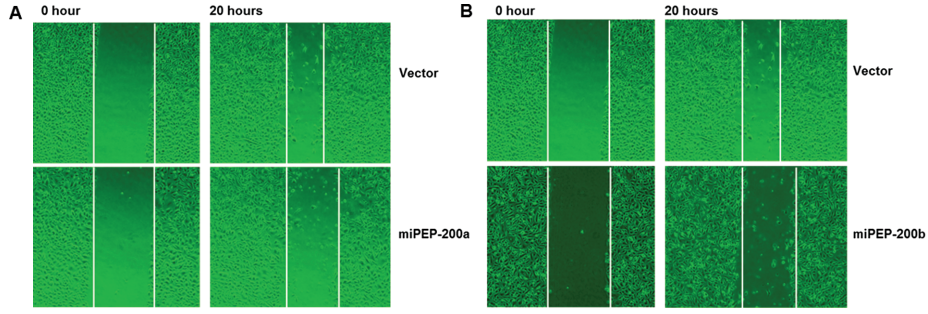

Figure 3. **miPEP-200a and miPEP-200b inhibit the migration of prostate cancer cells. PC3 cells were transfected with vector or expression plasmid (A) pcDNA3-HA-miPEP-200a and (B) pcDNA3-HA-miPEP-200b and the migration was measured in scratch wound assay. Representative pictures of the size of the scratch wound at 0 and 20 hours after wound were shown.**

all human, animal and plant kingdoms and other living creatures. Thus, these results will probably revolutionize our understanding of biology per se.

We propose that noncoding DNA (so called junk DNA representing 98% of the genome) can use its transcriptionally active non-coding RNAs (such as miRNAs and lncRNAs) and also its translatable peptide/proteins as double edged sword to control cell growth and development of not only humans, animals and plants but also all the living organisms on this planet. Thus, these results will probably transform our understanding of biology per se. In addition, it is also the time to rethink about the new role of messenger RNA (mRNA) of known genes as regulators of biological function of cells like in the case of miRNAs and lncRNAs. In future, if one proves that mRNA may act like miRNA or lncRNA, this will totally change our present understanding of the biological function of coding and non-coding DNAs and RNAs.

In summary, if our logical reasoning that pri-miRNA encoded peptides/proteins are present in all mammalian cells (Fig. 5) and they may regulate the growth and development of normal and cancer cells is true, pri-miRNA encoded peptide signatures will be tested in future as novel clinical biomarkers to further subtyping of cancers and their potential for predicting metastasis. In addition, pri-miRNA encoded peptides that function as tumor suppressors or metastatic suppressors can be used as therapeutic agents to target cancer cell growth and their metastatic potential. Therefore, identification of normal and cancer specific pri-miRNA encoded peptides will greatly accelerate early detection of all cancers, diseases and also their treatment. In addition, identification of disease specific pri-miRNA encoded peptides/proteins will also accelerate early detection of other human diseases such as Alzheimer's, Parkinson etc. and also their treatment. These pri-miRNA encoded peptides/proteins can be synthesized and also can be altered so that they function as better therapeutic agents. Thus, these results (proving the existence of pri-miRNA encoded biologically active peptides/proteins in mammalian cells) will revolutionize the biology field per se as they may be involved in growth and development of all humans, animals, plants and other living creatures. Based on our results, we predict that there will be a great number of publications describing novel pri-miRNA encoded peptides/small proteins in eukaryotic and prokaryotic cells will be forth

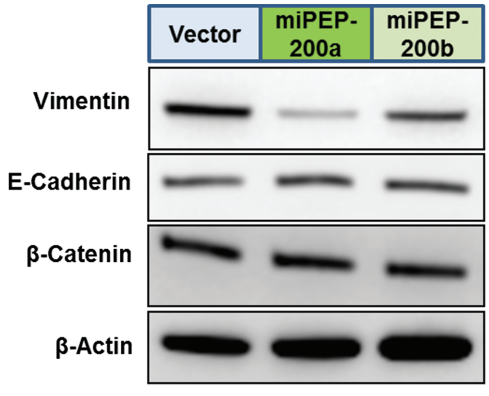

Figure 4. **miPEP-200a and miPEP-200b inhibit the expression of Vimentin in prostate cancer cells. PC3 cells were transfected with vector or expression plasmid pcDNA3-HA-miPEP-200a (A) and pcDNA3-HA-miPEP-200b (B). Total cell extracts were prepared at 48 hours after transfection and were subjected to SDS-PAGE followed by western blot analysis using specific antibodies.**

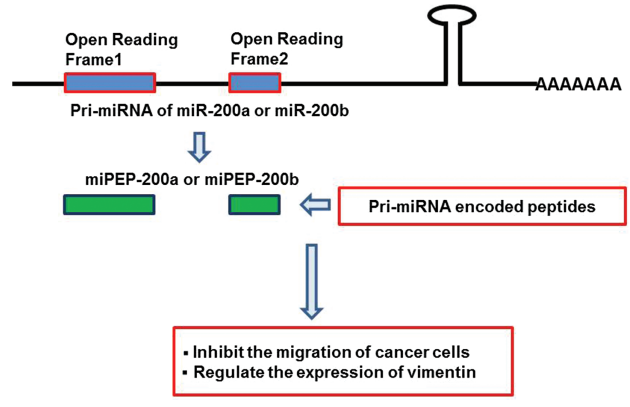

Figure 5. **pri-miRNA encoded peptides miPEP-200a and miPEP-200b and their function.**