Zhang et al. cloned a novel pituitary tumor transforming gene (PTTG). Zhang et al. reported PTTG expression in human pituitary neuroendocrine tumors and in normal pituitary tissue. In situ hybridization revealed PTTG expression in nonfunctioning and in GH-secreting adenomas but not in normal pituitary tissue. Using a more sensitive detection method, RT-PCR, low-level PTTG expression was detected in normal pituitary. However, when expression levels in normal pituitary tissue were compared with those in 54 pituitary tumors using comparative reverse transcription-polymerase chain reaction (RT-PCR), we found that most tumor samples expressed higher levels of PTTG. More than 50% PTTG increases were observed in 23 of 30 nonfunctioning pituitary tumors, all 13 GH-producing tumors, 9 of 10 prolactinomas, and 1 ACTH-secreting tumor, with more than 10-fold increases evident in some tumors. Furthermore, higher PTTG expression (P = 0.03) was observed in hormone-secreting tumors that had invaded the sphenoid bone (stages III and IV; 95% CI 3.118-9.715) compared with hormone-secreting tumors that were confined to the pituitary fossa (stages I and II; 95% CI 1.681-3.051). Therefore, PTTG abundance is a molecular marker for invasiveness in hormone-secreting pituitary tumors. The ubiquitous and prevalent expression of pituitary neuroendocrine tumor PTTG suggests that PTTG plays a role in pituitary tumorigenesis and invasiveness [1)].

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Zhang X, Horwitz GA, Heaney AP, Nakashima M, Prezant TR, Bronstein MD, Melmed S. Pituitary tumor transforming gene (PTTG) expression in pituitary neuroendocrine tumors. J Clin Endocrinol Metab. 1999 Feb;84(2):761-7. doi: 10.1210/jcem.84.2.5432. PMID: 10022450.