

**Structural Features and Localization of  
the Interstitial Cells of Cajal in Human  
Gastrointestinal Tract  
(Immunohistochemical and Histological  
Study)**

Thesis

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## **Abstract**

Interstitial cells of Cajal (ICC) are important players in the symphony of gut motility. They are the pacemaker cells in gastrointestinal muscles by providing impulses for slow wave generation and smooth muscle activity. Absence or altered integrity of the ICC network may have a dramatic effect on gastrointestinal motility.

Many ICC express a tyrosine kinase receptor (Kit receptor), this allows them to be recognized through their abilities to bind C-Kit antibodies.

In this study, we tried to investigate the distribution of ICC in "more or less normal" human using routine histological and immunohistochemical staining. Quantitative morphometric study was performed using the image analyzer computer system, statistical analysis were performed on the obtained results.

Microscopic examination of the immunohistochemically stained sections of the obtained segments of the "more or less normal" gastrointestinal tract, revealed that the histological structural features of the interstitial cells of Cajal varies in shape ,size and localities in the examined parts of the wall of the gastrointestinal tract .

The obtained results were discussed from the fact that, the different structural features of these cells and their different localities between the smooth muscle layers of the gastrointestinal tract may be of great importance to understand the causes of several human gastrointestinal

disorders as gastroparesis, idiopathic intestinal obstruction and chronic constipation.

**Keywords:**

Localization of interstitial cells of Cajal in human gastrointestinal tract.