INTRODUCTION

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Stem cells are unspecialized cells having two important characteristics that distinguish them from other cell types. First, these unspecialized cells can renew themselves for long periods through cell division. The second is that under certain physiological or experimental conditions, they can differentiate into specialized cell types such as the beating cells of the heart muscle or the insulin producing cells of the pancreas **(Wagers et al., 2002).**

There are two kinds of stem cells: embryonic stem cells which could be isolated from the blastocyst of the embryo. The adult stem cell which are undifferentiated cells found among differentiated cells in a tissue or organ and have a major role in tissue repair **(Robey, 2000 and Andras et al., 2006) .**

Any genetic mutation that leads stem cells to become independent of growth signals, or to resist antigrowth signals, will cause the stem cells to undergo uncontrolled proliferation and possible tumorigenesis **(Linheng and William, 2006).** Cancer stem cells are a subpopulation of tumor cells that possess characteristics normally associated with stem cells. They may be responsible for tumor relapse and metastasis **(Clarke et al., 2006).**

Various immunohistochemical markers are used to detect pluripotent stem cells as placental alkaline phosphatase that is expressed in embryonic stem cells **(Kakurai et al., 2002),** OCT4 which is a transcription factor that is unique for pluripotent cells **(Skotheim et al., 2003)** and stem cell factor (cKIT ligand) that stimulate stem cell proliferation **(Gerrard et al., 2005).**

The human endometrium undergoing cyclical process of regeneration, differentiation and shedding as part of menstrual cycle. The concept that endometrial stem cells are responsible for the remarkable regenerative capacity of endometrium was proposed many years ago. However, attempts to isolate, characterize and locate endometrial stem cells have only been under taken in the last few years **(Garett et al., 2007).**

Endometrial hyperplasia is considered a precursor of endometrial carcinoma, but concurrent endometrial carcinoma in patients with endometrial hyperplasia is seen frequently. When patients are diagnosed with endometrial hyperplasia, surgical intervention should be performed in those with cytological atypia and higher body mass index (BMI) because of the possibility of coexisting endometrial carcinoma **(Chen et al., 2009).**

In developed countries, adenocarcinoma of the endometrium is the most common gynecological cancer; however, in developing countries, it is much less common than carcinoma of the cervix. Mortality is higher in black women than in white women and the most common symptom is postmenopausal bleeding **(William et al., 2007).**

In Egypt : female genital tract tumors represent 4.7% of total malignancy with high adult predominance of 97.61 % . Endometrial carcinoma represent 14.27 of female genital tract tumors, 89.7% of them are adenocarcinoma **(Moktar et al., 2007).**

Established stem cell markers such as CD117 and OCT-4 have been detected in endometrium; however, marker expression is either not restricted to stem cells or formal proof of stem cell properties is lacking. Thus, there is a need to identify immunohistochemical markers specific for endometrial stem cells **(Gotte et al., 2008).**

Musashi-1 (Msi1), a RNA-binding protein (RBP), has been postulated to play important roles in the maintenance of the stem-cell state and differentiation. Loss of Musashi-1 function disrupts the balance between germ-line stem cell renewal and differentiation, causing premature differentiation and tumorigenesis (**Siddall et al., 2006).** It is expressed by epithelial progenitors in gastric mucosa, gut, mammary glands, epidermis and hair follicles **(Gotte et al., 2008 and Susaki et al., 2009).**