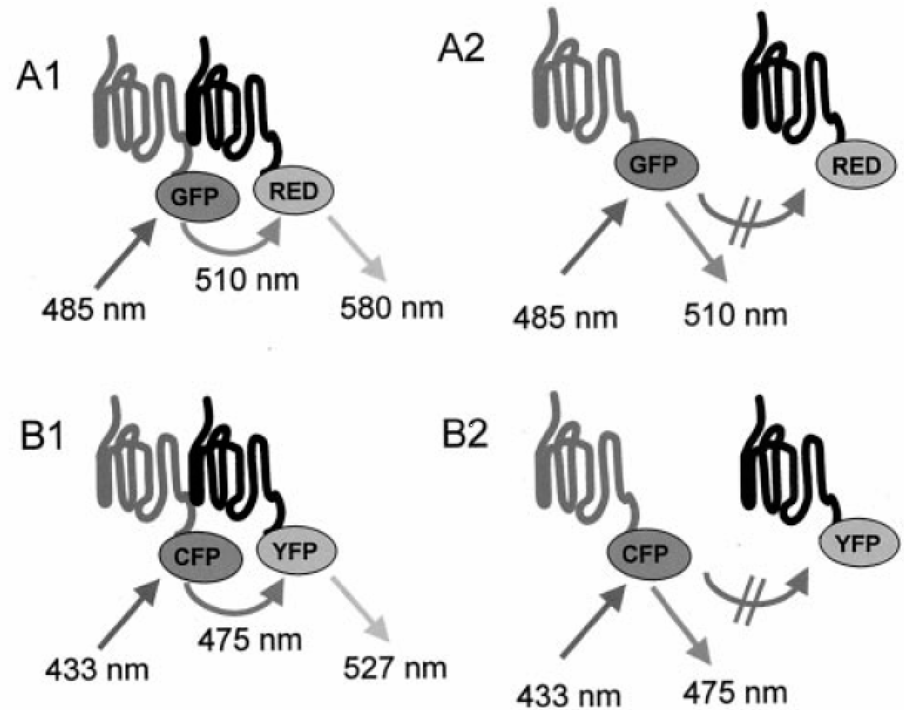
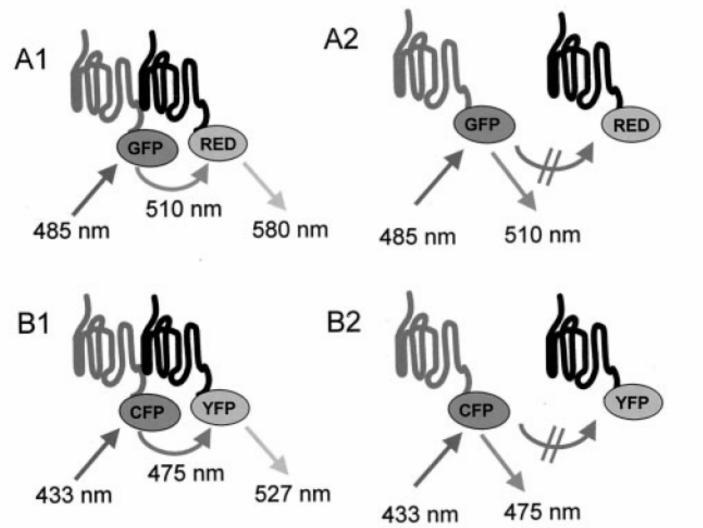


FIG. 1. **Schematic diagram of FRET.** Energy transfer from the donor (*GFP*, *CFP*) to the acceptor molecule (*DSRed*, *YFP*) is only possible when the distance is lower than 100 Å (*A1*, *B1*). Otherwise, FRET is not measurable (*A2*, *B2*).

Neuropeptide Y receptor (NPY): Homodimer?

GFP: green fluorescence protein
CFP: cyan fluorescence protein
DSRed: red fluorescence protein
YFP: yellow fluorescence protein

Annette Beck-Sickinger et. al (2003), J. Biol. Chem 278, 10562-10571



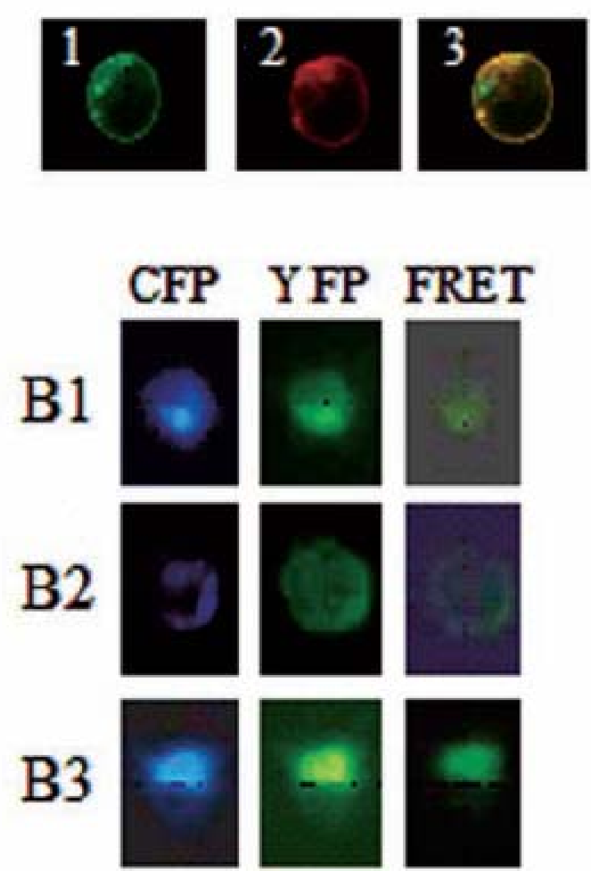


FIG. 3. **Fluorescence microscopy studies.** *A*, BHK cells were transiently cotransfected with hY_1-GFP and hY_1-DSRed fusion proteins, and images were acquired through GFP (*A1*) and DSRed (*A2*) channels using confocal laser scanning microscopy. *A3* represents an overlay of the GFP and DSRed channel. *B*, BHK cells were transiently cotransfected with equal amounts of the same NPY receptor subtype fused to the FRET pair CFP/YFP. One day after transfection, cells were washed with PBS, and images were taken with appropriate filter sets. *B1* images show hY_1-CFP/hY_1-YFP, *B2* images show hY_2-CFP/hY_2-YFP, and *B3* images show hY_5-CFP/hY_5-YFP cotransfected cells. Images were taken with the donor filter set (*left column*), with the acceptor filter set (*middle column*), and with the FRET filter set (*right column*).

