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Poster Sessions

Collapsin response mediator protein 2 was one of targets for 15-deoxy - $\Delta^{12,14}$ -prostaglandin J₂

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15-deoxy- $\Delta^{12,14}$ -prostaglandin J₂ (15d-PGJ₂) is one of factors contributed to the neurotoxicity of amyloid β , a causative protein of Alzheimer's disease. A proteomic approach with biotinylated 15d-PGJ₂ was used to identify its targets in the plasma membrane of rat cortical neurons. Previously, we have identified plasmalemmal targets as biotin-positive spots and classified into three functional proteins: glycolytic enzymes (enolase 1, enolase 2, pyruvate kinase isozymes M1/M2 and glyceraldehyde 3-phosphate dehydrogenase), molecular chaperones (heat shock protein A8 and T-complex protein 1 subunit a), cytoskeletal proteins (Actin β , F-actin-capping protein, tublin β , internexin α and glial fibrillary acidic protein). In the present study, we identified collapsin response mediator protein 2 (CRMP2) as one of membrane targets for 15d-PGJ₂. This novel target is known as a cytosolic protein, suggesting its ectopic localization. 15d-PGJ₂ possesses opposite functions as a neuroprotectant at low concentrations and a neurotoxicant at high concentrations in the brain. Its nuclear receptor, peroxysome proliferator-activated receptor- γ , contributes to the neuroprotective effect of 15d-PGJ₂, but not to the neurotoxic effect. Its membrane receptor, chemoattractant receptor-homologous molecule expressed on T-helper type 2 cells, is not also involved in the neurotoxicity. Further studies are required to clear how 15d-PGJ₂ could inhibit neurite outgrowth and induce neuronal apoptosis via CRMP2.