

Development of high sensitivity bioluminescent enzyme immunoassay for oxytocin as biomarkers for psychiatric disorder

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Autistic spectrum disorder (ASD) is known as a disease of wide prevalence in children. DSM-IV is currently used as the diagnosis of ASD in clinical psychiatry. However, it is difficult to provide a definitive diagnosis of ASD. As the reason, characteristics of ASD are very similar to that of schizophrenia or social anxiety disorder. Therefore, if children develop ASD until in early childhood and cannot be received treatment, they will have a high risk secondary disorder, depression etc. As a result, development of simple clinical laboratory test for ASD is necessary for early detection and rapid cure of that disorder. Recently, it has been suggested that ASD patients have low level of OXT in their plasma. Therefore, OXT might be able to be used as one of the biomarker for ASD, psychiatric disorder.

In this report, we developed highly sensitive bioluminescent enzyme immunoassay (BLEIA) for OXT utilizing the Luciferin/luciferase detection system.

On this assay, the detection limit was 1 pg/assay (B0-3SD). Additionally, in the result of the cross reactivity examination, we conclude that BLEIA was developed high sensitively and specifically measurement for OXT. But it might not be able to measure of OXT in plasma of ASD patients, which is estimated to very low level. Finally, we will propose to the modification of secondary antibody immobilized magnetic particles preparation, assay protocol and labeled antigen or re-selection of anti-OXT antibody, to contribute as clinical laboratory test for psychiatric disorder, ASD.

Biography

Yoshihiro Sano has completed his Ph.D at the age of 28 years from Showa University. His work is development of high sensitive analytical method for peptide hormone etc, now.