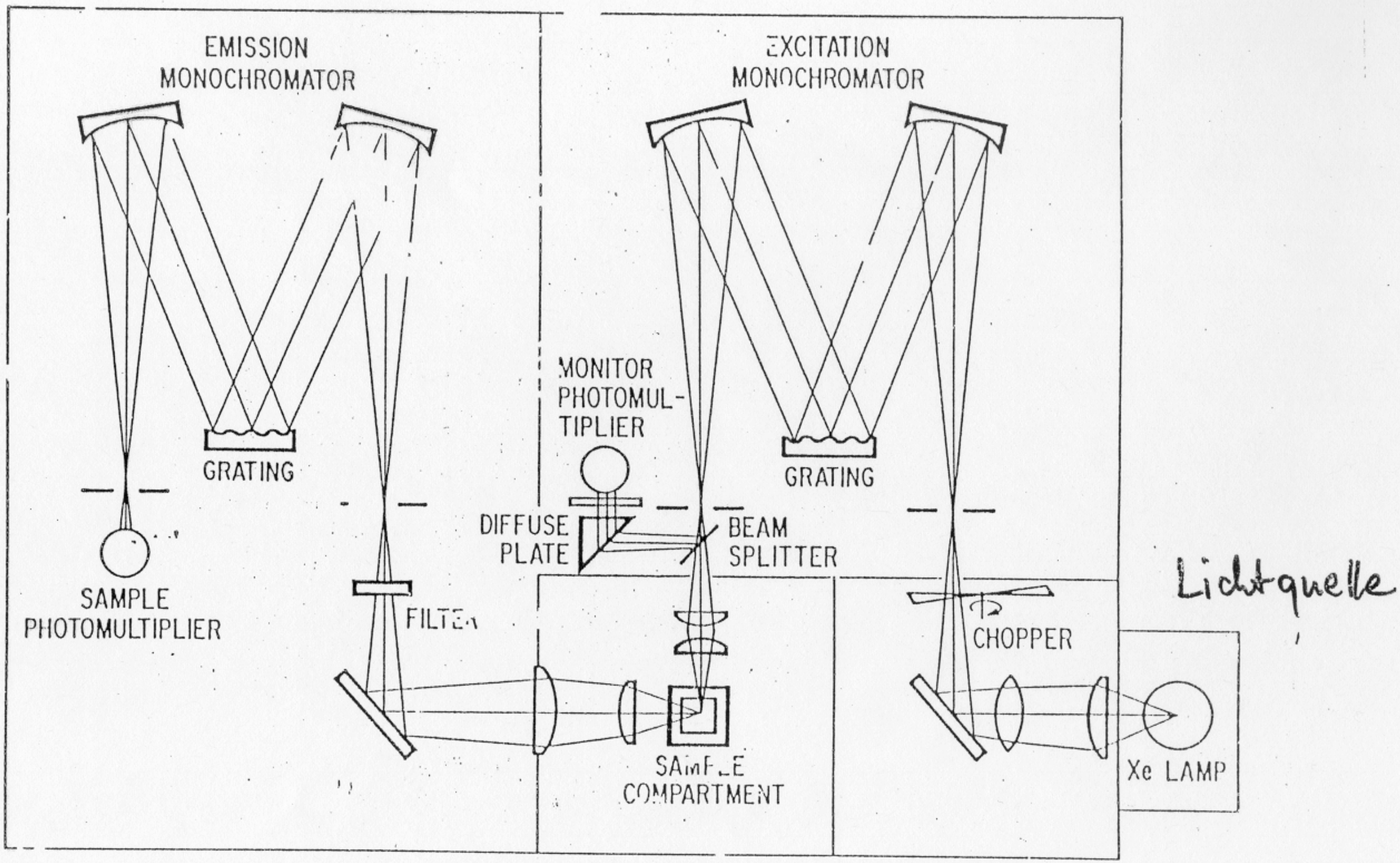


Fig. 3-1 - Optical Diagram, Model MPF-44

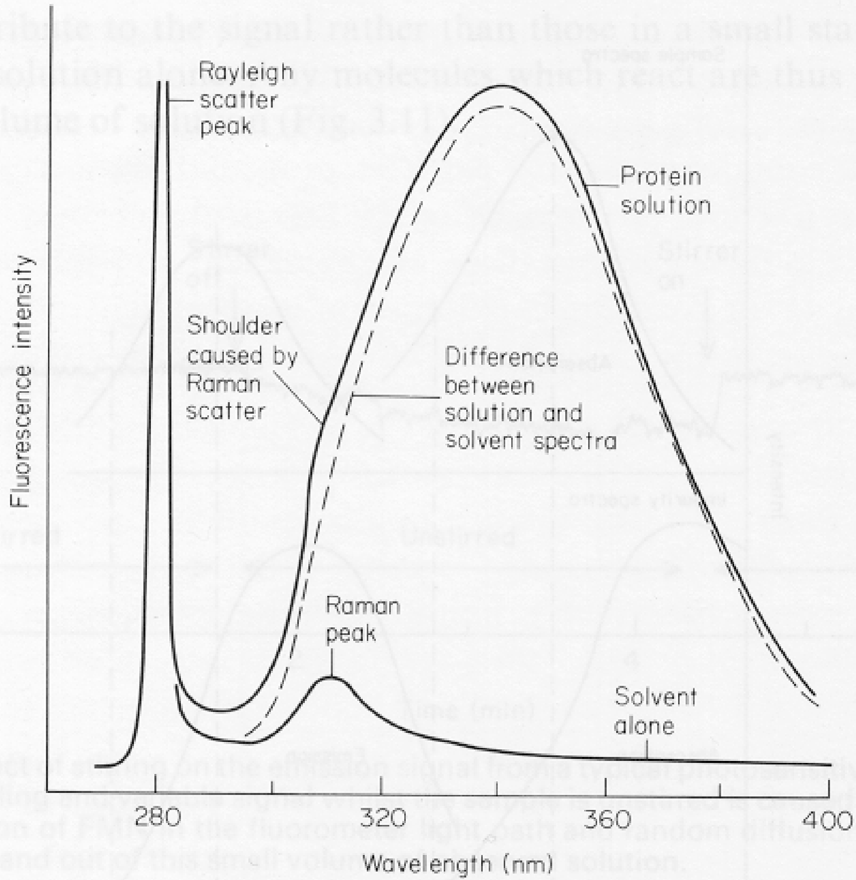


FIG. 3.13 Distortion caused to a true emission spectrum by Raman scattering from the solvent. The spectra are those of a typical protein containing Trp in neutral aqueous solution (10 μg ml^{-1}).

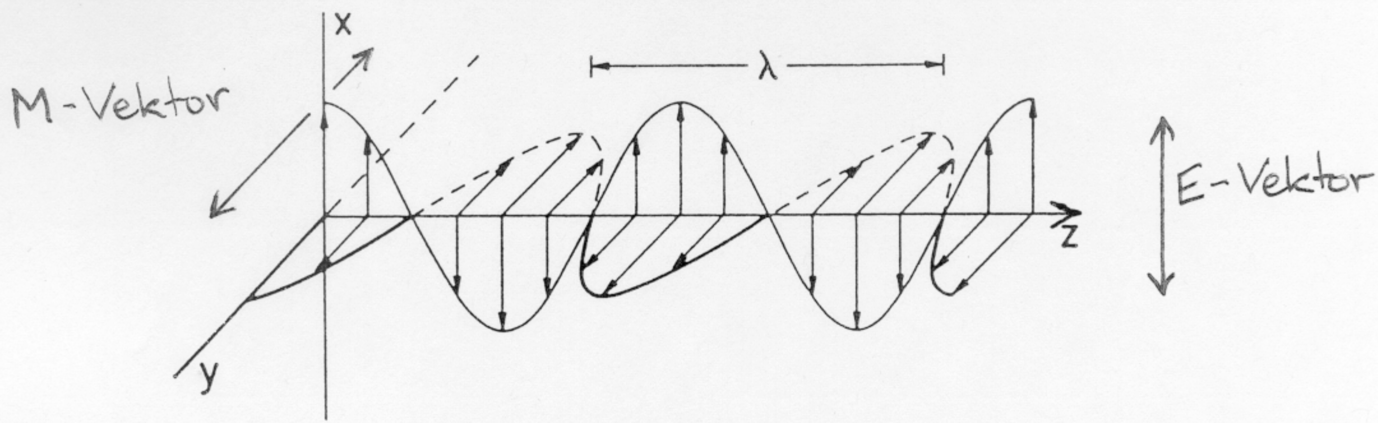


Figure 1. A monochromatic and linearly polarized beam of light at constant time. The electric field vector is in the *xz* plane, which is also "the plane of polarization." The