

# Morpho-functional study of human luteal cell subpopulations

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It has been reported that the mammalian corpus luteum is composed mainly of two subpopulations of luteal cells (large and small) of different morphology and function. The aims of this study were first to characterize cytologically the human corpus luteum throughout the luteal phase, and second to establish the in-vitro steroidogenic capacity of a well-defined human mid-luteal cell system. The results show that the most predominant (>70%) cell shape, is polyhedric, and the number of cells per unit area is significantly different in the early, mid- and late corpus luteum ( $P < 0.005$ ). Moreover, small cells (<22  $\mu$ m) were most common (56.8%) in all tissues analysed. On the other hand, both subpopulations synthesized progesterone, oestradiol and testosterone, although a significantly greater production of basal steroids was observed in large luteal cells ( $P < 0.05$ ). Nevertheless, the response of small cells to human chorionic gonadotrophin (HCG) was significantly greater ( $P < 0.05$ ) than that of