Resveratrol Decreases TXNIP mRNA and Protein Nuclear Expressions With an Arterial Function Improvement in Old Mice

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Résumé en anglais	Aging leads to a high prevalence of glucose intolerance and cardiovascular diseases, with oxidative stress playing a potential role. Resveratrol has shown promising effects on glucose tolerance and tends to improve endothelial function in elderly patients. Thioredoxin-interacting protein (TXNIP) was recently proposed as a potential link connecting glucose metabolism to oxidative stress. Here, we investigated the resveratrol-induced improvement of arterial aging phenotype in old mice and the expression of aortic TXNIP. Using an in vivo model of old mice with or without 3-month resveratrol treatment, we investigated the effects of resveratrol on age-related impairments from a cardiovascular Doppler analysis, to a molecular level, by studying inflammation and oxidative stress factors. We found a dual effect of resveratrol, with a decrease of age-related glucose intolerance and oxidative stress imbalance leading to reduced matrix remodeling that forestalls arterial aging phenotype in terms of intima-media thickness and arterial distensibility. These results provide the first evidence that aortic TXNIP mRNA and protein nuclear expressions are increased in the arterial aging and decreased by resveratrol treatment. In conclusion, we demonstrated that resveratrol helped to restore several aging impaired processes in old mice, with a decrease of aortic TXNIP mRNA and protein nuclear expressions

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