

Study of Some Trade Related Aspects of the Participation of Several Indian Scientists in the Drug Discovery Program of the National Cancer Institute (USA)¶

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A case study of trade related aspects of the participation of a school of several Indian Scientists during the last 25 years in anticancer and/or anti-HIV drug discovery program of the National Cancer Institute (NCI) of USA has been carried out. The research work of the case was duly funded by Indian agencies viz., CSIR and UGC besides involvement of a number of government employees and assets, no trade related aspects were considered. The study reveals that the NCI (USA) continuously gained experience, knowledge, more power of purchase at the cost of Indian resources, money, material and technically expert skilled manpower and finally launch the products in the world market including India a targeted potential customers. Despite of significant contribution from Indian side the financial returns were extremely meager. In view of the double drain of Indian resources, development of awareness of trade related aspects of intellectual property rights among scientists and research funding agencies including government protected trade related concepts of scientific and medicinal research work in India needs urgent attention.

Key Words: IPR, Anticancer, Anti-HIV, AIDS.

INTRODUCTION

First research paper of the school of several Indian scientists that attracted attention of the National Cancer Institute of USA was published in 1978 by Jolly *et al.*¹ evidently offering “free of cost” investigation of anticancer and/or anti-HIV *in vitro* tests asking the structure and chemical formulae of potential drug before any such screen. Totally unaware of the trade related aspects of the deal, more than 35 members of the research group participated²⁻¹¹ in the Drug Discovery program of NCI (USA) during the last 25 years, supplied hundreds of unique and new organic compounds

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in several installments at the cost of Indian resources duly funded by agencies like CSIR and UGC *etc.* besides involvement of several other government employees and assets causing, unknowingly, exorbitant cumulative invest of money and material and ultimately skilled and expert manpower student of the school that virtually left India to join the NCI (USA) recently and obviously disclosing all the technical expertise, know how skill developed by the school of the Indian scientists during the past 25 years.

The NCI (USA) peoples provided various reports of anti-tumour and/or anti-HIV *in vitro* screens, along with letters of precise appreciation and no money except one time payment of an extremely meager amount of almost rupees two lakh. The NCI (USA) peoples were aware of the trade related aspects of scientific research work in this potential field, were using the words like “supply and purchase” for example and asking full chemical details of structure and formulae before any such screen in view of future trade potential and super hand.

Estimated cost of some of the different classes of synthetic organic compounds sent to NCI (USA) for anti-tumour and/or anti-HIV screens by the group of Jolly *et al.*¹ in the last 25 years is worked out in Table-1 and is about Rs. 92500/-.

TABLE-1
ESTIMATED COST OF SOME OF THE IMPORTANT CLASSES OF
SYNTHETIC COMPOUNDS SENT TO THE NCI (USA)

Class/Group	Cost of synthesis of 10 g unique sample	No. of unique samples sent	Total cost (Rs.)
Acid hydrazides	150	25	3750
Dianilides	150	25	3750
Pyrazolones	200	30	6000
Azlactones	200	30	6000
Coumarins	300	30	9000
Formazones	400	30	12000
Anils	400	30	12000
Cyanine dyes	500	25	12500
Thiosemicarbazones	500	25	12500
Other	300	50	15000
Total investment Rs.			92500

The Indian and foreign agencies from which funds were duly drawn by the school of Jolley *et al.*¹ carrying work at two different post graduate colleges of central India *viz.*, Maharaja College, Chhatapur and Government Model Science College, Gwalior involving state government assets and employees and Cancer Hospital and Research Centre, Gwalior are presented in Table-2.

TABLE-2
FUNDING AGENCIES OF THE SCHOOL OF JOLLY *et al.*¹
DURING THE PERIOD OF STUDY

Funding agency	Means/Heads	Total no.
CSIR (New Delhi)	JRF	4
UGC (New Delhi)	JRF	5
MAP Cost (Bhopal)	Research projects	3
MP State Govt. (Bhopal)	Contingencies grant	Annually
CHRI (Gwalior)	Contingencies grant	Annually
NCI (USA)	Grant	Once

The Indian profile: The Indian profile in the National Cancer Institute (USA) is high. The most potent anti-cancer drug Taxol was first identified by an India born scientist, W.C. Wani¹². Recently, the chief drug synthesis and chemistry branch of NCI (USA) was V.L. Narayanan.

The NCI (USA) continuously appreciated the contribution of V.S. Jolly as ardent supporter of the drug discovery programme of NCI (USA) and appreciated several times the contribution of his students. One of his students from SMS Government Model Science College, Gwalior, Ms. Pornima Phatak, is now working as research scientist in NCI at Bethesda Maryland (USA).

Several other similar schools of Indian Scientists have also participated in the drug discovery program of NCI (USA). Two important schools are following: (1) Institute of Science, Nagpur. (2) Indian Association of Science, Jadavpur, Kolkata.

RESULTS AND DISCUSSION

Active participation of the school of Indian scientists during last several years in the anticancer and/or anti-HIV drug discovery program of the NCI (USA) duly funded by Indian agencies and assets without any proper consideration of trade related aspects resulted into the drain of Indian resources on one hand and migration of trained and specific job oriented scientists from the country on the other hand. This double drain contributed exorbitantly the NCI (USA). The NCI (USA) gained experience, the knowledge and the technical know-how becoming the world-leader in the market of drugs and medicine and some of the major manufacturers are Glaxo Smithkline, Bristol Myers, Squibb, Roche Holding, Abbott Laboratories *etc.* The annual therapy cost of cancer and/or AIDS patients is 20-30 times greater than similar cost of any other ailment and the returns are about several hundred times of the cost of investment.

Conclusion

The study reveals the association of international trade with research work conducted in India, specially in the field of science and medicine requires trade related aspects of intellectual property rights in India to be considered well to protect the national interest facing the crucial situation of double drain continuously since long.

To deal with the health problems about the debatable AIDS issues, Indian Organizations may concentrate more on the Indian National resources.

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