Methods and compositions for treating a subject suffering from adrenocortical carcinoma and having excess cortisol are disclosed. The methods provide therapeutic benefits including reduction of ACC tumor load, restoration of T-cell and natural killer (NK) cell signaling pathways, increase in T-cell and NK cell infiltration into the ACC tumor, reduction of neutrophil infiltration into the ACC tumor in the patient, and other therapeutic benefits. The methods include administration of a glucocorticoid receptor modulator (GRM) (which may be a selective glucocorticoid receptor modulator (SGRM)) and an antibody checkpoint inhibitor. In embodiments, the GRM (e.g., a SGRM) is orally administered. The GRM may be a nonsteroidal compound comprising: a fused azadecalin structure; a heteroaryl ketone fused azadecalin structure; or an octahydro fused azadecalin structure.