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## BIOTECHNOLOGY AND FLUORESCENT PROTEIN

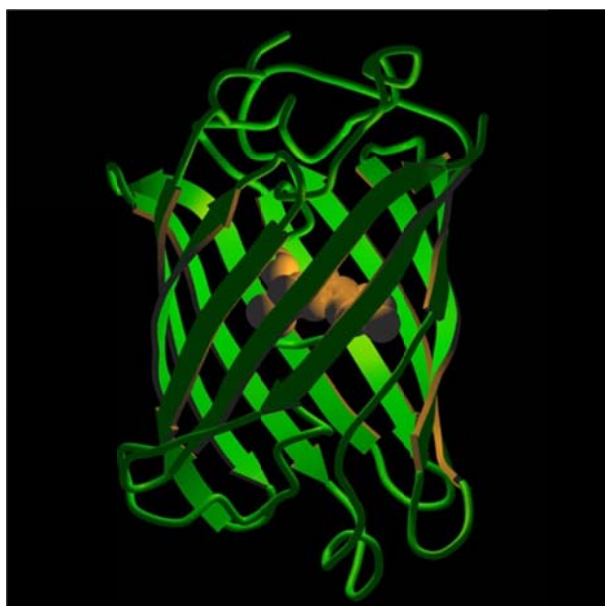
**Mgr. Ana Maria Jimenez Jimenez**

## MODERNÍ BIOTECHNOLOGICKÉ NÁSTROJE PRO IN VIVO VIZUALIZACE EXPRESE GENŮ, ZELENÉ PROTEINY

**Ing. Iva Blažková**

### Abstrakt

Green Fluorescent Protein (GFP) has existed for more than one hundred and sixty million years in one species of jellyfish, *Aequorea victoria*. The protein is found in the photoorgans of *Aequorea*, see picture below right. GFP is not responsible for the glow often seen in pictures of jellyfish - that "fluorescence" is actually due to the reflection of the flash used to photograph the jellies. In 1994 GFP was cloned. Now GFP is found in laboratories all over the world where it is used in every conceivable plant and animal. Flatworms, algae, *E. coli* and pigs have all been made to fluoresce with GFP.



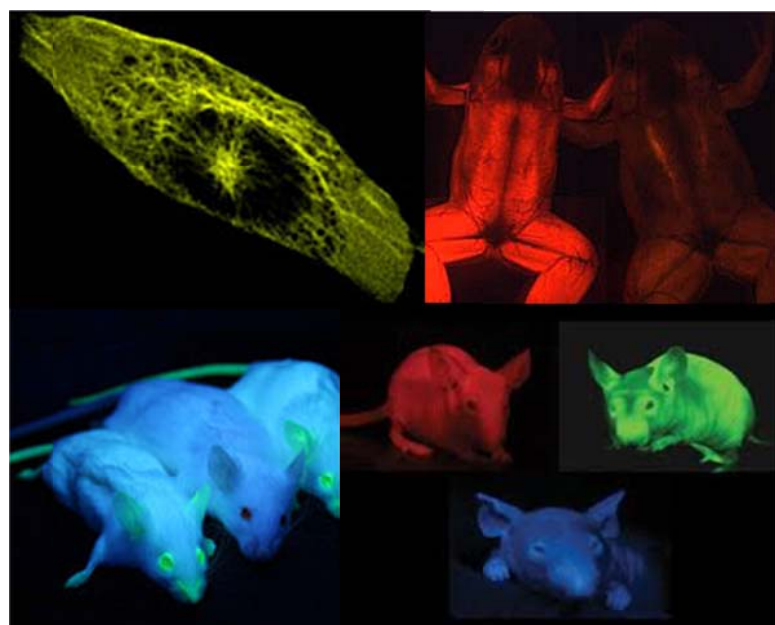
The importance of GFP was recognized in 2008 when the Nobel Committee awarded Osamu Shimomura, Marty Chalfie and Roger Tsien the [Chemistry Nobel Prize](#) "for the discovery and development of the green fluorescent protein, GFP."





Why is it so popular? Well, I like to think of GFP as the microscope of the twenty-first century. Using GFP we can see when proteins are made, and where they can go. This is done by [joining the GFP gene to the gene of the protein of interest](#) so that when the protein is made it will have GFP hanging off it. Since GFP fluoresces, one can shine light at the cell and wait for the distinctive green fluorescence associated with GFP to appear.

Yellow fluorescent protein  
Red fluorescent protein  
Cyan fluorescent protein  
Blue fluorescent protein  
Photocconvertible fluorescent protein



**pátek 19. 07. 2013, 10:00 h**

Ústav chemie a biochemie, laboratoře fotometrie

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