magnetic field vector is in the *yz* plane. The direction of propagation is the +*z* direction, and the picture slides to the right with time.

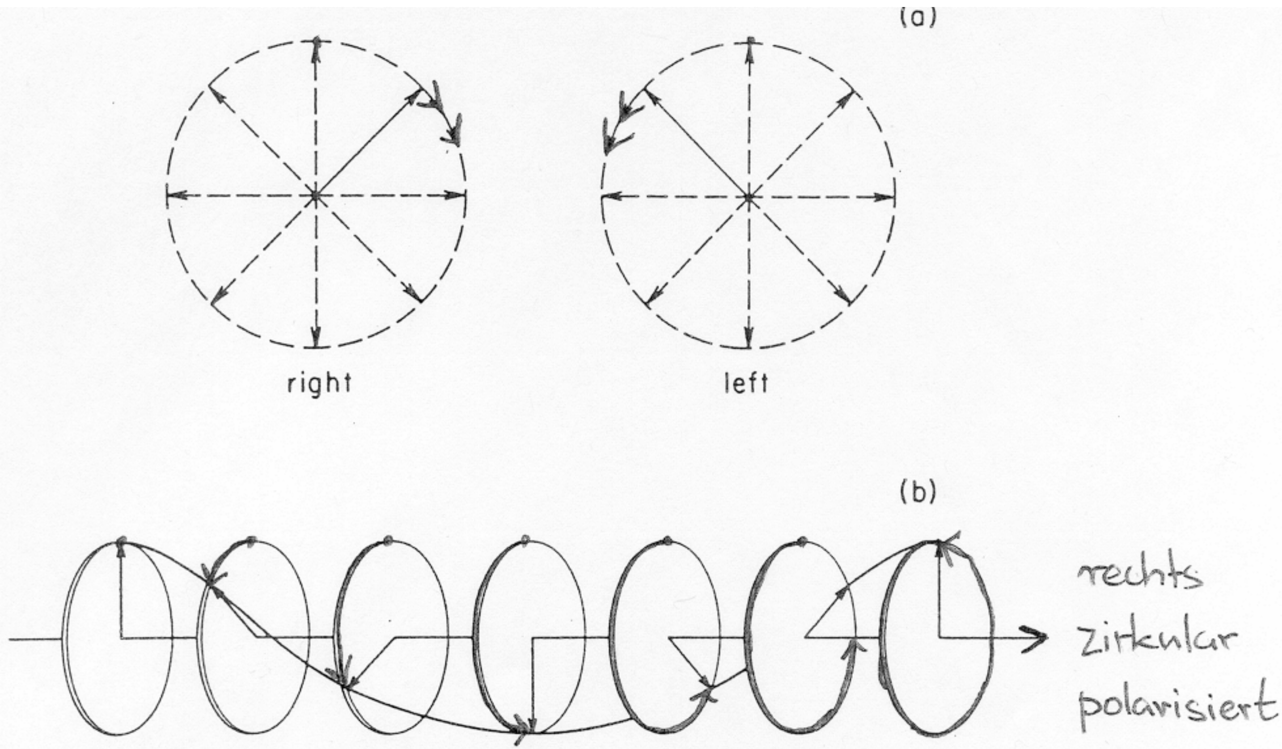


Figure 2. (a) The electric field vector of monochromatic and circularly polarized light depicted in the plane of the page as a function of time. Propagation is out of the page. (b) The electric field vector of monochromatic and right circularly polarized light as a function of distance at constant time. The helix slides to the right with time.

