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Expression of a Novel RAD23B mRNA Splice Variant in the Human Testis

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A gene coding a novel human RAD23B protein named RAD23-like protein B, presumably involved in spermatogenesis, was identified and characterized using a complementary DNA (cDNA) microarray. In the human testis, its expression was 2.33 times higher than it was in the embryo testis, with a particularly high expression in ejaculated human spermatozoa. The full length of this gene is 1548 bp, and the putative protein is 338 amino acids long. This protein is homologous to RAD23B, which is one of two human homologs of *Saccharomyces cerevisiae* RAD23, and is involved in both nucleotide excision repair (NER) and ubiquitin (Ub)-dependent proteolysis. However, RAD23-like protein B lacks the Ub-like (Ubl) domain that functions as a proteasome localization signal. Multiple-tissue expression profile of the messenger RNA (mRNA) that encodes the RAD23-like protein B also showed that it is highly expressed in the human testis and in ejaculated spermatozoa. Our present study indicates that this novel alternative splicing form of RAD23B is correlated with human spermatogenesis.

Key words: RAD23, alternative splice, ubiquitin, spermatogenesis, proteolysis, self-balance

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