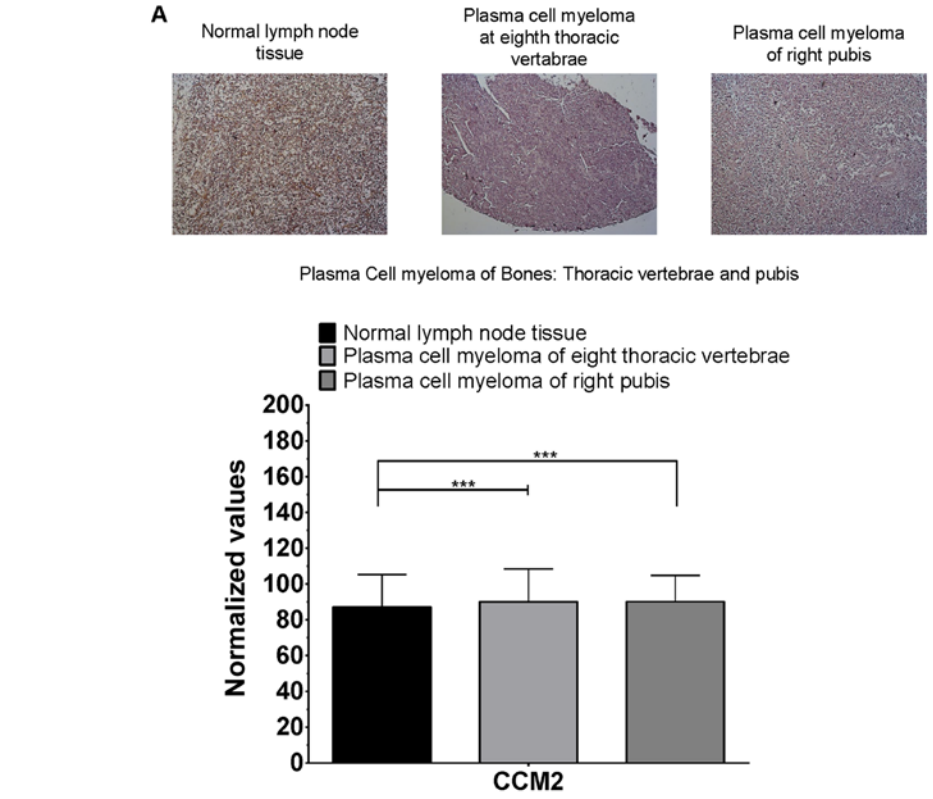
Figure S1. Significantly increased protein expression of CCM2 in heterogeneous lymphatic cancers. The significantly altered expression of CCM2 protein in tumor tissue (myeloma or lymphoma) (detailed in each panel) compared to adjacent normal lymph node from tumor tissue sections, from (A) thoracic vertebrae and pubis, (B) ribs, (C) neck and (D) follicular non-Hodgkin's lymphoma of various organs were assessed utilizing immunohistochemistry (IHC) applications with horseradish peroxidase (HRP), 3,3'-diaminobenzidine (DAB) detection system and quantified with Elements Analysis software. (A) Slight visual differences in the relative intensity of CCM2 staining among plasma cell myeloma of the thoracic vertebrae and pubis and normal lymph node were observed and statistical significance was achieved through the large sample size (ROI for each image) (top panel); significant differences were determined through the quantification of the relative expression level of CCM2 between each myeloma and normal lymph node (bottom panel). (B) There are significant differences in the relative intensity of CCM2 staining among plasma cell myeloma of various ribs and normal lymph node tissue of the juxta-esophagus (left panel); significant differences were observed through the quantification of the relative expression level of CCM2 between each myeloma and normal lymph node tissue (right panel).



