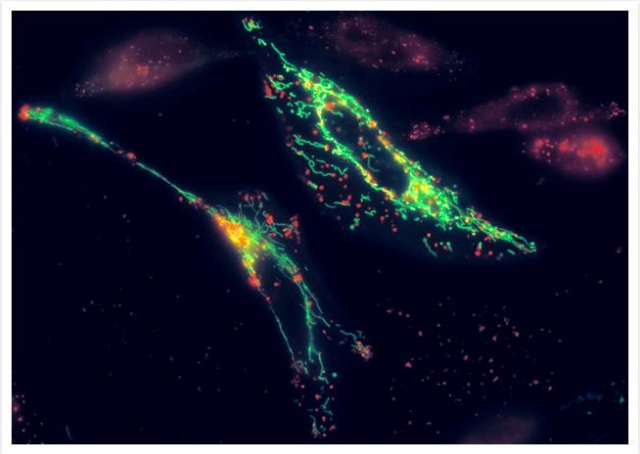
GFP – Green Fluorescent Protein

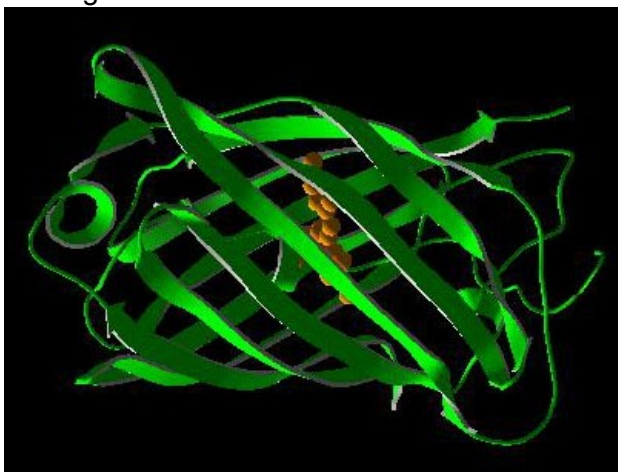
Green Fluorescent Protein (GFP) is a naturally fluorescent protein originally isolated from a jellyfish (*Aequorea victoria*). It is a small protein composed of 238 amino acids and it emits fluorescent green light when irradiated with UV light.

GFP has a shape of a cylinder formed by 11 ß-strands, and has 3 short α-helices. The helix running through the centre contains the chromophore, the part of the protein responsible for the fluorescence emission. The GFP gene can be spliced onto other genes, and introduced into living cultured cells or in specific cells of an entire animal. The modified gene will produce a protein which will shine green; this allows localization of the protein in the cell when seen in a UV microscope as in the example below which shows green mitochondria:



from: http://probes.invitrogen.com/servlets/photohigh?fileid=g002496&company=probes

A ribbon-like representation of GFP with the chromatophore labelled in orange was obtained with The Swiss- PdbViewer and is shown in the next figure:



For the movie, the atoms identity and positions, retrieved from PDB file, were imported into the virtual space of Maya, and rendered as blobbies. To make visible its fluorescence we add a green ambient colour to the Lambert shader and we placed a green light emitting from the center of the protein.
The movie shows GFP rotating around its X and Y axes.