

Article 2

Association Between rs1859168/HOTTIP Expression Level and Colorectal Cancer and Adenomatous Polyposis Risk in Egyptians

Abstract

LncRNA HOTTIP is a new lncRNA that is strictly linked to the susceptibility, growth, propagation, and prognosis of several human cancers together with colorectal cancer. lncRNA HOTTIP rs1859168 may confer colorectal cancer susceptibility through regulating its gene expression level. To elucidate its role in colorectal cancer risk, we genotyped rs1859168A>C and measured serum HOTTIP expression level in colorectal cancer, adenomatous polyposis patients and controls by real-time polymerase chain reaction. The results displayed that rs1859168A>C single-nucleotide polymorphism is a risk factor for colorectal cancer among adenomatous polyposis patients and controls, AC versus CC genotypes [adjusted odds ratio (OR) = 2.256, 95% confidence interval (CI) = 1.316–3.868, P = 0.003] when compared with controls and (adjusted OR= 9.521, 95% CI = 3.330–27.217, P < 0.0001) when compared with adenomatous polyposis. Serum HOTTIP was upregulated in the colorectal cancer group when compared with adenomatous polyposis or controls [median (interquartile range) = 3.64 (2.46–5.02) (P < 0.0001)]. A significant difference in serum HOTTIP was found to be associated with different rs1859168 genotypes. rs1859168A>C and higher serum HOTTIP were significantly associated with distant metastasis, lymph nodes metastasis, and grade III of colorectal cancer. Both rs1859168 and high HOTTIP confer increased risk for colorectal cancer development. Keywords: HOTTIP, rs1859168, colorectal cancer