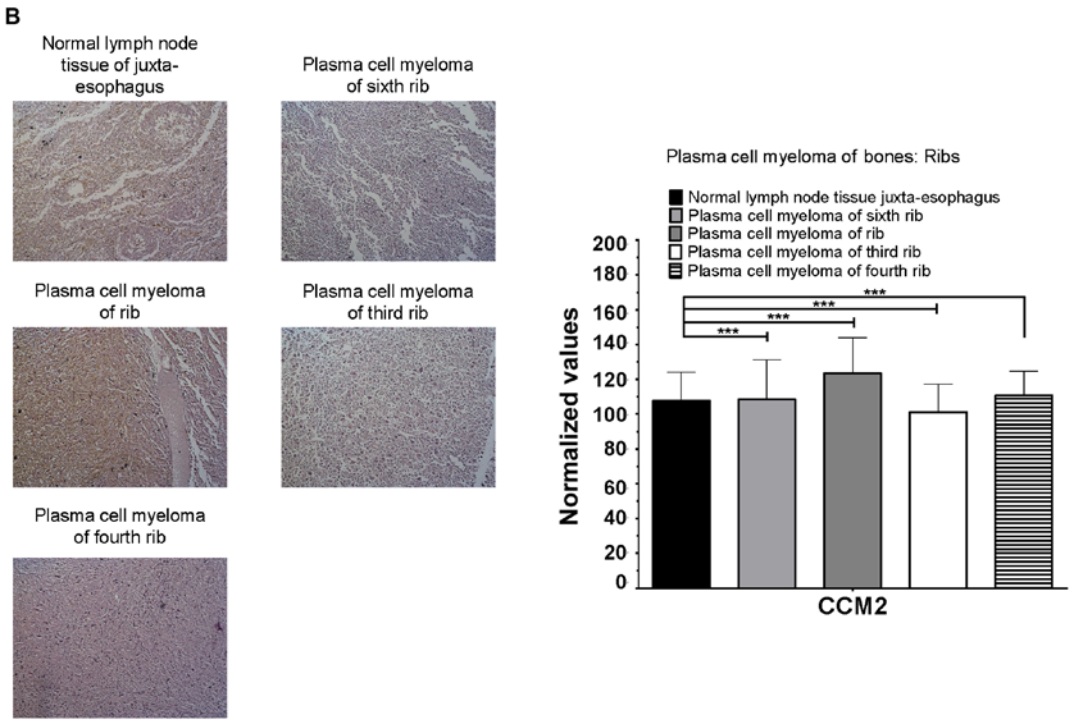


Figure S1. Continued. (C) The visual difference in the relative intensity of CCM2 staining, among various lymphomas and normal lymph node in the neck was observed with DAB staining (left panel); significant differences were confirmed through the quantification of the relative expression level of CCM2 between each lymphoma and normal lymph node (right panel). (D) Significant differences in the relative intensity of CCM2 staining among non-Hodgkin's lymphoma of various organs and normal lymph node were generalized in the various tissues (top panel); significant differences were measured through the quantification of the relative expression level of CCM2 between each lymphoma and normal lymph node (bottom panel). The red/brown color from HRP/DAB reactivity with CCM2 antibody is quantified and averaged between the red and green channel quantification and cell nuclei are quantified with the blue channel. Data were normalized against the respective control using the blue channel for cell nuclei and background staining. Automated quantification of ROI intensities of CCM2 proteins was accomplished with Elements Analysis software. The graph is a representative quantification obtained for the different experiments (***P≤0.001 for unpaired t- test, ROI=6443-16587, depending on tissue sample). The red line on quantification graphs represents baseline for the normalized control. CCM2, cerebral cavernous malformation 2; ROI, regions of interest.

