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Fluorescence Analysis for Non-exponential Decay Function of Single Tryptophan Residue in Erabutoxin b.

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Fluorescence of single tryptophan in erabutoxin b exhibited non-exponential decay curves at 6, 20 and 40°C. The decay curves were analyzed by a best-fit procedure with a theoretical decay function for a model, where i) internal rotation of tryptophan in the protein is explicitly taken into account and described with a rotational analog of Smoluchowski equation and ii) an angular-dependent quenching constant was introduced into the Smoluchowski equation. Although the best-fit procedure was also attempted for two- and three-exponential decay functions according to the method of moments, the fittings were always better in the present analysis than in the multi-exponential analysis. These results suggest that Trp-29 has appreciable freedom of internal rotation in the time region of subnanosecond to nanosecond and a rotation around the z-axis is fastest.

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Enzyme-linked Immunosorbent Assay of Serum Pepsinogen I.

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A hybridoma monoclonal antibody against human pepsinogen I was used to develop an enzyme-linked immunosorbent assay for pepsinogen I in serum. In the two-step competitive procedure using antimouse immunoglobulin F(ab')₂ fragment coupled to alkaline phosphatase, the measurable assay range was 8-256 µg/l. No cross-reactivity with rat pepsinogen I, human pepsinogen II, gastrin I, bombesin, somatostatin and peptide YY was shown. However, there was slight cross-reactivity (0.09%) with porcine pepsinogen. The coefficients of variation within and between series were 7.6% and 13.0%.

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Levels of Alkaline Phosphatase Isozymes in Human Seminoma Tissue.

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The three human isozymes of alkaline phosphatases were quantitatively determined in normal testis and seminoma tissues. The highly selective assays were based on isozyme specific monoclonal antibodies. In the normal testis approximately 90% of the catalytic activity originates from the tissue unspecific alkaline phosphatase, and the remaining activity was due to trace expression of both intestinal (approximately 5%) and placental alkaline phosphatase (PLAP) or PLAP-like isozyme (approximately 5%). In homogenates of seminoma tissues, highly increased levels of all three isozymes were identified.