

SIGNIFICANCE STATEMENT

TRPC5, a member of the TRP channel family, is a calcium permeant cation channel thought to regulate the actin cytoskeleton and cell shape in neurons. TRPC5 has been proposed to influence permeability properties of the glomerular filtration barrier through effects on the podocyte cytoskeleton. The authors made two novel transgenic mouse models overexpressing either wild-type (TG) or dominant negative (DN) TRPC5. Protein excretion was similar among TG, DN and B/6 mice, podocyte morphology was unaffected, and the proteinuric response to lipopolysaccharide injection did not differ among the mouse lines. Injection of mice with the TRPC5 agonist Englerin A and antagonist ML204 did not modify protein excretion. The findings do not add support to a specific role of TRPC5 in regulating the properties of the glomerular filtration barrier.