



CHAIRMAN'S CORNER

2006 Nobel Prize - An Observation

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This year's Nobel Prize in Physiology or Medicine was given jointly to Professor Andrew Z. Fire from Stanford University, California and Professor Craig C. Mello from the University of Massachusetts Medical School, Worcester. They received the prize for their discovery that suppression of gene activity is triggered by double-stranded RNAs, a process termed RNA interference (RNAi). The Nobel Prize for Chemistry was given to Professor Roger Kornberg for his fundamental studies of the molecular basis of eukaryotic transcription. The Nobel Prize winning discovery of RNA interference is considered a breakthrough in this field as it provided a most unexpected explanation to a phenomenon, which was supposedly baffling. Dr. Kornberg's work made breakthrough progress in the molecular understanding of transcription and its regulation in eukaryotic cells. The advanced information about these discoveries is available on the following websites:



http://nobelprize.org/nobel_prizes/medicine/laureates/2006/adv.html
http://nobelprize.org/nobel_prizes/chemistry/laureates/2006/chemadv06.pdf

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Departmental News

Barbara Brodsky was awarded a grant from the NIH entitled, "Expressed Bacterial Triple-Helical Products as Tissue Engineering Scaffolds."

Raymond Habas received a priority score of 134 (5.6 percentile) on his NIH R01 grant application entitled, "Non-canonical Wnt signaling and cell motility."

Masayori Inouye was awarded a grant from the Department of Defense entitled, "Gene Therapy for Prostate Cancer using Bacterial MazF Suicide System" for three years in the amount of \$583,125.



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In the respective advanced information for these Nobel Prize winning discoveries, the pioneering discoveries made by different groups are cited. In case of RNA interference, it is mentioned that the phenomenon was discovered in Dr. Inouye's laboratory, who published a paper in *Proc. Natl. Acad. Sci.* in 1984. On the other hand, in the transcription field, the major breakthrough came in the form of two papers, one by Roeder and Rutter in 1969 (*Nature*) and by Chambon's group in 1970 (*Biochem. Biophys. Res. Commun.*), which demonstrated the different forms of RNA polymerase (I-III) present in eukaryotes. Interestingly, the strategy for this year's awards seems to be different from the previous ones. This year, instead of the scientists making pioneering discoveries, the scientists who took the field further were given priority. A couple of years ago, the Nobel Prize for Chemistry (2004) was given to three scientists, Professors Aaron Ciechanover, Avram Hershko and Irwin Rose, who made fundamental discoveries concerning how cells regulate the breakdown of intracellular proteins with extreme specificity as to target, time and space. At that time, Professor Varshavsky, who has made tremendous contributions to this field, was not awarded the prize. The trend seems to be fluctuating as to whose work is considered more important, the pioneering scientist who discovers a particular phenomenon or the one whose work takes the field to new heights. Another interesting thing is that contrary to the popular belief, the important discoveries are not always reported in *Cell*, *Nature* or *Science*. The two papers mentioned as pioneering discoveries in the advanced information for Nobel Prizes, (such as Chambon's paper mentioned above or the 1978 paper by Ciechanover *et al*) were published in BBRC!

Publications

Stock, A.M. (2006) Transmembrane signaling by asymmetry. *Nat. Struct. Mol. Biol.* 13(10):861-862.

Sato, A, Khadka, D.K., Liu, W.,, Bhart, R., Runnels, L.W., Dawid, I.B. and **Habas R.** (2006) Profilin is an effector for Daam1 in non-canonical Wnt signaling and is required for vertebrate gastrulation. *Development.* 133:4219-4231.

Puglia, J. Wang, T., Smith-Snyder, C., Cote, M., Scher, M., Pelletier, J.N., Johns, S., Jonsson, C.B. and **Roth, M.J.** (2006) Revealing domain structure through linker-scanning analysis of the murine leukemia (MuLV) RNase H and MuLV and human immunodeficiency virus type 1 integrase proteins. *J. Virol.* 80(19):9497-510.

Dutta, J., Fan, Y., Gupta, N, Fan, G. and **Gélinas, C.** (2006) Current insights into the regulation of programmed cell death by NF-kappaB. *Oncogene.* 25(251):6800-6816.

Berman, H.M., Burley, S.K., Chiu, W., Sali, A., Adzhubei, A., Bourne, P.E., Bryant SH, Dunbrack, R.L. Jr, Fidelis, K., Frank, J., Godzik, A., Henrick, K., Joachimiak, A., Heymann, B., Jones, D., Markley, J.L., Moulton J, **Montelione, G.T.**, Orengo, C., Rossmann, M.G., Rost, B., Saibil, H., Schwede, T., Standley, D.M. and Westbrook, J.D. (2006) Outcome of a workshop on archiving structural models of biological macromolecules. *Structure.* 14(8):1211-7.

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Departmental news...(continued from page 1)

Akira Sato presented a poster at the 11th International Xenopus meeting in Kazusa, Japan from September 12-16, 2006.

Raymond Habas presented a seminar at the Department of Genetics at Case Western University School of Medicine entitled, "Dissecting the molecular mechanisms of Wnt signaling" on October 18, 2006.

Céline Gélinas was inducted to the 2006 Stuart D. Cook, M.D. Master Educators' Guild on September 19, 2006 at University Day in Camden, NJ.

Raymond Habas served as a judge at the Siemens National High School competition in Math, Science and Technology from October 13-16, 2006.

Publications...(continued from page 2)

Depre, C., Wang, Q., Yan, L., Hedhli, N., Peter, P., Chen, L., Hong, C., Hittinger, L., Ghaleh, B., Sadoshima, J. Vatner, D.E., Vatner, S.F. and **Madura, K.** (2006) Activation of the cardiac proteasome during pressure overload promotes ventricular hypertrophy. *Circulation*. 114 (17):18021-8.

In Press:

Liou, H.L., Dixit, S.S., Xu, S., Tint, G.S., **Stock, A.M.** and Lobel, P. (2006) NPC2, the protein deficient in Niemann-Pick C2 disease, consists of multiple glycoforms that bind a variety of sterols. *J. Biol. Chem.*

Suzuki, M., Roy, R., Zheng, H., Woychik, N. and **Inouye, M.** (2006) Bacterial bioreactors for high yield production of recombinant protein. *J. Biol. Chem.*

Anand, V.S. and **Patel, S.S.** (2006) Transient state kinetics of transcription elongation T7 RNA polymerase. *J. Biol. Chem.*

Bella, J., Liu, J., Kramer, R., **Brodsky, B.** and Berman, H.M. (2006) Conformational effects of Gly-X-Gly interruptions in the collagen triple helix. *J. Mol. Biol.* 326(2):298-311.

Hyde, T.J., Bryan, M., **Brodsky, B.** and Baum, J. (2006) Sequence dependence of renucleation after Gly mutation in model collagen peptides. *J. Biol. Chem.*