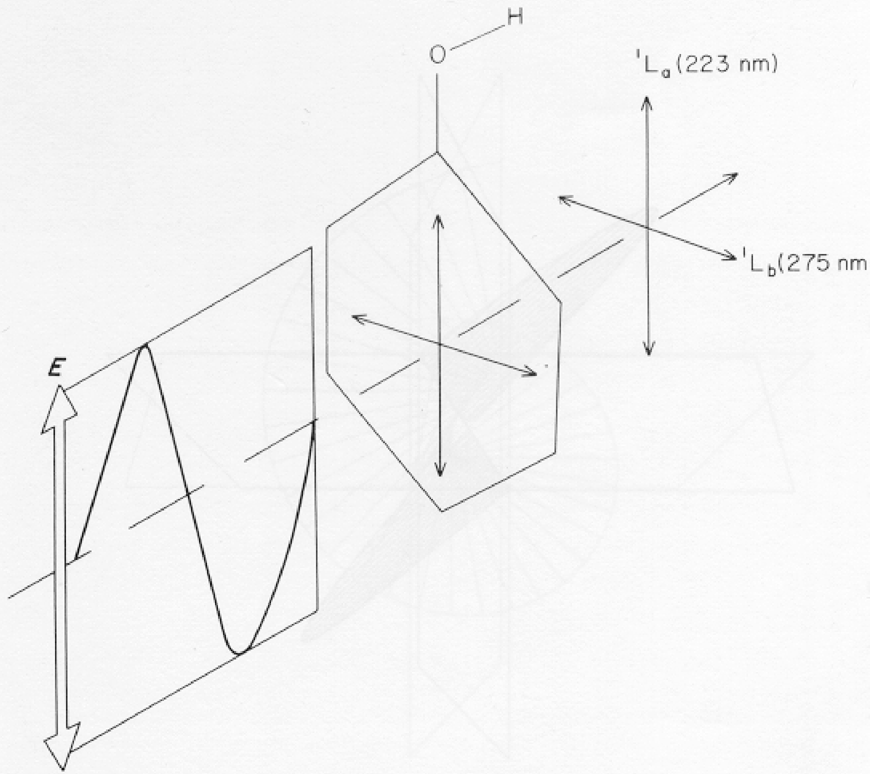
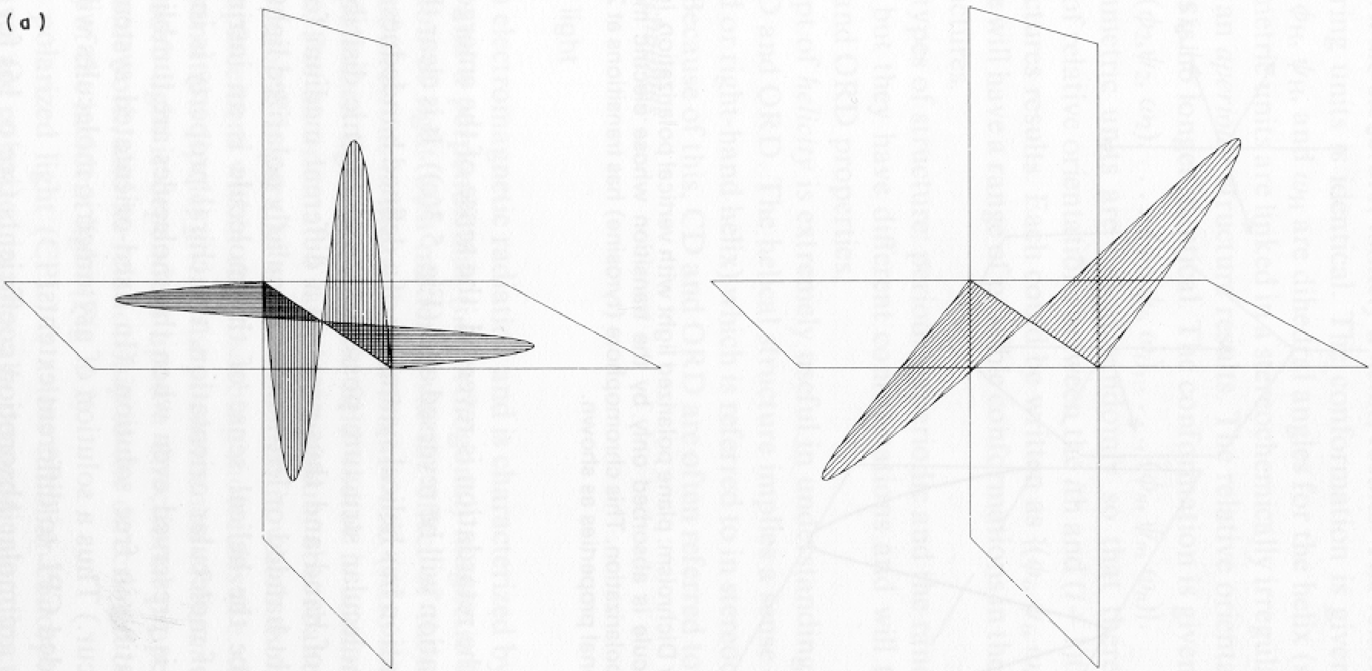
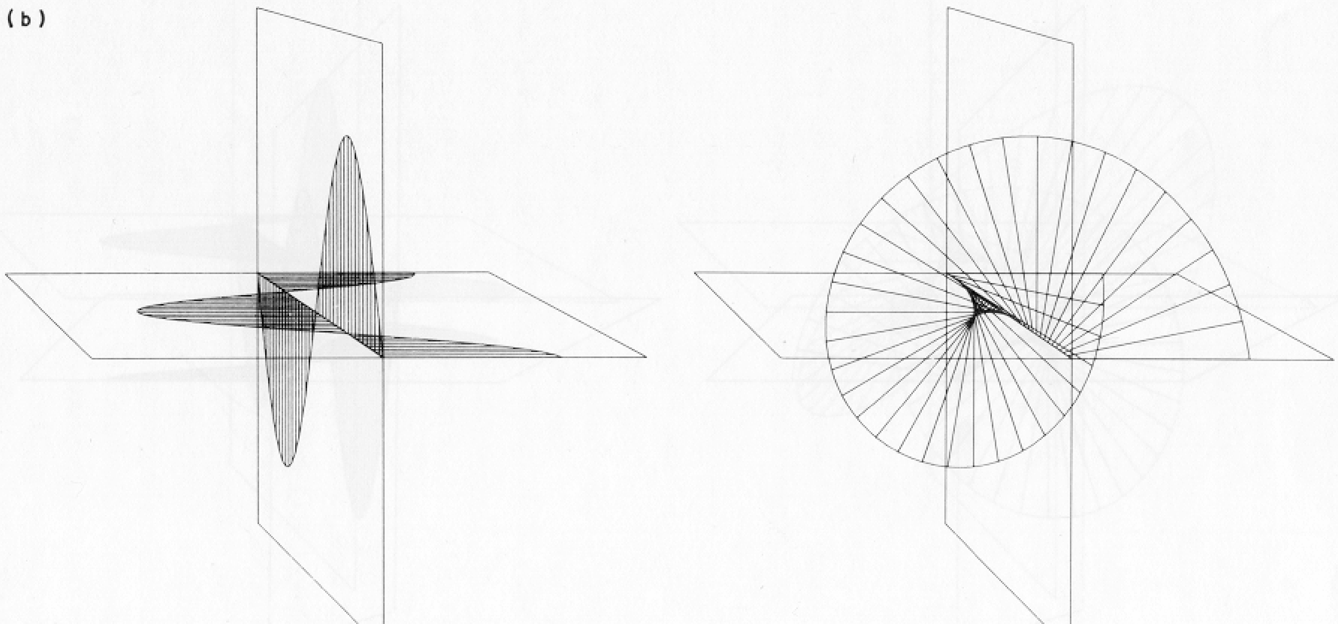


