

The [proliferation](#), [migration](#) and [dedifferentiation](#) of [vascular smooth muscle](#) cell]]s (VSMCs) exert crucial roles in [atherosclerosis](#) (AS) progression.

The aim of a study of Fan et al. was to explore the influences of [circular RNA](#) 0004872 (circ_0004872) in [platelet-derived growth factor-BB](#) (PDGF-BB)-induced AS cell model and investigate the underlying mechanisms. [Real-time polymerase chain reaction](#) (RT-qPCR) was implemented for the expression detection of circ_0004872, mitogen-activated protein kinase 1 ([MAPK1](#)) messenger RNA ([mRNA](#)), [microRNA](#)-513a-5p (miR-513a-5p) and thioredoxin interacting protein ([TXNIP](#)). Cell proliferation was analyzed via Cell Counting Kit 8 ([CCK8](#)) assay. [Cell migration](#) was assessed via [wound-healing assay](#) and [transwell migration assay](#). [Western blot assay](#) was used to measure the expression of [alpha smooth muscle actin](#) (α -SMA), [osteopontin](#) (OPN), [calponin](#) and [TXNIP](#). [Dual-luciferase reporter assay](#) and RNA-pull down assay were used for confirmation of interaction between [miR-513a-5p](#) and circ_0004872 or [TXNIP](#). Circ_0004872 expression was elevated in [PDGF-BB](#)-induced human aortic vascular smooth muscle cells (HA-VSMCs) and carotid plaque tissues. Circ_0004872 silencing alleviated PDGF-BB-induced proliferation, migration and dedifferentiation in HA-VSMCs. MiR-513a-5p bound to circ_0004872, and circ_0004872 knockdown-induced effects in PDGF-BB-treated HA-VSMCs were largely attenuated by the silencing of miR-513a-5p. MiR-513a-5p bound to the 3' untranslated region (3'UTR) of TXNIP, and miR-513a-5p overexpression-mediated effects were counteracted by the transfection of pcDNA-TXNIP in PDGF-BB-induced HA-VSMCs. TXNIP was modulated by circ_0004872/miR-513a-5p signaling cascade in HA-VSMCs. Circ_0004872 accelerated PDGF-BB-induced proliferation, migration and dedifferentiation in HA-VSMCs through enhancing TXNIP level via sponging miR-513a-5p ¹⁾.

¹⁾

Fan K, Ruan X, Wang L, Lu W, Shi Q, Xu Y. Circ_0004872 promotes platelet-derived growth factor-BB-induced proliferation, migration and dedifferentiation in HA-VSMCs via miR-513a-5p/TXNIP axis. *Vascul Pharmacol*. 2021 Feb 13:106842. doi: 10.1016/j.vph.2021.106842. Epub ahead of print. PMID: 33592319.

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