and therapeutic agent or functional food against muscle dysfunction and atrophy.

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