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Biocomplexity Faculty Search Committee,
c / o Prof. Rob de Ruyter van Steveninck,
Department of Physics,
Indiana University,
Swain Hall West 117,
Bloomington, IN 47405-7105

November 1, 2004

Dear Biocomplexity Faculty Search Committee,

It is my pleasure to recommend Yongjoo Jeong for a tenure-track, assistant professor position in your department. My laboratory has collaborated with Dr. Smita Patel, Yongjoo's postdoctoral advisor for more than two years now. During this period, Yongjoo has worked closely with my postdoc Ivan Rasnik on a project that uses combination of single molecule analysis and ensemble kinetic tools to understand the mechanism of DNA unwinding and Holliday junction branch migration by the T7 helicase. This work led to a major new insight on the role of ring helicases in branch migration: contrary to the previous active model which viewed the helicase as a DNA pump that pulls DNA through its center and causes basepair disruption, our study indicated that the helicase simply walks on the DNA unidirectionally and rectifies the DNA's spontaneous branch migration. Yongjoo's ensemble kinetic data played an important role in validating single molecule approaches and our new model. A manuscript is in preparation for publication in a high profile journal. During this collaboration, I was continually with Yongjoo's experimental skills and creativity. Whenever we ask him for an experiment, he would provide us with high quality data in no time. He would also go one step further to design next generation experiments. For example, he is the one who first pursued branch migration by double hexamers by loading two helicases from two well defined sites.

I am also well aware of other works he has done in the Patel lab. His PNAS paper is of exceptionally high quality and compared the rate of DNA unwinding and ssDNA translocation by the T7 helicase. This led him to conclude that DNA unwinding is a passive process for the helicase alone, and the speed is several times slower than translocation. A new collaborative work together with another postdoc in the Patel lab showed that the T7 helicase becomes highly processive and moves as fast as ssDNA translocation when it is coupled with a T7 DNA polymerase, an astounding finding that should shake up the way we view these enzymes.

It is very clear to me that Yongjoo obtained an excellent training in molecular biology and fast kinetic studies from Dr. Patel. I listened to his platform presentation in the Biophysical Society meeting two years ago. It was very well delivered and well received. I recommend him strongly without any reservation.

Sincerely,
Taekjip Ha
Associate Professor, Physics Department

A handwritten signature in black ink, appearing to read 'Taekjip Ha'.