FIG. 5.2 Linear Dichroism: plane polarized light with vertical polarization, incident upon an *orientated* molecule is absorbed only by the transition whose electric moment is in the direction of the polarization. This chromophore (tyrosine) has transitions at 275 nm and 223 nm with directional properties as shown.

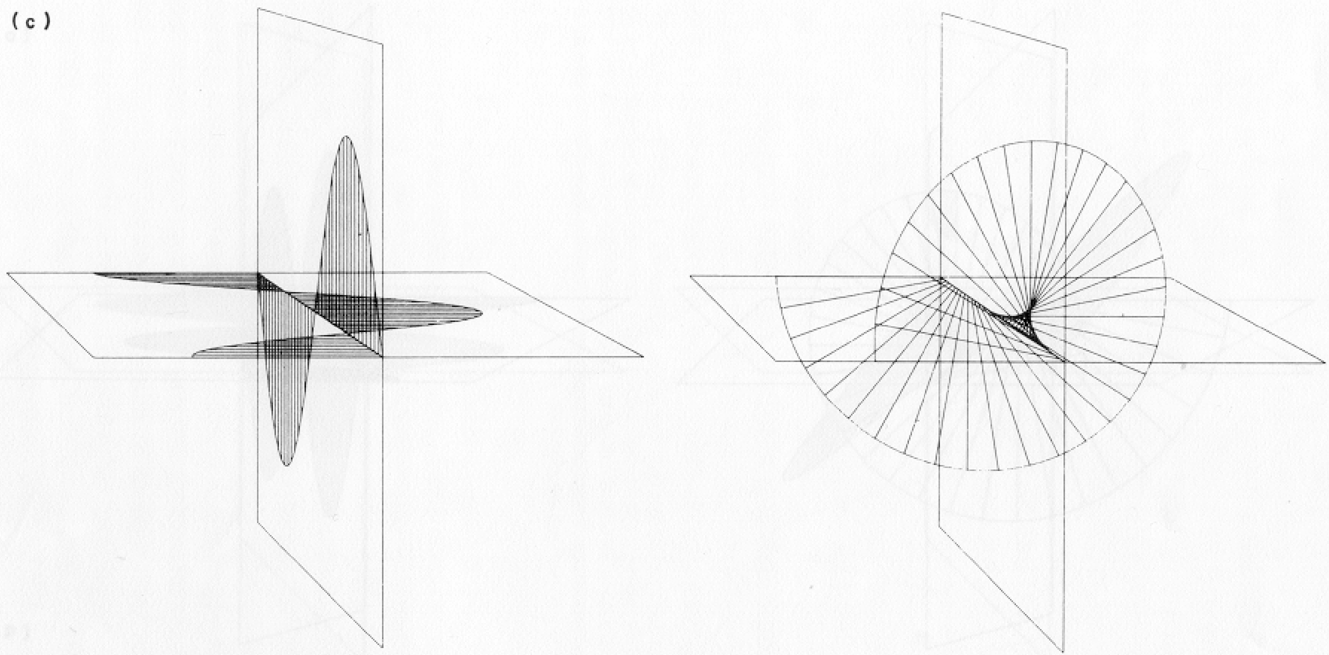
(a)



