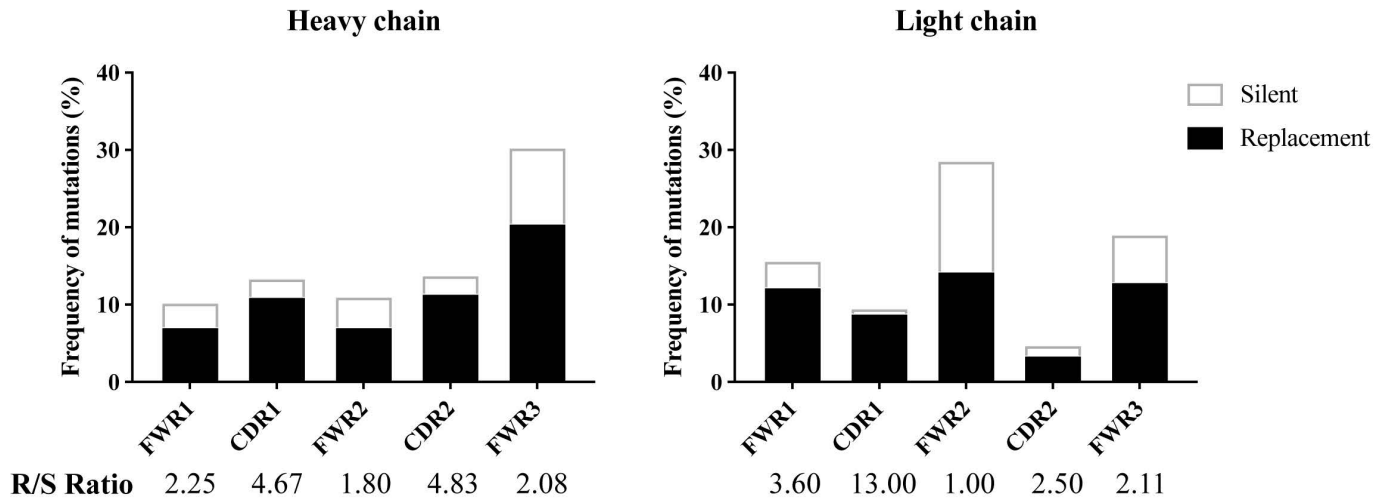


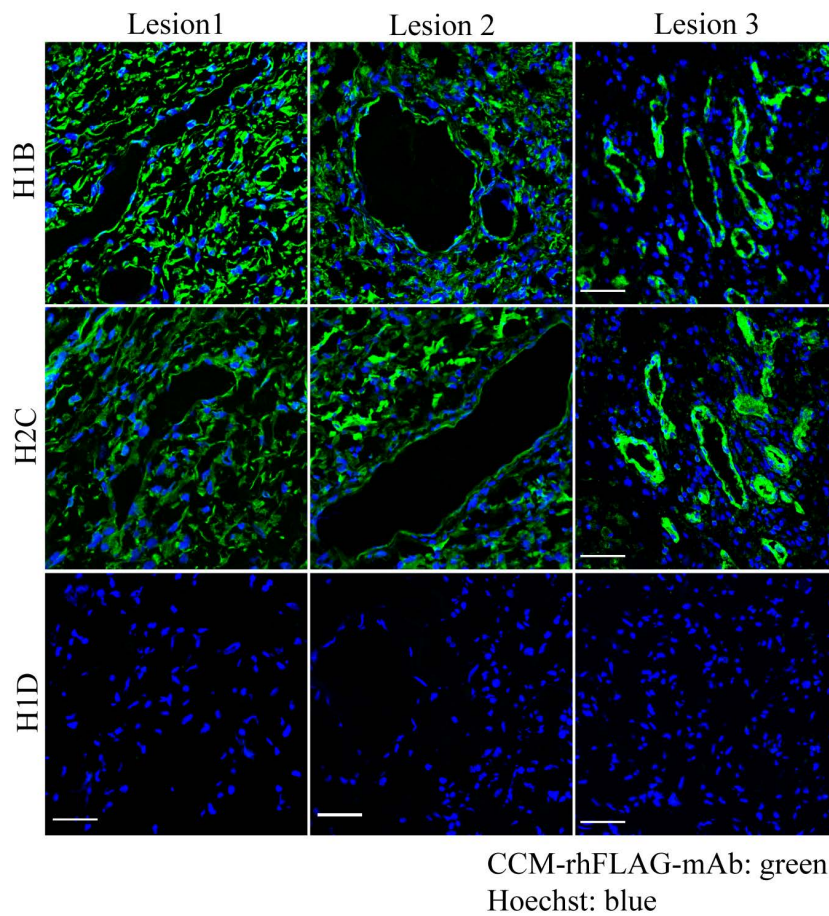
Supplementary information

Title: Antibodies in Cerebral Cavernous Malformations React with Cytoskeleton Autoantigens in the Lesional Milieu

