Introduction

Colorectal cancer (CRC) is one of the most common cancers and the second most common cause of cancer mortality in Western societies ***(*** **Virk et al., 2010).**

Approximately, 142,600 new cases of large bowel cancer are diagnosed each year in the United States, of which 102,900 are colon and the remainder rectal cancers. Approximately 51,370 Americans die of large bowel cancer each year **(Jemal et el**., **2010).**

In Egypt according to National Cancer Institute Cairo University, it accounts for 4.34% of total malignancies and 15.87% of digestive system tumors being the fourth most common after lymphoid tumors ,breast and urinary tumors (**Mokhtar et al.,2007).**

Cancer is a stem cell disease because only stem cells have the ability to self-renewal and neoplasia is essentially dysregulated self-renewal **(Natasha et al ., 2010).**

Cancer stem cells have the capacity to differentiate into progenitor cells that in turn differentiate into all types of rapidly proliferating neoplastic cells within the same tumor forming tumor mass (**Boman and Huang.,2008)**.

Stem cells are one of the few cell types that are long-lived to acquire number of sequential mutations to convert a cell from the normal to malignant state **(Papailiou et al.,2010).** In CRC, mutation necessary for adenoma carcinoma sequence occurs in basal crypt stem cells . The acquisition of a mutation in the stem cell within a crypt results in dysplastic progeny and leads to the entire crypt filling up with dysplastic cells forming a monocryptal adenoma **(Sebastian et al**

.,2011). As the sequence progresses to the eventual development of a solid tumor ,more hits are acquired along with increasing genetic instability **(Sebastian et al ., 2011)**.

Prospective identification of colon cancer stem cells have received major attention because of their potential role for colon cancer treatment **(Ricci et al., 2007).**

Various immunohistohemical markers are used to detect stem cells as cKIT ligand that stimulates stem cell proliferation , alkaline phosphatase that is expressed in embryonic stem cells **(O'Connor et al.,2008*)***, OCT4 which is a transcription factor that's unique for pluripotent cells **(Ramirez et al .,2011)** CD24, CD44 in breast (**Giatromanolaki et al.,2011)**, CD45, CD31 and CD34 in lung **(Bertoncello and McQualter, 2010).**

CD133 is a stem cell marker which expressed in the colon but it was found to be expressed in normal epithelium and not specific for stem cells(**Barker et al., 2009**).

Lgr5(leucine-rich-repeat-containing G-protein-coupled receptor 5), also called GPR49 an orphan G –protein coupled receptor and Wnt target gene, has been identified as murine marker of intestinal stem cells and has been proposed to be potentially implicated in carcinogenesis of intestinal tumors.. An antibody to human LGR 5 is used to investigate the presence of immunoreactive intestinal stem cells **(Barker et al., 2009).**