



Letter to the Editor

Clarification of data for a meta-analysis: p53 codon 72 polymorphism and prostate cancer risk

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Dear Editor,

Recently, we read with great interest the article “Meta-analysis demonstrates no association between p53 codon 72 polymorphism and prostate cancer risk” published in November 2011 in “Genetics and Molecular Research” (Li et al., 2011). Li et al. (2011) performed a meta-analysis to make an estimation of the association between codon 72 polymorphism of the p53 gene and prostate cancer risk. They concluded that there is no association between p53 codon 72 polymorphism and prostate cancer risk both in Caucasian and Asian populations.

Nevertheless, some methodological issues need to be addressed concerning the meta-analysis by Li et al. (2011). Importantly, using the same search strategy and end-of-search date as those of Li et al. (2011), we have located four relevant studies in Pubmed database with a total of 544 prostate cancer patients and 1005 controls (Wu et al., 1995; Hirata et al., 2007, 2009; Xu et al., 2010) (Table 1), which were not included in the meta-analysis even though they were consistent with the search criteria. Among them, two articles (Hirata et al., 2007, 2009) had duplicate data of cases and controls, so we selected the most complete and larger study (Hirata et al., 2007). Finally, three newly additional studies should be included.

Table 1. Characteristics of the additional four studies and distribution of p53 codon72 polymorphisms between prostate cancer and control individuals in the new meta-analysis.

First author (Year)	Country	Ethnicity	Case	Control	Case			Control		
					Pro/Pro	Pro/Arg	Arg/Arg	Pro/Pro	Pro/Arg	Arg/Arg
Hirata (2007)	Japan	Asian	167	167	22	89	56	26	80	61
Wu (1995)	Japan	Asian	28	403	2	14	12	44	189	170
Xu (2010)	China	Asian	209	268	41	129	39	86	140	42
Hirata (2009)	Japan	Asian	140	167	20	75	45	26	80	61

Secondly, one recent study by Ricks-Santi et al. (2010) reported the relationship between p53 Pro72Arg polymorphism and prostate cancer in men of African descent. However, Li et al. (2011) considered the race as Caucasian populations not Africans.

Moreover, in the statistical analysis section, the authors gave a P value <0.10 for the Q-statistic that indicated heterogeneity among the studies. Actually, a P value <0.05 rather than <0.10 for the Q-statistic indicates heterogeneity across studies (Xu et al., 2012).

Taking into account the aforementioned methodological considerations, we put all studies into a new meta-analysis, including three large eligible studies, and we observed that codon 72 polymorphism of the p53 gene was also not significantly correlated with prostate risk: Pro-allele vs Arg-allele (OR = 1.01, 95%CI = 0.85-1.20, $P_{\text{heterogeneity}} = 0.017$, $P = 0.936$, $I^2 = 55.2\%$), Pro/Pro vs Arg/Arg (OR = 1.01, 95%CI = 0.64-1.60, $P_{\text{heterogeneity}} = 0.002$, $P = 0.953$, $I^2 = 65.1\%$), Pro/Arg vs Arg/Arg (OR = 1.19, 95%CI = 0.91-1.56, $P_{\text{heterogeneity}} = 0.030$, $P = 0.207$, $I^2 = 51.2\%$), Pro/Pro + Pro/Arg vs Arg/Arg (OR = 1.12, 95%CI = 0.88-1.44, $P_{\text{heterogeneity}} = 0.045$, $P = 0.357$, $I^2 = 47.8\%$), and Pro/Pro vs Pro/Arg + Arg/Arg (OR = 0.88, 95%CI = 0.60-1.29, $P_{\text{heterogeneity}} = 0.003$, $P = 0.513$, $I^2 = 64.3\%$). Similar associations were also detected in subgroups by race and source of controls.

In conclusion, the results of the study by Li et al. (2011) should be interpreted with caution. To reach a definitive conclusion, further studies based on a larger sample size are still needed to assess the association of p53 gene codon 72 polymorphisms and serum expression with prostate cancer risk, especially in African and Caucasian populations. We believe that our remarks will contribute to more accurate elaboration of the results presented by Li et al. (2011).

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