



Application of the immunofluorescence technique and confocal laser scanning microscopy for studying the distribution of the luteinizing hormone/chorionic gonadotropin (LH/CG) receptor on rat luteal cells.

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Author: J T Lakkakorpi
H J Rajaniemi

Author Affiliation: Biocenter University of Oulu, Finland.

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Abstract: We used confocal scanning microscopy to study the semi-quantitative distribution of luteinizing hormone/chorionic gonadotropin (LH/CG) receptors on rat luteal cells at both the two- and the three-dimensional level. The receptors were visualized in 6-microns sections of pseudopregnant rat ovaries using polyclonal rabbit antiserum to hCG-affinity-purified LH/CG receptor in conjunction with rhodamine-conjugated anti-rabbit immunoglobulins. Twenty to 30 optical sections were taken at different focal planes from representative luteal cells with a confocal laser scanning microscope and then processed digitally to two- and three-dimensional pseudocolored images. Distinct differences in fluorescence intensity could be demonstrated at both the two- and the three-dimensional level on the luteal cell surfaces, suggesting an uneven distribution of the LH/CG receptors on the cell membranes. This probably results in the compartmentalization and polarization of luteal cell function.

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