



Identification of a novel human testicular interstitial gene, *RNF148*, and its expression regulated by histone deacetylases

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ABSTRACT. Multiple genes are restrictively expressed in mammalian testicular tissues, and they play important roles in the complex process of spermatogenesis. Investigation of these genes and their expression regulation mechanisms is valuable to elucidate the molecular process of spermatogenesis. In this study, we identified a novel human gene, ring finger protein 148 (*RNF148*) that is abundantly expressed in testes and slightly expressed in pancreas. *In situ* hybridization analysis showed that *RNF148* messenger RNA was mainly present in the interstitial cells of human testicular tissues, and immunohistochemical analysis confirmed protein levels in that location. Treatment with histone deacetylase inhibitor trichostatin A activated the expression of *RNF148* messenger RNA in a time- and concentration-dependent manner in HEK293T and HeLa cells, neither of which normally express *RNF148*. Chromatin immunoprecipitation analysis showed that trichostatin A treatment increased the binding of acetylated histone H3 to the *RNF148* gene

promoter. We identified a novel human testicular interstitial gene and observed that histone deacetylases regulate *RNF148* expression.

Key words: RNF148; Human testicular interstitial gene; Histone acetylation; Gene expression