

SCHOOL OF MEDICINE DEPARTMENT OF CELL AND DEVELOPMENTAL BIOLOGY

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Yves Brun Systems Biology/Microbiology Faculty Search Department of Biology Indiana University Jordan Hall 142, 1001 E 3rd Street Bloomington, IN 47405-7005

Dear Search Committee,

I am writing this letter in strong support of Dr. Sunjong Kwon's application for a faculty position at Indiana University. Sunjong joined Oregon Health and Science University as a Research Assistant Professor in the laboratory of Dr. Bruce Schnapp in September of 2001. His laboratory space is located immediately adjacent to mine and over the past three years he has become a valuable colleague. For the past three months, Sunjong has been working in my laboratory.

Sunjong was the major driving force behind work being done on RNA localization in the Schnapp lab. His recent studies follow up on the discovery of an RNA binding protein, Vera, by a previous postdoctoral fellow in the lab. Vera was initially characterized as a protein involved in trafficking RNA encoding the TGF-ß family member, Vg1, to the vegetal pole of *Xenopus* oocytes. Sunjong went on to identify the cis acting sequences located within the untranslated region of Vg1 that bind Vera and showed that these same conserved sequences are present within other vegetally localized RNAs, such as VegT. He has since extended his studies to examine RNA localization in *Drosophila*, in order to take advantage of the power of genetic analysis. His recent studies, which have been submitted for publication, have led to a number of novel and unexpected findings regarding Vera function. These findings are likely to have a major impact in the field of RNA localization and translational control in both vertebrate and invertebrate species. They also provide a logical starting point for the work that Sunjong proposes to do as an independent investigator.

In the course of completing his postdoctoral studies, Sunjong acquired an exceptionally broad range of technical expertise including isolation, culture and microinjection of *Xenopus* oocytes, *Drosophila* genetics, biochemical, molecular and cell biological analyses, bioinformatics, and state of the art confocal imaging. Sunjong is fearless when it comes to tackling new methodology and his diverse skill set makes him unique among faculty candidates.

A little over two months ago, Sunjong was forced to seek a new position due to a temporary lapse in funding in the Schnapp laboratory and I was happy to take him on. This is not an optimal situation, given that Sunjong is currently applying for faculty positions and intends to continue working on RNA localization in his independent laboratory. He has taken it in stride, however, and is using this time to develop new skills in manipulating and analyzing *Xenopus* embryos so that he can incorporate these techniques into his future research. My laboratory has recently shown that differential cleavage of the BMP4 precursor protein regulates intracellular trafficking, and thus the range of action, of the mature ligand in developing embryos. Sunjong has taken on a novel project related to this finding and is looking for the intracellular chaperone that directs trafficking. In the short time that he has been in the lab, he has isolated *Xenopus* cDNAs encoding a candidate chaperone, analyzed the spatial and temporal patterns of expression of this gene in developing embryos, and generated a cDNA encoding a putative dominant mutant form of the protein. He is currently overexpressing wild type and dominant mutant forms of the protein in embryos and is beginning phenotypic analysis. I have been highly impressed by his level of motivation, his technical skills and his ability to rapidly synthesize background information related to this project. He has also been very helpful in sharing his expertise and assisting other members of the lab with generation of recombinant proteins and other biochemical techniques.

In addition to being a skilled bench scientist, Sunjong is an excellent teacher. I have observed him training and working with new graduate students in the laboratory and also in a more formal lecture setting. Sunjong is a regular participant in the Developmental Biology journal club and has given several lectures for the graduate level Mechanisms of Development course that I coordinate. His presentations are well organized and the students rate him highly in course evaluations. Sunjong is a native of Korea, and his English is accented, yet his communication skills are good. He counters any difficulty that foreign students, in particular, might have in understanding his Korean accent by including additional text on his slides but at the same time he avoids a common teaching problem I have observed in others who tend to write out their whole lecture on slides and then read it back to the class. Sunjong's writing skills are also strong but he does need assistance with editing. He developed and wrote a perfectly understandable draft of his proposed research plan, which makes me believe that he could put together a competitive grant proposal, but I did reorganize the sentence structure and edit it to improve the readability.

In summary, Sunjong is a hard working, skilled and intelligent scientist. On a personal level, he is outgoing, a good lab citizen and is well liked and respected by all of his colleagues. He has held a leadership role in the Schnapp laboratory for some years now and appears to be ready for independence. I encourage you to give him serious consideration.

Sincerely,

Jan Christian

Professor, Cell and Developmental Biology