Chapter II

Aims and Objectives
The drug Placentrex is found to be wonderfully efficacious against wound healing and is a thoroughly recommended product by physicians in many wound-healing cases. Though the efficacy of the drug is well established, but there is not much information available regarding the mechanism of wound healing caused by Plx. During the whole process of healing, cell migration appears to be the rate-determining step and is a prerequisite for wound healing. Deciphering the molecular mechanism of cell migration (enroute wound healing) caused by the key molecule of Plx would throw some insight into the understanding of the healing process altogether. These informations can also lead to better treatment of patients with various healing abnormalities.

The aims and objectives of the present study has been -
1. Analysis of the key components of Placentrex and validation of the product with respect to different production batches.
2. To establish the cell migration phenomena caused by Placentrex using Boyden chamber assay.
3. To find out the key factor/factor(s) of Placentrex which cause(s) cell migration by using chromatographic techniques.
4. To establish the cell migration phenomena caused by the key factor of Placentrex by -
   a) Boyden chamber assays.
   b) F-actin polymerization assays.
   c) Time-lapse video microscopies.
   d) Actin cytoskeleton polarization assays.
   e) Cell adhesion assay.
5. Probing into the signaling emanating from binding of the key factor to cognate receptor and culminating to phenotypic cell migration with the involvement of several signaling molecules as-a) Rac2 GTPase.
   b) Vav1 GEF.
   c) PI3K.
   d) Lck.
   e) Syk.