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[ADVANCED](#)[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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[\[PDF \(479K\)\]](#) [\[References\]](#)**Possible role of the RhoC/ROCK pathway in progression of clear cell renal cell carcinoma**

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ABSTRACT

To clarify the role of the Rho small GTP-binding protein (Rho) and its major downstream target, ROCK (Rho-associated serine-threonine protein kinase), in progression of renal cell carcinoma (RCC), we examined mRNA expression for Rho and ROCK genes in surgical specimen of RCC tissues from 78 Japanese patients and in the corresponding non-tumor tissues originating from the same patient using a real-time reverse transcription polymerase chain reaction (RT-PCR). Expression of mRNA for RhoA did not differ between tumor and non-tumor tissues. RhoB mRNA expression was higher in the tumor ($P < 0.05$), but expression was not associated with tumor grade, stage, or prognosis. However, degree of RhoC and ROCK mRNA expression was related to tumor grade ($P < 0.05$) and stage ($P < 0.0001$). A positive relationship was seen between expression of mRNA for RhoC and that for ROCK in tumor tissues ($P < 0.0001$). Kaplan-Meier plots showed high RhoC and ROCK mRNA expression to be negatively associated with overall survival ($P < 0.0001$). Multivariate analysis showed mRNA expression of RhoC and ROCK to be independent poor prognostic factors concerning overall survival. Our findings implicate the RhoC/ROCK pathway in carcinogenesis and progression of RCC, indicating that RhoC/ROCK may be a useful prognostic marker and a possible molecular target for treatment of the disease.

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