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| Principal Researcher | Takeshi Yagi | Number ofResearchers | 2 |
| Research Institution · Department · Title | Professor, Graduate School of Frontier Bioscience,Osaka University | Location of Institution | Suita |

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| Title ofProject | Molecular mechanism for generating and regeneratingneural networkby CNR family |
| Abstract of ResearchProject | We have not yet understood mechanism for generating and regenerating neural networks in the brain. To examine the mechanism, we will focus cadherin-related neuronal receptor (CNR) family genes. CNR family proteins are diversified receptor-type synaptic proteins. During this research project, first we will identify ligands for CNR proteins in synapse. Second, we will reveal signaling pathway for CNR proteins in synapse. Third, to examine in vivo function of CNR family for generating and regenerating neural networks, we will produce and analyze knockout mice of CNR family genes. The CNR family genes in the brain are from a gene cluster that is similar to those of immunoglobulin and T-cell receptor genes. And we have detected somatic mutations in CNR family transcripts during brain development. There are superficial similarities between the immune system and the brain system, for example the capacity for memory and extensive apoptosis during development. Therefore functional analyses for CNR family in the brain will make a breakthrough for understanding enormously diversified, complex, but well-organized neural networks. We expect that this research project contribute to understanding mind development and psychiatricor mental diseases. |
| References | 1.Kohmura N, Senzaki K, Hamada S, Kai N, Yasuda R, Watanabe M, Ishii H, Yasuda M, Mishina M & Yagi T, Diversity Revealed by a Novel Family of Cadherins Expressed in NeuronsatSynapticComplex.Neuron20,1137-1151,1998.<br>2. Senzaki K, Ogawa M & Yagi T, Proteins of the CNR family are multiple receptors for Reelin. Cell 99, 635-647,1999 |
| Term of Project | Fiscal years 2002-2006. (5years) |

| Budget Allocation (inthousandofyen) | FY2002 | FY2003 | FY2004 | FY2005 | FY2006 | TOTAL |
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| | 27,400 | 21,500 | 17,200 | 12,900 | 8,600 | 87,600 |

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| Homepage Address | http://www.fbs.osaka-u.ac.jp/jp/seminar/06a.html |