Name: Gaurav Kaushik
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Attached CV: CURRICULUM.doc (74 KB) -- Checked By McAfee Anti-Virus
Covering Letter:

Dear Dr. Dragnea,
Indiana University,
US

Hello

I am a PhD student working under the tutelage of Professor K. L. Khanduja, at Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh. I am going to submit by thesis soon (31Ist April, 2006).

The area of my research has been molecular oncology and cell biology. A couple of papers pertaining to my work and related works have been published in international journals. It has been my greatest desire to pursue my work in a research laboratory that is accredited, has a reputation of its own among the scientific community and is a pioneer in the field of nanotechnology. I would consider it as an opportunity to change my career prospects from an ?also-ran? to a front-runner in this field if I am able to pursue my work on ?molecular and immunological of nanotechnology in diagnosis and treatment of life threatening diseases? under your esteemed supervision. It is my dream to work in such as excellent laboratory having very excellent work atmosphere. I will try my to put my best efforts.

Kindly go through my resume (attached). I shall be greatly indebted for your valuable and early feedback.

Thanking you

Gaurav Kaushik
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Work Eligibility: No, I am not currently in possession of a US work permit.

My view in few words

Cancer treatment is still far from its destination. Various approaches are being used in the control and cure of cancer. Beside all other facts and factors, proteins malfunctioning play a key role in initiation, progression and metastasis of cancer. This malfunctioning of proteins may be due to chemical, physical and genetic factors. As the proteins are working horse of mammalian cells, thus protein profile

of normal cell, transformed cell and metastasized cell may be helpful in decoding the basic pathways involved in protein malfunctioning during energy generation, cell signaling, cellular metabolism and cellular death during the process of cancer initiation, progression and metastasis. Here energy generation and energy crisis may be the important phenomenon for running all these process ranging from malfunctioning of protein to synthesis and functioning of protein in cancer development. These few lines force us to think the following question: -

1. What are the sources of energy for cells to survive in extreme nutrient deprived condition in the tumors? And what are the factors involved in this process?
2. Does energy crises make cells more susceptible to transformation or metastasis?
3. Does cells revert back to the pathway of dedifferentiation?
4. Does proteins play a key role in this process of dedifferentiation?
5. What is the role of protein-protein and protein-gene interaction in process of dedifferentiation and various stages of carcinogenesis?

If we will be able to explore these basic objectives then it may be possible to design chemotherapeutic drug based on the pathways involved in these basic survival process of normal cell, transformed cell and metastasized cell during the process of carcinogenesis. For the execution of this work we may use Laser Capture Microdissection techniques, Mass spectroscopy, SALDI, micro array etc. Cell culture techniques, microscopy (especially fluorescence and confocal), transgenic mice and other advanced bioinformatics techniques may also be used in this project. This work may explore the basic pathways involved in evoking the process of carcinogenesis and will delineate the role of energy crisis and signaling in carcinogenesis. We will be able to predict the proteins' involvement in these processes. In the end, I will like to say that I will concentrate on the source of energy in cancer cell and how normal lung cell follow the path of transformation.