

24. BASIC FIBROBLAST GROWTH FACTOR EXPRESSION IN HUMAN OVARIAN FOLLICLES

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Basic fibroblast growth factor (bFGF) is a growth factor that is involved in cell proliferation, differentiation, and angiogenesis (1). It has long been known that bFGF acts as a powerful mitogen for various mammalian granulosa cells in culture (2). To investigate the possible involvement of bFGF expression in follicle initiation and growth, quantitative PCR on isolated human follicle populations was performed. Human ovarian biopsies were obtained from healthy fertile women undergoing tubal ligation. Oocytes and granulosa cells of follicles at different stages of growth were isolated with laser capture microdissection in RNase-free conditions. Follicles were characterized as primordial, primary, small secondary, large secondary or antral, using morphological criteria. Owing to the very small amounts of tissue retrieved for primordial and primary follicles, these samples were pooled for each patient. RNA was extracted from samples, reverse transcribed, and relative quantitation determined with TaqMan real-time PCR, using 18S rRNA as the endogenous control. The probe and primers for human bFGF were commercially available in a pre-developed assay mix (Assays-on-Demand: ABI). Preliminary results suggest an upregulation of bFGF mRNA expression with increasing follicle growth. This study demonstrates that a possible relationship exists between bFGF mRNA expression and follicle development.

(1) Gospodarowicz, D. *et al.* (1986) *Mol. Cell. Endocrinol.* **46**: 187–204. (2) Neufeld, G., *et al.* (1987) *Endocrinology* **121**: 597–603.