ICMR International Travel Support for Non-ICMR Scientist

No. 3/2/TG-52(37)/HRD-2014

- **Name & Designation** : **Ms. Shilpa Thakur, Ph. D. Student**
- **Address** : **Dept. of Biochemistry, PGIMER, Chandigarh-160016**
- **Name of the International Conference/ Seminar/Symposium/ Workshop** : **Federation of American Societies for Experimental Biology Science Research Conference (FASEB-SRC)-2014.**
- **Title of the abstract accepted** : **Regulation of folate transporters in human kidney cell under conditions of folatedificiency and ethanol exposure.**
- **Date & Venue** : **3-8th August 2014. Colorado.**
- **Money sanctioned** : **Rs 1,00,000/-**
- **Money reimbursed** : **Rs 77,958/-**

Participation Report

- Organization of Training/ Workshops (No. of participating Countries, No. of Session etc, (Not more than 100 words):

Conference was organized by FASEB (Federation of American Societies for Experimental Biology). For over 30 years FASEB is hosting science conferences to encourage experimental biologists working in research areas undergoing rapid advances. More than 20 countries participated in the conference. 55 oral talks and 45 poster presentations were given by eminent scientists, post-doc fellows and research scholars in various sessions. Conference was divided into nine sessions and each session had talks on a pre-fixed scientific agendas.

(i) Academic highlights of the Conference/Training/Workshops, including major recommendation and the following:

New development presented at the Conference/Training/ Workshops :
Various research developments were presented in regard to
a) methionine metabolism in liver injury,
b) biomarkers and interventions for population wide cobalamin and folate deficiency,
c) molecular mechanisms for effects of vitamin deficiency,
d) brain development and behavior effects of folate and cobalamin.

(ii) New development resulting from the Conference/Training/Workshops: Numerous new developments were shown in the conference in terms of one carbon metabolism, a few of which are listed below:

1. A study conducted on mouse model of Wilson disease indicates that pathogenesis of Wilson disease includes alterations in methionine metabolism that can be modified by maternal in utero factors.
2. Inhibiting Betaine—homocysteine S-methyltransferase and folate cycle together prevent DNA remethylation completely, indicating that both contribute to methyl pool in the inner cell mass that is required for establishing the embryonic epigenome.
3. The deficiency in folate and vitamin B12 influences cell proliferation, differentiation, reticulum stress and energy metabolism through epigenomic mechanisms related to imbalanced acetylation/methylation.
4. 800µg folic acid daily intake has therapeutic potential to lower arsenic levels in blood.
5. Low dose and targeted B-vitamin interventions can significantly modify cardiovascular disease risk factors in different populations with considerable clinical and economic implications.
6. Taking folic acid supplements during the first month of pregnancy could reduce risk for autism spectrum diseases in children, including siblings of children with autism spectrum diseases and could also affect the child's LINE-1 DNA methylation.

(iii) Name of the Publication in case your work is recommended for publications : None

8. Participant's contribution to the conference/training/ workshops: I have given oral presentation on the topic "Regulation of folate transpoters in human kidney cells under conditions of folate deficiency and ethanol exposure". I have reported increase in expression of folate transporters on folate deficiency and ethanol exposure. The observed increase in expression of folate transporters in folate deficiency was due to increase in rate of transcription of folate transporters however in case of ethanol exposure the underlying transcriptional mechanism still needs to be elucidated.