



Papers of the Week

The Papers of the Week highlight what we consider to be the best papers we receive for publication in the JBC. They are selected by our Associate Editors and Editorial Board Members and represent the top 1% of papers reviewed in terms of significance and overall importance. The papers are accompanied by a brief summary that explains the findings of the paper and why it was chosen for this honor.

Papers Of The Week, March 23, 2012

Alexander E. Aleshin, Ingrid U. Schraufstatter, Boguslaw Stec, Laurie A. Bankston, Robert C. Liddington, and Richard G. DiScipio
Structure of Complement C6 Suggests a Mechanism for Initiation and Unidirectional, Sequential Assembly of Membrane Attack Complex (MAC)
J. Biol. Chem. published March 23, 2012 as
doi:10.1074/jbc.M111.327809
[»Abstract](#) [»Full Text](#) [»PDF](#) [»PDF including Supp Data](#) [»Supplemental Data](#) [»Author profile](#) [»Summary](#)

Zhenglin Gu, Wenhua Liu, Jing Wei, and Zhen Yan
Regulation of N-Methyl-D-aspartic Acid (NMDA) Receptors by Metabotropic Glutamate Receptor 7
J. Biol. Chem. published March 23, 2012 as
doi:10.1074/jbc.M111.325175
[»Abstract](#) [»Full Text](#) [»PDF](#) [»Author profile](#) [»Summary](#)

Papers Of The Week, March 16, 2012

Guangsen Fu, Tao Xu, Yi Shi, Na Wei, and Xiang-Lei Yang
tRNA-controlled Nuclear Import of a Human tRNA Synthetase
J. Biol. Chem. published March 16, 2012 as
doi:10.1074/jbc.C111.325902
[»Abstract](#) [»Full Text](#) [»PDF](#) [»Author profile](#) [»Summary](#)

Yonghong Zhang, Zhigang Li, David B. Sacks, and James B. Ames
Structural Basis for Ca²⁺-induced Activation and Dimerization of Estrogen Receptor α by Calmodulin
J. Biol. Chem. published March 16, 2012 as
doi:10.1074/jbc.M111.334797
[»Abstract](#) [»Full Text](#) [»PDF](#) [»PDF including Supp Data](#) [»Supplemental Data](#) [»Author profile](#) [»Summary](#)

Papers Of The Week, March 9, 2012

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Tao Zhang, Ho-Yon Hwang, Haiping Hao, Conover Talbot Jr., and Jiou Wang
Caenorhabditis elegans RNA-processing Protein TDP-1 Regulates Protein Homeostasis and Life Span
J. Biol. Chem. published March 9, 2012 as doi:10.1074/jbc.M111.311977
[»Abstract](#) [»Full Text](#) [»PDF](#) [»PDF including Supp Data](#) [»Supplemental Data](#) [»Podcast](#) [»Author profile](#) [»Podcast](#) [»Summary](#)

Papers Of The Week, March 2, 2012

Joel W. Thompson, Ameen A. Salahudeen, Srinivas Chollangi, Julio C. Ruiz, Chad A. Brautigam, Thomas M. Makris, John D. Lipscomb,

This Week's Issue

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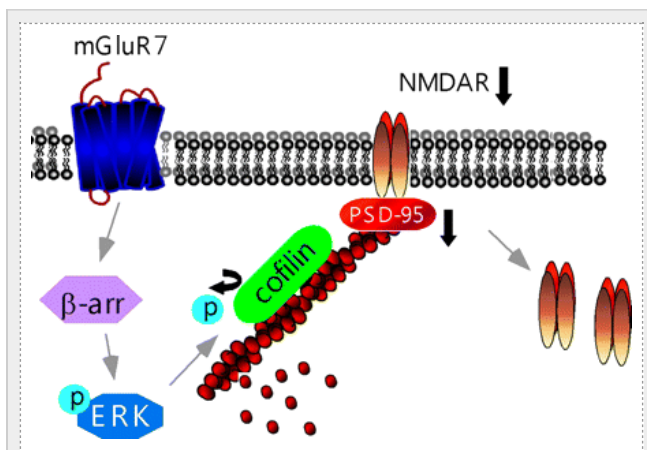
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Figuring Out How a Metabotropic Glutamate Receptor Affects Mental Health

Regulation of *N*-Methyl-D-aspartic Acid (NMDA) Receptors by Metabotropic Glutamate Receptor 7

See referenced article, *J. Biol. Chem.* 2012, 287, 10265–10275

Metabotropic glutamate receptors (mGluRs) are implicated in brain disorders that involve the prefrontal cortex, the part of the brain that is important for cognitive and emotional processes. A potential target of mGluRs is the NMDA glutamate receptor (NMDAR). Malfunctions in NMDAR regulation are associated with schizophrenia and other mental illnesses. In this Paper of the Week, Zhen Yan and colleagues at the State University of New York at Buffalo looked at how one particular type of mGluR, called mGluR7, interacted with NMDAR. mGluR7 has a very low affinity for glutamate and is activated only in conditions associated with diseases. The investigators discovered that mGluR7 inhibits NMDAR function by affecting actin dynamics and decreasing NMDARs at the synapses. The authors say their data suggest a mechanism by which mGluR7 regulates prefrontal cortex activities and that the receptor could be a target in treating mental disorders.



Schematic model for mGluR7 regulation of NMDARs. Activation of mGluR7 affects actin depolymerization and NMDAR trafficking at the synapses.

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doi: 10.1074/jbc.P111.325175
March 23, 2012 The Journal of Biological Chemistry, 287, 10276.

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