

1. Brief description of the ongoing research work-

a. Intramural Projects :

Modulation of tumor markers by dietary phytochemicals sensitize cancer cells towards chemotherapeutic drugs
Role of tea in skin cancer: a mechanistic study
Isothiocyanate: Role in enhancing platinum accumulation in cervical cancer

b. Extramural Projects :

Modulation of Cytotoxicity and Genotoxicity of Arsenic compounds in Mammalian cells by Tea Extract and its Polyphenols	National Tea Research Foundation, TEA BOARD
Role of Tea Polyphenols on the Sensitivity of Human Leukemic Cells to apoptosis	National Tea Research Foundation, TEA BOARD
Induction of tumor cell apoptosis via modulation of protein kinase C and suppression of telomerase by natural polyphenols and isothiocyanates.	Dept of Science and Technology (DST)
Effect of Tea Polyphenols on Invasive Potential of Tumor Cells	National Tea Research Foundation, TEA BOARD
Cytotoxicity and Genotoxicity of Arsenic Compounds and their Modulation by Natural Factors	Indian Council of Medical Research
Role of Curcumin in protecting DNA damage in lymphocytes from human population chronically exposed to arsenic in West Bengal	Dept of Bio Technology
Modulation of heat shock proteins in tumor cells by natural isothiocyanates	Council of Scientific and Industrial Research
An investigation on the expression of various protein tyrosine kinases and their phosphorylated forms in different stages of the development of oral squamous cell carcinoma	DBT
Modulation of therapeutic targets Aurora kinases A and B by phytochemicals in breast cancer cells.	DST
Comparative study of population chronically exposed to arsenic in two different demographic regions of Eastern India: Identification of responsible genes and susceptible population	DBT

c. Projects for students :

Role of tea in mitigating arsenic toxicity- a detailed mechanistic study in Swiss albino mice.	Indian Council of Medical Research
Involvement of Caveolae and Caveolin-1 in EGCG mediated signaling mechanism in human breast cancer cells	DST-WOSA
Curcumin as supplement with conventional chemotherapeutic drugs in modulation of tumor markers in leukemia cell lines	DST-INSPIRE
Role of tea in squamous cell skin carcinogenesis in mice model	UGC NET

2. Publications-

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13. **Roy M**, Chakraborty S, Sinha D, Bhattacharya RK, Siddiqi M (2003). Anticlastogenic, antigenotoxic and apoptotic activity of epigallocatechin gallate, a green tea polyphenol. *Mutation Research*; (523-524):33-41.
14. Sinha D, **Roy M**, Dey S, Bhattacharya R.K (2003). Modulation of Arsenic induced cytotoxicity by tea. *Asian Pacific Journal of Cancer Prevention*; 4(3):233-238.
15. Chakraborty S, **Roy M**, Taraphdar AK, Bhattacharya RK (2004). Cytotoxic effect root extract of *Tiliacora racemosa* and oil of *Semecarpus anacardium* nut in human tumor cells; *Phytotherapy Res*, 18(8):595-600.
16. **Roy M**, Chakraborty S, Sinha D, Kundu T, Bhattacharya RK (2004). Polyphenol and Cancer, *Science and Culture*, 70(3-4), 136-141.
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19. Kundu T, Dey S, **Roy M**, Siddiqi M, Bhattacharya RK (2005). Induction of apoptosis in human leukemia cells by black tea and its polyphenol theaflavin, *Cancer Letters*; 230 (1):111-121.
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29. Chakraborty S, **Roy M**, Bhattacharya RK (2006). Tumor cell apoptosis by phytochemicals and herbal extracts: Herbal Drugs, *A twenty First Century Perspective* Eds. R H Sharma and Rajesh Arora, JAYPEE Brothers, Article 35, pg 342-351.
30. Sinha D, **Roy M**, Bhattacharya RK (2006). Role of tea in combating arsenic toxicity, *Amala Research Bulletin*, 26: 1-14.
31. Mukherjee S, U Ghosh, Bhattacharya NP, Bhattacharya RK, Dey S, **Roy M** (2007). Curcumin Induced Apoptosis in Human Leukemia Cell HL-60 is Associated with Inhibition of Telomerase Activity. *Molecular and Cellular Biochemistry* 297, pp 31-39.

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62. Madhumita Roy, Apurba Mukherjee, Sutapa Mukherjee & Jaydip Biswas (2016) Phytonutrients from fruits and vegetables in breast cancer control, *Indian Perfumer*, Vol. 60, No. 3.
63. Madhumita Roy, Apurba Mukherjee, Sutapa Mukherjee, Jaydip Biswas (2017) Nutraceuticals in leukemia, *Journal of Ayurvedic and Herbal Medicine*, 3(1), 41-47.

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65. Madhumita Roy, Apurba Mukherjee, Sutapa Mukherjee, Jaydip Biswas (2017) Drug Resistance in Leukemia: Remediation by Natural Means. *Biomed Res J* 2017;4(1), 8-27.

3. Academic activities-

- I. Thesis awarded -3**
- II. PhD students (registered to CU and JU) -5**
- III. Short term training programme – More than 100 students from different institutions and universities were trained in the department for various time periods in the Department of Environmental Carcinogenesis & Toxicology**
- IV. Coursework Topics covered-**
 - a. Crystallography**
 - b. Toxicology**
 - c. Microscopy**
 - d. Protein synthesis**
 - e. Apoptosis**