DiaComp Pilot & Feasibility Program - 2014

There is strong evidence that diabetic complications are linked via dysregulation of common pathways. The Diabetic Complications Consortium (DiaComp) promotes communication and collaboration between research communities investigating similar pathologic mechanisms in different organs by organizing and annual scientific meeting and funding new basic and translational research activities.

The DiaComp P&F program solicits proposals that advance the mission of DiaComp and welcomes applications that are either general in nature or that target specific areas of interest.

Applicant: CHAUDHURY, ARUN

Project Title: Defects in transcytosis may cause multiorgan diabetic complications

INDIVIDUAL CRITERIA SCORES

Please provide individual scores for the following 5 review criteria. Scores should range from 1-9 with 1 being outstanding.

1) Significance **3**

2) Investigator(s) **3**

3) Innovation **2**

4) Approach **3**

5) Environment **4**

WRITTEN COMMENTS - *please address the following points:*

·Does the proposal have high scientific merit

·Will the proposal further the mission of the DiaComp

·Will the proposal significantly advance/impact the field in the complication(s) being addressed

Overall questions:

1. Does the proposal have high scientific merit?—yes, the proposal looks at possible basic mechanisms of dysregulation in DM.
2. Will the proposal further the mission of DiaComp?—yes, since the potential knowledge could have wide impact in diabetes research.
3. Will the proposal significantly advance/impact the field—yes, if shown to be valid.

Summary: This proposal deals with aspects of cell anatomy and physiology related to diabetes mellitus (DM). The grant application points out that trans cellular movements of biologic factors can occur in a variety of settings and purposes such as neuromuscular and hormonal function. Also discussed in this proposal is that force generating proteins (such as myosin Va) can help facilitate transport of vesicles and proteins and that myosin Va appears to be absent in the enteric nervous system of animals shortly after developing DM whereas nNOS appears to be much more preserved. The proposal also explains that glucose uptake relies on myosin Va and NO, that myosin Va transports nNOS and that skeletal muscle light microscopy may identify dysfunction of nNOS in DM. The proposal aims to examine altered patterns of cellular myosin Va and other related factors regarding cell membrane function of enteric nerves. The proposal hopes to relate this dysfunction to a variety of abnormalities seen in DM such as enteric nerves, beta cells and skeletal muscles and that these abnormalities may exist in both NIIDDM (type2) and type I DM with clinical pathology.

Comments on scores:

Significance—this is a basic proposal that if shown to be true could have widespread implications for clinical care.
Investigator—young but experienced in the areas of this proposal.
Innovation—very innovative ideas.
Approach—logical. Although no specific hypothesis is outlined in the abstract the approach flows well from the data presented.
Environment—very adequate based on previous work. .

and an
Overall Score—solid proposal

OVERALL IMPACT SCORE

Please provide an overall 'impact' score for the proposal (1-9). Feel free to weight the 5 individual scores as you see fit. It does NOT have to be the average of the 5 scores.

OVERALL IMPACT SCORE **3**