Review of: "Brain Capillary Pericytes are Metabolic Sentinels that Control Blood Flow through K_{ATP} Channel Activity"

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This elegant study examined the role of KATP channels in thin-stranded pericytes on local blood flow regulation in mouse brain. The authors provide compelling evidence that activation of pericyte KATP channels hyperpolarizes the pericytes which is then transmitted to underlying endothelial cells and amplified by endothelial KIR channels and conducted retrogradely resulting in relaxation of upstream contractile pericytes (on initial capillary segments) and parenchymal arteriole smooth muscle cells to increase capillary blood flow. I only have two concerns:

1. The authors show that 100 uM Ba2+ blocks the effects of local pericyte applied pinacidil on upstream vasodilation and capillary blood flow. How do they know that in their system this concentration of Ba2++ does not block KATP channels in the pericytes? This could easily be directly tested in their isolated capillary preparation.
2. The authors show that pharmacological block of GLUT-1 causes vasodilation and increased blood flow that can be blocked by glibenclamide. However, given that the GLUT-1 blocker was applied globally, they do not know the site of action (pericytes, ECs, fibroblasts, neurons, astrocytes, etc.). Are effects of GLUT-1 blockade absent in animals expressing KATP dominant negative constructs in pericytes?