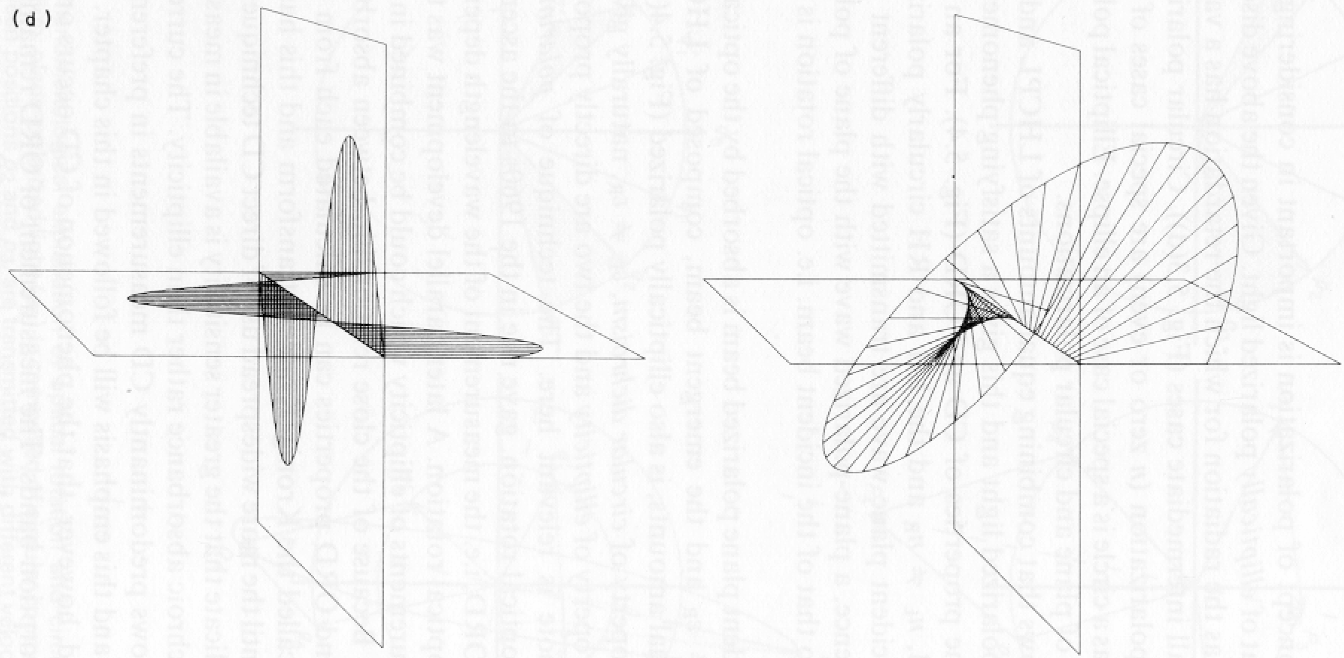
(b)



(c)



(d)



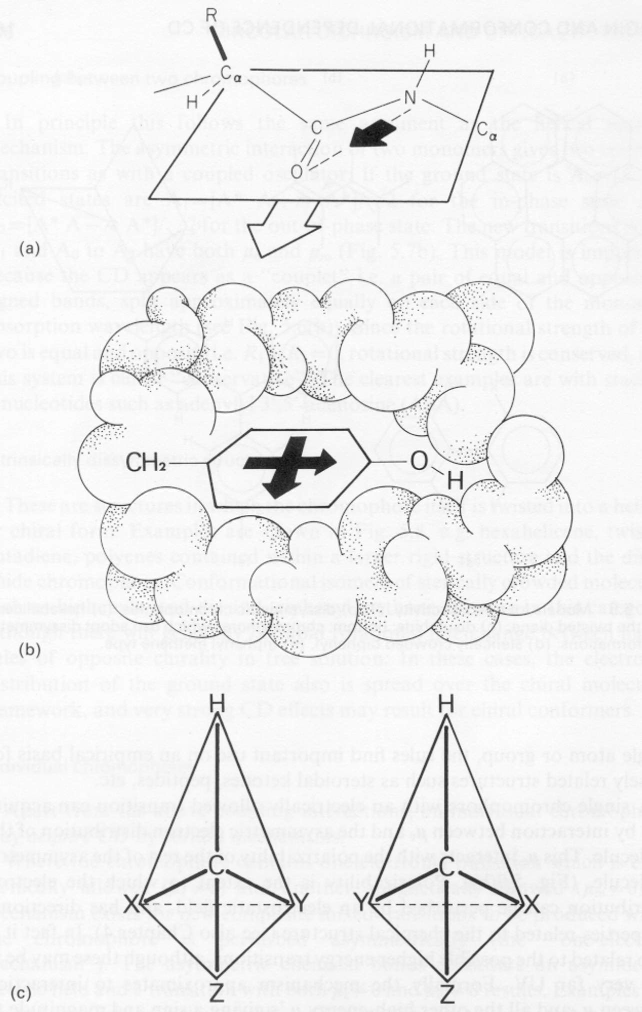


FIG. 5.9 Models for optical activity. (a) *Peptide residue*: the μ_e of the $\pi \rightarrow \pi^*$ transition and μ_m of the $n \rightarrow \pi^*$ transition mix under the influence of the asymmetric centre at C_α. (b) The *polarizability* of the groups surrounding the chromophore provides an asymmetric environment with which the $\pi \rightarrow \pi^*$ transitions of the tyrosine side chain interact. (c) *The asymmetric carbon atom*: the two stereoisomers have the lower three substituents ordered in different handedness, XYZ clockwise or anticlockwise respectively when viewed from above.