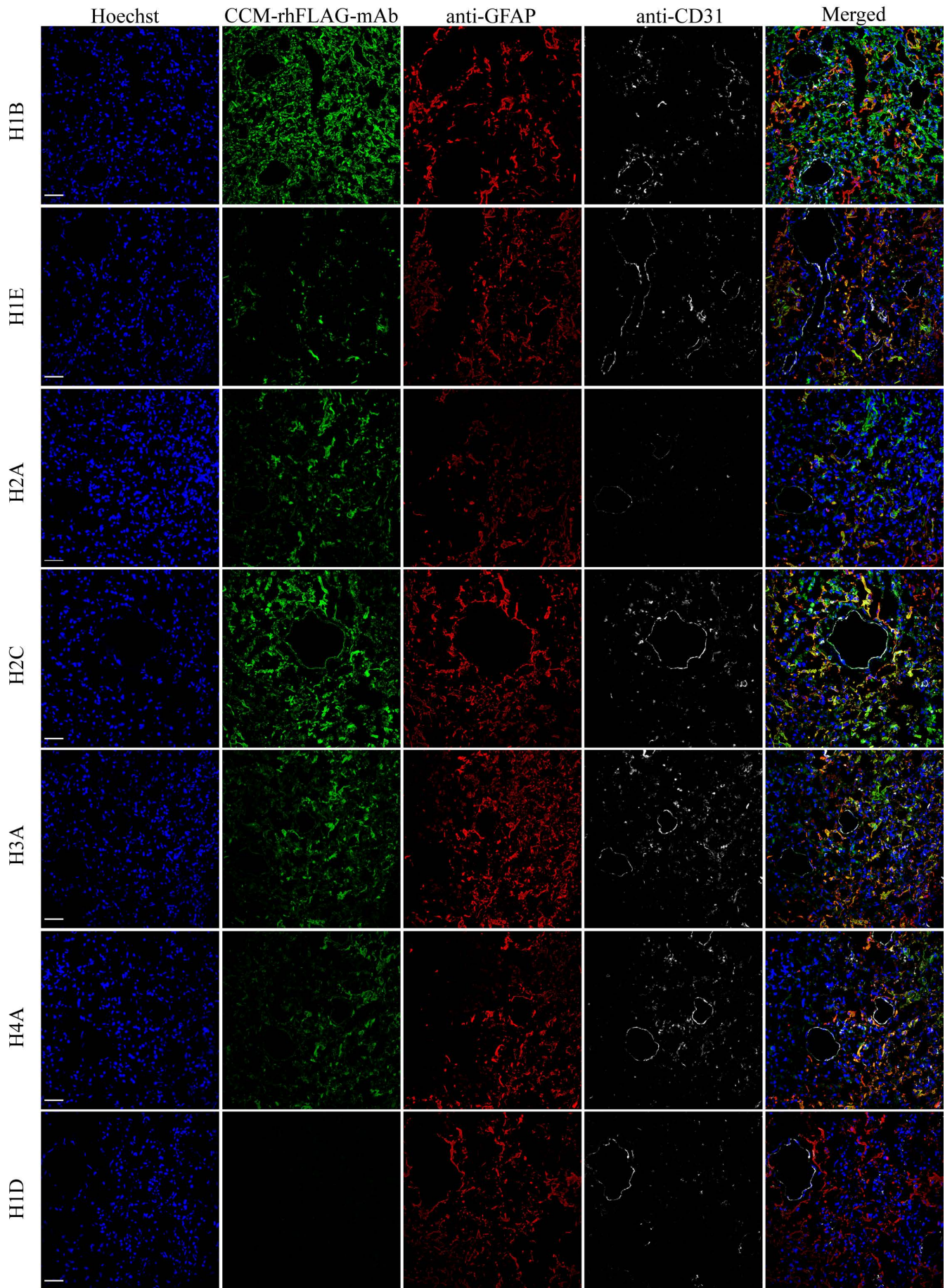
Authors: Dongdong Zhang, Andrew J. Kinloch, Abhinav Srinath, Robert Shenkar, Romuald Girard, Rhonda Lightle, Thomas Moore, Janne Koskimäki, Azam Mohsin, Julián Carrión-Penagos, Sharbel Romanos, Le Shen, Marcus R. Clark, Changbin Shi, Issam A. Awad



Supplementary Fig. 1. Distribution of mutations in CCM-rhFLAG-mAbs. Frequency of total (total bar heights), replacement (R, black bar heights), and silent (S, white bar height) nucleotide mutations in framework regions (FWR) and complementary determining regions (CDR) of Ig heavy and light chains. R/S mutation ratios are listed below x-axis.



