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Preparation of Epithelial and Stromal Cell Fractions from Immature Rat Prostatic Tissue Using Percoll Gradients

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A method is described for the dispersion, isolation, and partial characterization of epithelial and stromal tissue cells from the rat ventral prostate. Viable epithelial and stromal cells have been prepared from a collagenase and trypsin digest of immature rat ventral prostates. This mixed population of cells was fractionated on two continuous Percoll™(a modified colloidal silica) gradients to give an epithelial-enriched fraction and a stromal-enriched fraction (greater than 90% enrichment for each fraction). Cells were viable as demonstrated by exclusion of trypan blue dye and by their ability to metabolize testosterone. Acid phosphatase activity, a marker of androgen action in rat ventral prostate, was found predominantly in the epithelial cell fraction. This cell separation procedure provides a simple, rapid, and reproducible method for the isolation of prostatic epithelial and stromal cells that will be used for studies of androgen-mediated differentiation in rat prostate as it relates to changes in acid phosphatase activity. Separation of these different cell types should also permit investigation of some of their metabolic interactions.

Key words: prostate, androgens, testosterone

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