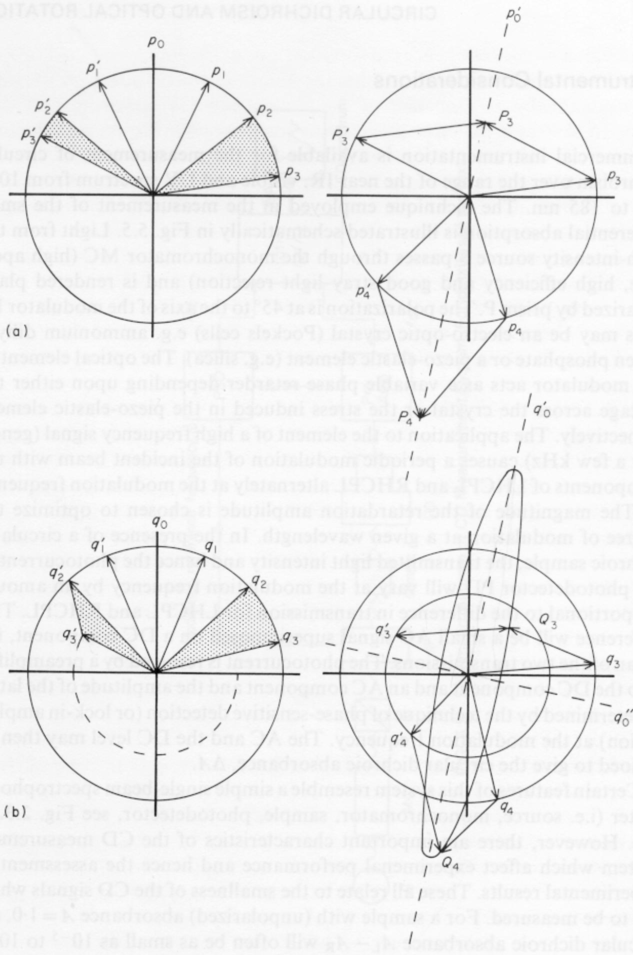
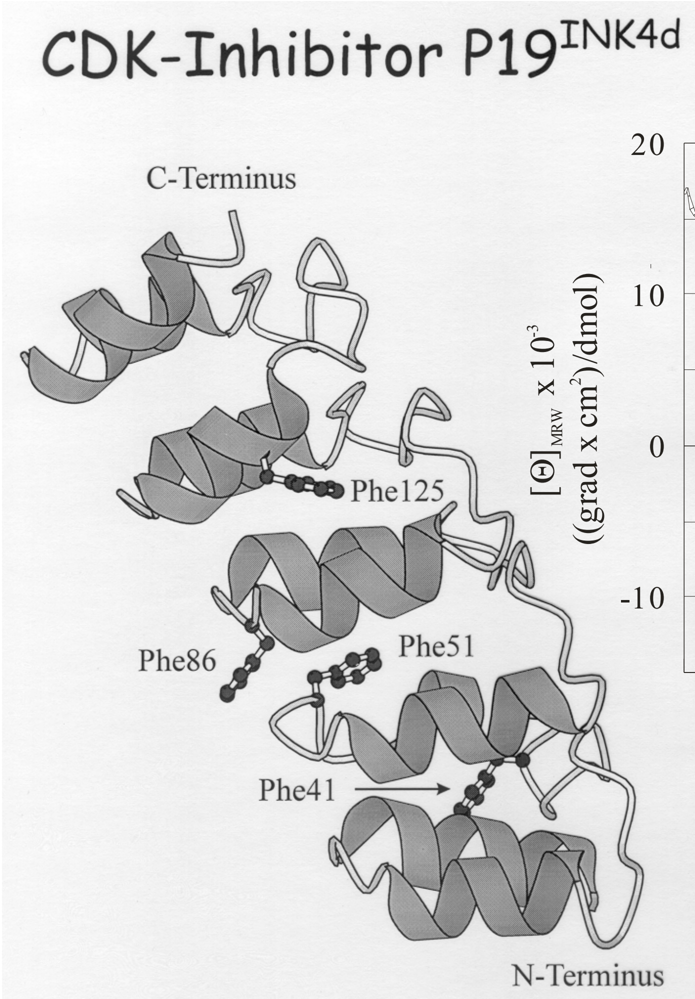
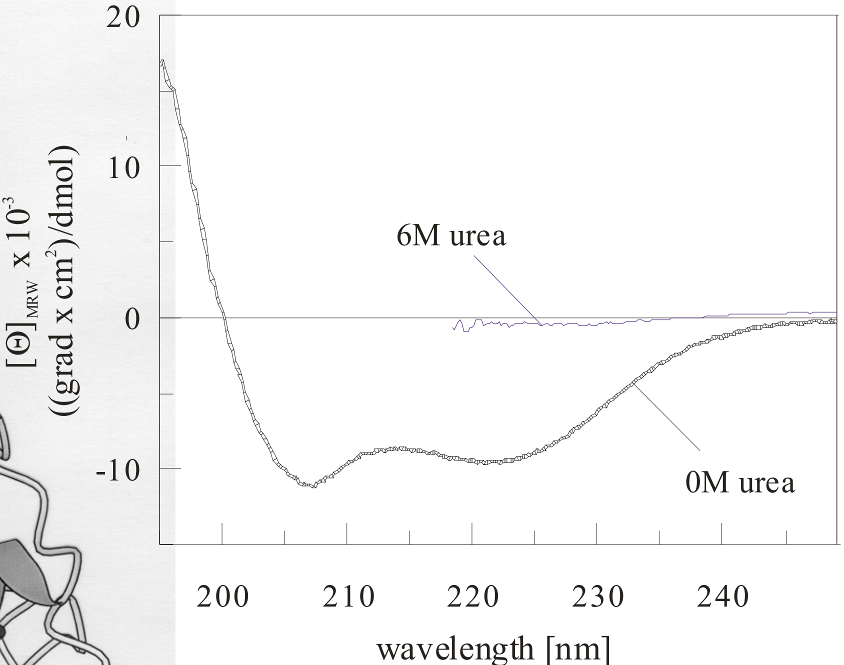


FIG. 5.4 Phenomenological explanation of optical rotation and circular dichroism. (a) Optical rotation: plane-polarized light (p_0) is composed of circular components (p_1 and p_1') which, between positions p_2 and p_3, are transmitted with different velocities, since $n_L \neq n_R$; recombination of p_3 and p_3' and subsequently p_4 and p_4' gives P_3 and P_4 orientated in the direction p_0' i.e. the plane of polarization has been rotated. (b) Circular dichroism and ellipticity: the components q_1 and q_1' between positions q_2 and q_3 are also absorbed to different extents since $\varepsilon_L \neq \varepsilon_R$; recombination of q_3 and q_3' and subsequently q_4 and q_4' gives Q_3 and Q_4 which trace out the ellipse with major and minor axes in the directions q_0' and q_0'', i.e. the emergent light is elliptically polarized.



