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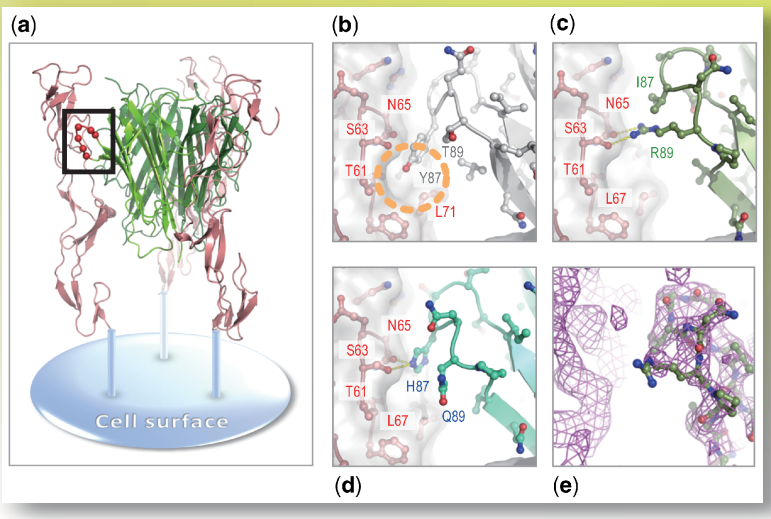
JB Reflections and Perspectives

Tamio Yamakawa: Dawn of Glycobiology



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	Protein Synthesis
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	RNA Processing
	Genetic Engineering
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	Muscles
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	Extracellular Matrices and Cell Adhesion Molecules
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	Synthetic Peptides and Oligonucleotides
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COVER: Deference between R1antTNFs and wtTNF in TNFR1 binding interface. (a) Model complex of R1antTNF-T8 (green) and TNFR1 (red) on the cell surface. Receptor binding interfaces are indicated by the black square. Six mutated residues are shown as red spheres. (b)–(d) Receptor binding interfaces of (b) wtTNF-TNFR1 (gray-red), (c) R1antTNF-T8-TNFR1 (green-red), and (d) R1antTNF-T2-TNFR1 (blue-red). (e) 2Fo-Fc map contoured at 0.9 s of R1antTNF-T8 loop (pink mesh). Tyr87 of wtTNF, an essential residue for TNFR1 binding, was buried in a molecular hydrophobic "pocket" of TNFR1 in which the receptor residues Leu67 and Leu71 are located. Tyr87 in R1antTNF-T8 and R1antTNF-T2 was used to replace other amino acids (Ile87 and His87, respectively). The structural simulation revealed that Arg89 of R1antTNF-T8 and His87 of R1antTNF-T2 interacted with the relatively negatively charged Ser63 and Asn65 on the TNFR1 surface, which may account for the difference in the association mode compared to wtTNF. [See Mukai *et al*., p. 167].