Prognostic value of TP53 Pro47Ser and Arg72Pro single nucleotide polymorphisms and the susceptibility to gliomas in individuals from Southeast Brazil


1Laboratório de Genética Humana e Biologia Molecular, Universidade Federal do Piauí, Parnaíba, PI, Brasil
2Laboratório de Oncogenética, Departamento de Genética, Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, SP, Brasil
3Fundação Pio XII, Hospital de Câncer de Barretos, Barretos, SP, Brasil
4Laboratório de Citogenética Humana e Genética Toxicológica, Departamento de Biologia, Universidade Federal do Pará, Belém, PA, Brasil
5Laboratorio de Oncogenética Molecular, Departamento de Cirugía Experimental, Hospital Universitario La Paz, Madrid, Spain

Corresponding author: G.R. Pinto
E-mail: pintogr@gmail.com

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ABSTRACT. The TP53 tumor suppressor gene codifies a protein responsible for preventing cells with genetic damage from growing and dividing by blocking cell growth or apoptosis pathways. A common single nucleotide polymorphism (SNP) in TP53 codon 72 (Arg72Pro) induces a 15-fold decrease of apoptosis-inducing ability and has been associated with susceptibility to human cancers. Recently, another TP53 SNP at codon 47 (Pro47Ser) was reported to have a low apoptosis-
inducing ability; however, there are no association studies between this SNP and cancer. Aiming to study the role of \textit{TP53} Pro47Ser and Arg72Pro on glioma susceptibility and oncologic prognosis of patients, we investigated the genotype distribution of these SNPs in 94 gliomas (81 astrocytomas, 8 ependymomas and 5 oligodendrogliomas) and in 100 healthy subjects by the polymerase chain reaction-restriction fragment length polymorphism approach. Chi-square and Fisher exact test comparisons for genotype distributions and allele frequencies did not reveal any significant difference between patients and control groups. Overall and disease-free survivals were calculated by the Kaplan-Meier method, and the log-rank test was used for comparisons, but no significant statistical difference was observed between the two groups. Our data suggest that \textit{TP53} Pro47Ser and Arg72Pro SNPs are not involved either in susceptibility to developing gliomas or in patient survival, at least in the Brazilian population.

\textbf{Key words:} Gliomas; Single nucleotide polymorphisms; \textit{TP53}; Pro47Ser; Arg72Pro