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Dear Michal,

I am delighted to continue our very fruitful collaboration on intermediate filaments (IF). Our last years' paper together with the group of Aleksander Edelman in *EMBO Molecular medicine* is an fantastic example how integrated approaches of molecular and cell biology, medicine and biophysics powerfully improve our insight into complex biological processes, in this case involving the interaction of intermediate filaments (IF) and a channel protein during transit to the plasma membrane. I am very excited now about the possibility to investigate the molecular dynamics of IF proteins and their specific domains with Hydrogen-Deuterium-Exchange, coupled with mass spectroscopy, that you have mastered in your laboratory. This approach will bridge the gap between data obtained by us with X-ray crystallization and biochemical studies on the kinetics and the mechanism of assembly of IFs. In particular, it would be a great opportunity to employ your expertise with this powerful technique for disease mutants of various IF proteins in order to elucidate the pathomechanisms that are initiated by these mutations. Here, we have robust knowledge on various desmin mutations, derived from patients with muscular dystrophy and cardiomyopathy, as reported in a series of publications between 2004 and 2014. I expect the contribution of your laboratory to the development of knowledge in the field of the cell structure as very important. The two manuscripts we already wrote on IF-protein domain dynamics will be of highest significance for the understanding of IFs.

I would be able to offer help in the areas of generating highly purified preparations of vimentin and desmin as well as of several mutants. For characterization of filament properties, we will provide our complete state-of-the-art collection of methods to work with IF proteins including analytical ultracentrifugation, viscometry, electron microscopy as well as atomic force and total internal reflection fluorescence (TIRF) microscopy.

With very best regards

Yours



(Harald Herrmann)

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