CCM protein

Loss-of-function mutations in genes encoding KRIT1 (also known as CCM1), CCM2 (also known as OSM and malcavernin) or PDCD10 (also known as CCM3) cause cerebral cavernous malformations (CCMs). These abnormalities are characterized by dilated leaky blood vessels, especially in the neurovasculature, that result in increased risk of stroke, focal neurological defects and seizures. The three CCM proteins can exist in a trimeric complex, and each of these essential multi-domain adaptor proteins also interacts with a range of signaling, cytoskeletal and adaptor proteins, presumably accounting for their roles in a range of basic cellular processes including cell adhesion, migration, polarity and apoptosis.

Cerebral cavernous malformations (CCMs) arise owing to inactivation of the endothelial CCM protein complex required to dampen MEKK3 activity [1)]

1)
Ren AA, Snellings DA, Su YS, Hong CC, Castro M, Tang AT, Detter MR, Hobson N, Girard R, Romanos S, Lightle R, Moore T, Shenkar R, Benavides C, Beaman MM, Mueller-Fielitz H, Chen M, Mericko P, Yang J, Sung DC, Lawton MT, Ruppert M, Schwaninger M, Körbelin J, Potente M, Awad IA, Marchuk DA, Kahn ML. PIK3CA and CCM mutations fuel cavernomas through a cancer-like mechanism. Nature. 2021 Apr 28. doi: 10.1038/s41586-021-03562-8. Epub ahead of print. PMID: 33910229.