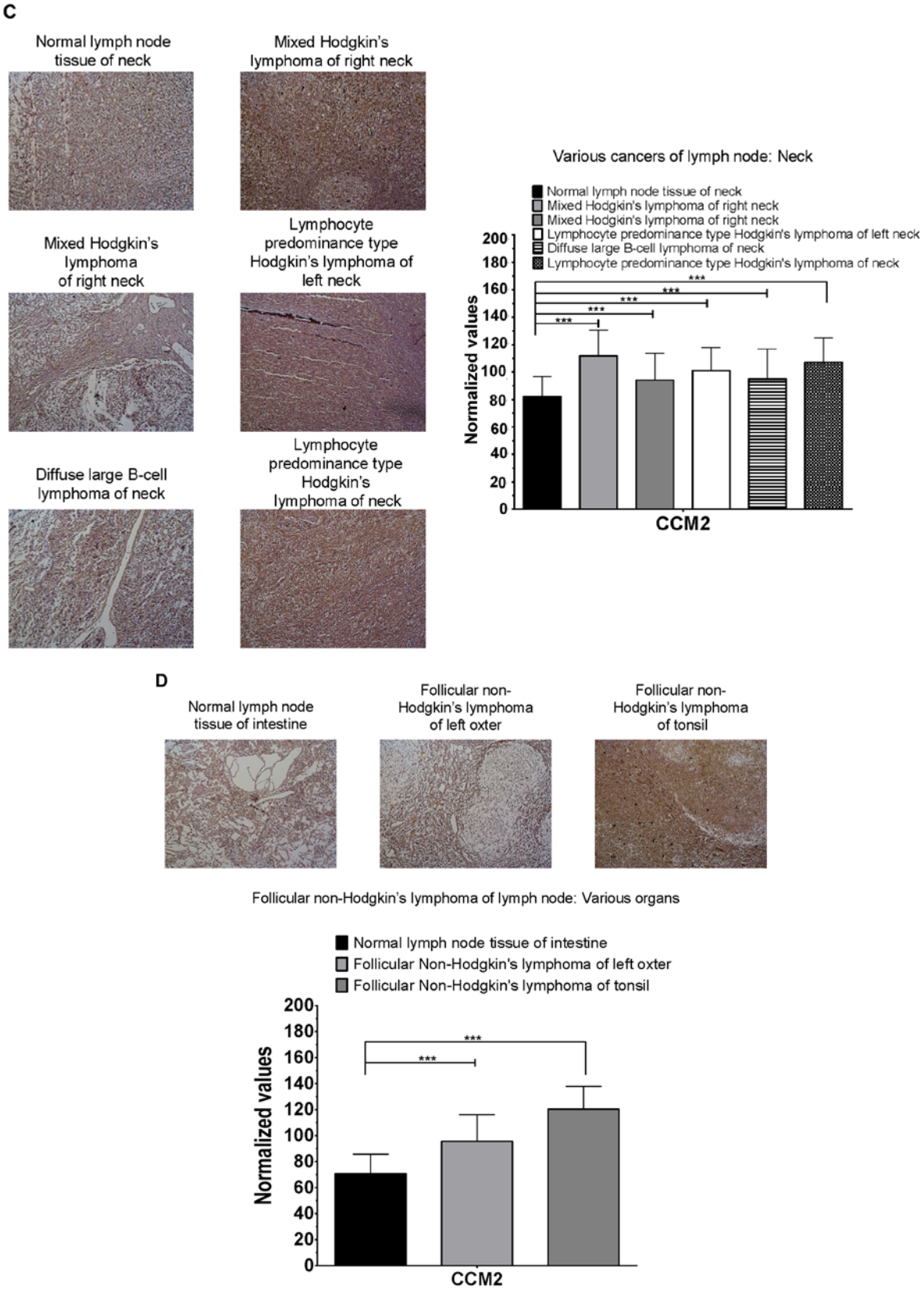
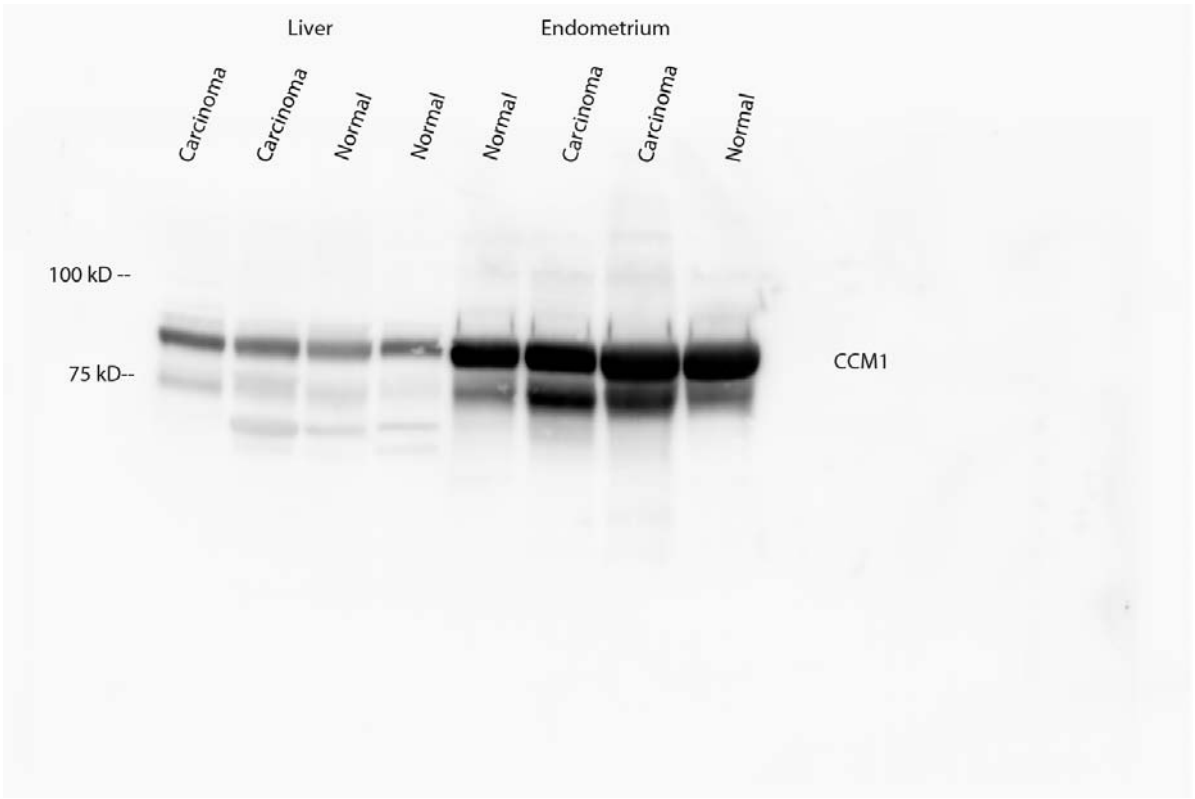


Figure S2. Original western blotting demonstrated significant perturbed expression of CCM1 and CCM3 proteins in endometrial and liver cancers. (A) Western blot analysis demonstrated increased expression levels of the CCM1 protein in both endometrial (labelled as Endo in the original blots) and liver tumor tissues, compared to normal tissue. It can be seen that there are very few non-specific bands that are present above or below the CCM1 band. We suspect the bands above are non-specific bands, since they are not in the molecular range of CCM1, suggesting formation of a complex as these bands may be interacting partners of CCM1. Non-specific bands are more apparent below the CCM1 band, with what we believe may be degradation products or shorter isoforms (alternatively spliced isoforms) of CCM1, as previously reported. (B) Western blot analysis demonstrated increased expression levels of CCM3 protein in endometrial (labelled as Endo in the original blots) and liver tumor tissues, compared to normal tissue. We suspect the bands above the CCM3 band are non-specific bands, since they are not in the molecular range of CCM3, suggesting formation of a complex as these bands may be interacting partners of CCM3. Any faint bands below the CCM3 band we believe are degradation products of CCM3. CCM, cerebral cavernous malformation.

A



B