**RESULTS**

IHC stains have been applied to 25 cases. All 25 cases of HB showed strongly, diffuse membrane stain of CA9 (identical to ccRCC); completely negative for Pax8 (renal marker). Only 10 cases were positive for inhibin. For the 10 cases of HB which underwent UroGenRA™-Kidney Array-CGH assay, 9 cases presented several genomic changes and 1 case exhibited no copy number change. Among the 9 cases with multiple genomic alterations, 7 cases showed partial or entire chromosome 3 deletion spanning VHL gene locus and 4 cases displayed partial or entire chromosome 6 deletion, both these alterations are commonly observed in HB cases.

**CONCLUSIONS**

Our study demonstrated that hemangioblastoma are strongly positive for CA9 which is identical to that in ccRCC and indicates dysregulation of VHL-pseudohypoxia signal pathway. In addition, 70% of HB had chromosome 3 deletion. These results suggest that some cases of HB had genetic change similar to that of ccRCC and HB would be suitable of anti-VEGF target therapy. However, we could not identify loss of VHL gene in 30% of HB cases. This indicates that those HB may use other molecular mechanism for down regulation of VHL gene, such as point mutations or promoter region hypermethylation which warrant for further study.