Supplementary Fig. 2. CCM-rhFLAG-mAbs stain different CCM lesions similarly. Wide field scanning confocal microscopy of CCM-rhFLAG-mAb (H1B and H2C, green) stained resected CCM tissues from three patients. Scale bars: 50 μ m.

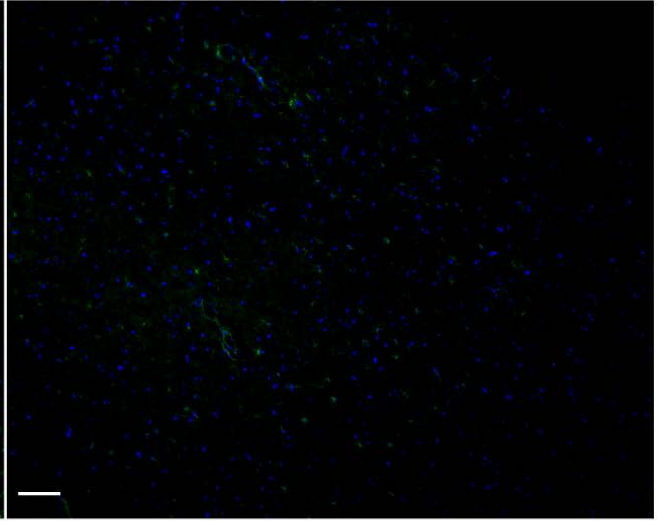
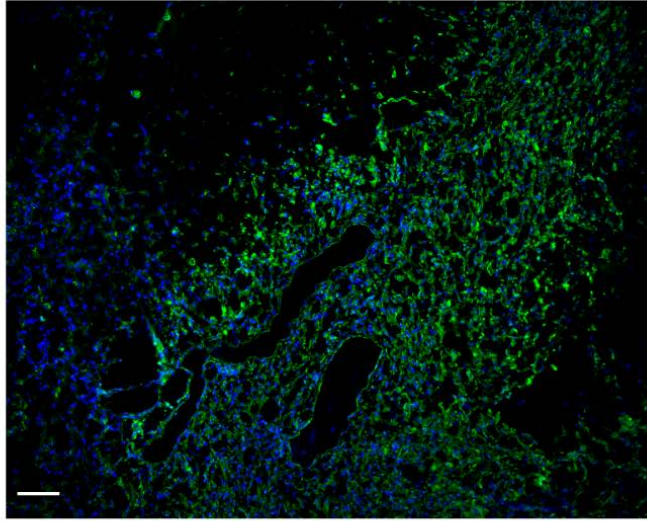


Uwr r mgo gpvct { "Hki . '5. "Nqy 'r qy gt "xkgy "qh'EEO /tj HNCI /o Cd "dkpf lpi "q "tgugevgf "EEO "kuuwgu0Uecppkpi " eqphqecno letqueqr { "cv'ny 'r qy gt "uj qy u'dkpf lpi "qh'EEO /tj HNCI /o Cdu "qqr "ukz "tqy u'i tggp +tgrv xkg "q "I HCR" *tgf +cpf 'EF 53 "y j kg +0J 3F 'EEO /tj HNCI /o Cd "dqwqo 'tqy +j cu 'pq "f gygevcdrq "uclpki 0F P C "dmg +ku "uclpki " y kj "J qgej uv'555640Uecrg "dctu <72 "Üb 0

CCM lesional tissue

Normal brain

H1B



CCM-rhFLAG-mAb: green
Hoechst: blue

Uw r rgo gpvt { "Hi . '6. 'EEO /tj HNCI /o Cd" dlpf u'r tghgtgpvcn { "v' EEO "rgukqpcn'kuuwg0K o wpqhwqt guegpeg"
uclpki 'y kj 'EEO /tj HNCI /o Cd" *J 3D. 'i tggp+lp' EEO "rgukqpcn'cpf "pqto cn'dtckp"kuuwg0F P C "ku'lvckpgf "d { "
J qgej uv'55564" *dmw-0Uecrg" dctu<322" Uo 0