far-UV CD spectra



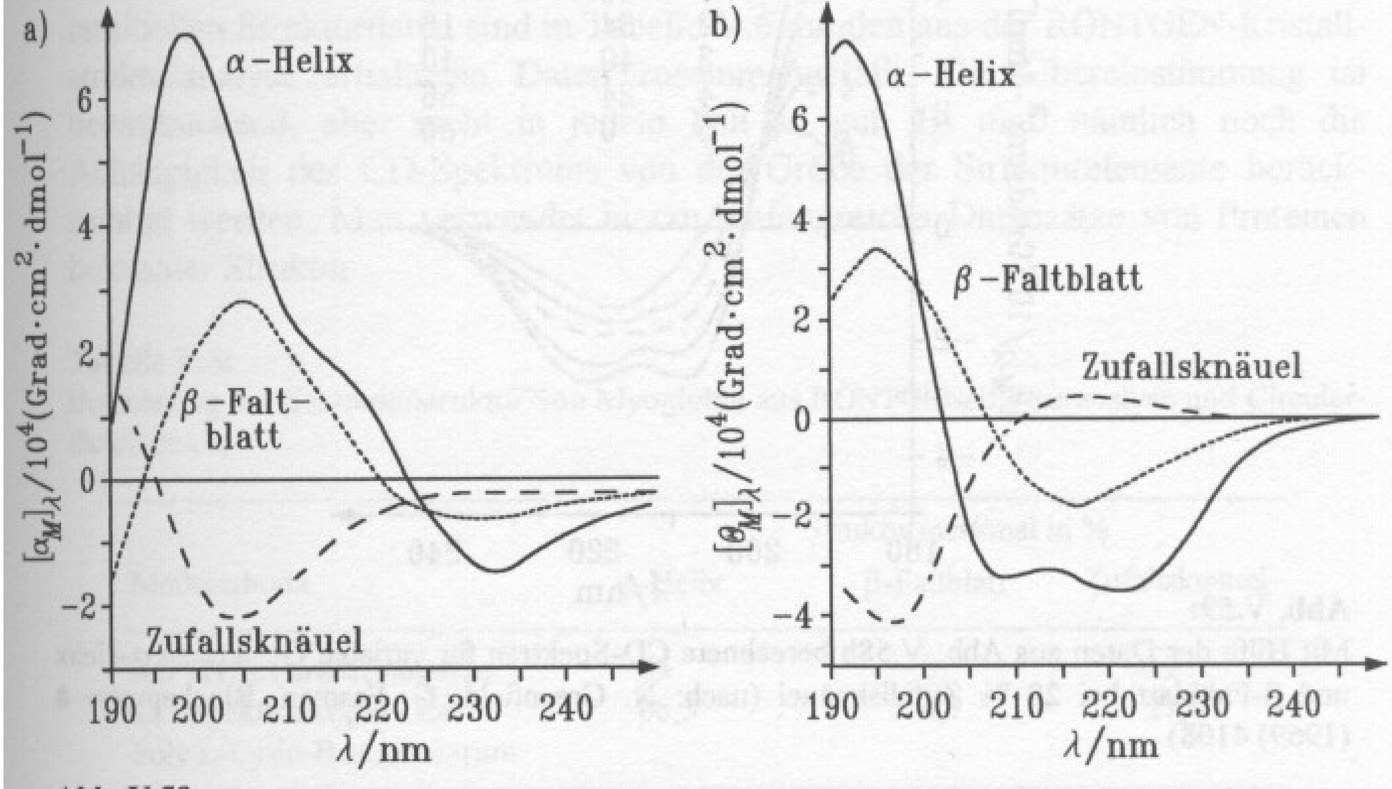


Abb. V.58:
a) ORD- und b) CD-Spektren dreier unterschiedlicher Konformationen von Poly-L-Lysin (nach: N. Greenfield, B. Davidson, G. Fasman, Biochemistry **6** (1967) 1630; N. Greenfield, G. Fasman, Biochemistry **8** (1969) 4108).

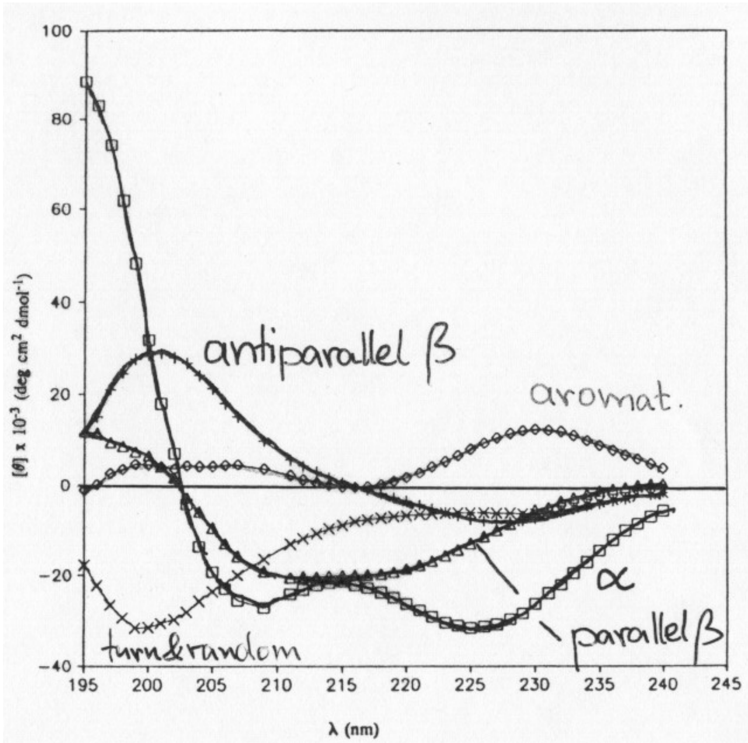


Fig. 6. The five pure component spectra from the deconvoluted 23 proteins at 46 wavelength values (standard + beta data set). The average for the final deviation for each data point was found to be ± 1.6 × 10^{-3} deg^2 cm^{-1} dmol.

$$(Dev)^2 = \sum_{i=1}^{23} \sum_{i=j}^{46} [f_{ij}^{comp.}(\lambda) - f_{ij}^{meas.}(\lambda)]^{2^a}.$$