CRB2 (Crumbs Family Member 2) is a Protein Coding gene. Diseases associated with CRB2 include focal segmental glomerulosclerosis 9 and ventriculomegaly with cystic kidney disease. Among its related pathways are Hippo signaling pathway. GO annotations related to this gene include calcium ion binding and aspartic-type endopeptidase inhibitor activity. An important paralog of this gene is NOTCH2.

Recessive CRB2 mutations were reported to cause both steroid resistant nephrotic syndrome and prenatal onset ventriculomegaly with kidney disease.

Jaron et al report two Ashkenazi Jewish siblings clinically diagnosed with ciliopathy. Both presented with severe congenital hydrocephalus and mild urinary tract anomalies. One affected sibling also has lung hypoplasia and heart defects. Exome sequencing and further CRB2 analysis revealed that both siblings are compound heterozygotes for CRB2 mutations p.N800K and p.Gly1036Alafs*43, and heterozygous for a deleterious splice variant in the ciliopathy gene TTCB21. CRB2 is a polarity protein which plays a role in ciliogenesis and ciliary function. Biallelic CRB2 mutations in animal models result in phenotypes consistent with ciliopathy. This report expands the phenotype of CRB2 mutations to include lung hypoplasia and uretero-pelvic renal anomalies, and confirms cardiac malformation as a feature. We suggest that CRB2-associated disease is a new ciliopathy syndrome with possible digenic/triallelic inheritance, as observed in other ciliopathies. Clinically, CRB2 should be assessed when ciliopathy is suspected, especially in Ashkenazi Jews, where we found that p.N800K carrier frequency is 1/64. Patients harboring CRB2 mutations should be tested for the full range of ciliopathy manifestations [1)].

1)
Jaron R, Rosenfeld N, Zahdeh F, Carmi S, Beni-Adani L, Doviner V, Picard E, Segel R, Zeligson S, Carmel L, Renbaum P, Levy-Lahad E. Expanding the phenotype of CRB2 mutations - A new ciliopathy syndrome? Clin Genet. 2016 Mar 1. doi: 10.1111/cge.12764. [Epub ahead of print] PubMed PMID: 26925547.