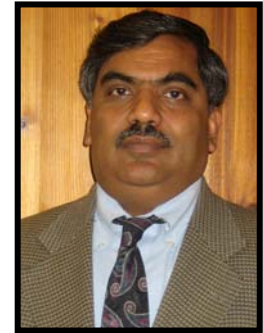


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The long-range objective of Dr. Tekmal's research is to elucidate the role of hormones and growth factors and their receptors in the initiation and progression of breast, cervical and ovarian cancers. Using our novel **aromatase** transgenic mice model we have demonstrated for the first time that increased mammary estrogens leads to the induction of various preneoplastic and neoplastic changes that are similar to early breast cancer. On going studies focus on cross-talk between local estrogen/estrogen receptor-mediated action with oncogenes, growth factors, and tumor suppressor genes to initiate/promote breast cancer as well as design and testing of novel therapeutic approaches for the prevention and treatment of breast, cervical and ovarian cancers using both *in vivo* and *in vitro* model systems.

We are also first one to show that aromatase is overexpressed in some cervical tumors suggesting an *in situ* role for tissue estrogen in cervical malignancy. On going studies are aimed at further investigating the importance of tissue estrogen in cervical malignancy using both *in vitro* and *in vivo* model systems.

Our current studies have shown that both macrophage colony stimulating factor -1 (CSF-1) and its receptor, c-fms regulate the proliferation of endometrial, mammary and other epithelial cells through an autocrine mechanism. Using an *in vivo* transgenic animal model we have also demonstrated that these genes play significant role in the initiation breast and ovarian cancers. Further more we have shown CSF-1 and c-fms also plays an important in the pathophysiology of endometriosis.

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