**Kurniawati. 2005. Ekspresi Protein Reelin pada Fetus Mencit (*Mus musculus*) Yang Terinduksi 2-Methoxyethanol (2-ME) Saat Masa Organogenesis Otak. Skripsi dibawah bimbingan Drs. Win Darmanto, M. Si, Ph.D dan Drs. I. B. Rai Pidada, M.Si. Jurusan Biologi, Fakultas Matematika dan Ilmu Pengetahuan Alam. Universitas Airlangga. Surabaya.**

## ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh *2-Methoxyethanol* (2-ME) terhadap kematian sel, profil total protein dan ekspresi protein Reelin pada jaringan otak mencit (*Mus musculus*). 2-ME merupakan senyawa yang bersifat toksik terhadap jaringan embrional. Reelin yang merupakan protein ekstraseluler yang sangat penting terhadap migrasi sel saraf dalam proses pembentukan laminasi otak dan perkembangan otak secara keseluruhan.

Mencit bunting pada umur kebuntingan (UK) 10 hari diberi 2-ME melalui injeksi intraperitoneal, sedangkan pada kelompok kontrol diberi pelarut akuabides. Induk mencit dibunuh secara dislokasi servix pada 48, 72 dan 96 jam setelah perlakuan untuk diambil fetusnya. Otak fetus dibagi tiga macam pengamatan, yaitu digunakan untuk pengamatan kematian sel, profil total protein dan ekspresi protein Reelin. Data kematian sel dianalisis dengan *Wilcoxon sign rank test* sedangkan untuk profil total protein dan protein Reelin dianalisis secara deskriptif.

Hasil pengamatan kematian sel menunjukkan adanya peningkatan kematian sel pada kelompok perlakuan (44, 58%) bila dibandingkan dengan kelompok kontrol (15, 75%). Hasil pengamatan profil total protein yang diamati dengan SDS-PAGE dan selanjutnya densitas band diukur dengan densitometri menunjukkan adanya penurunan kandungan total protein meskipun pada band tertentu menunjukkan adanya peningkatan kandungan protein. Sedangkan pengamatan terhadap ekspresi protein Reelin dengan menggunakan antibodi CR-50 (metode *Western Blot*) dan selanjutnya densitas band diukur dengan densitometri, menunjukkan eskpresi protein Reelin menurun setelah 48 jam pemberian 2-ME dan meningkat lagi pada selang waktu 96 jam setelah pemberian 2-ME.

Dari hasil penelitian ini disimpulkan bahwa dosis tunggal 2-ME 12,5 mmol/kg BB yang diberikan pada masa prenatal (UK 10 hari) menyebabkan kematian sel, mempengaruhi kandungan total protein dan tidak menyebabkan penurunan ekspresi protein Reelin pada saat terjadi perkembangan otak.

**Kata kunci: *2-methoxyethanol* (2-ME), otak, protein Reelin, Western Blot.**

**Kurniawati, 2005, Expression of Reelin in Mice Fetuses (*Mus musculus*) Induced by 2-Methoxyethanol (2-ME) On The Stage of Brain Organogenesis. This Scription is Supervised by Drs. Win Darmanto M.Si, Ph.D And Drs. I. B. Rai Pidada M.Si, Biology Department, Faculty of Mathematics and Natural Sciences, Airlangga University Surabaya.**

## *ABSTRACT*

The purposes this research are designed to evaluate the effects of 2-methoxyethanol (2-ME) to the cell death, the profile total of protein and the expression of Reelin in brain tissue of mice embryo. 2-ME is a toxic substance to embryonic tissue. Reelin is a extracellular protein that important for migrating neuron cell in brain layering process and brain development.

Pregnant mice on gestation day (GD) 10 were injected intraperitoneally and the controls were given aquabidest. The fetus was killed by cervix dislocation at 48, 72 and 96 hours after 2-ME administration. Brains of fetus were colelected and divided into three treatments, such as cell death, profile total of protein and Reelin expression. The data of cell death was analyzed with *Wilcoxon sign rank test*. Descriptive point of view was used to analyze the profile total of protein and Reelin expression.

The results of cell death show that the number when observed cell death was increase in the treatment groups (44, 58%) rather than control groups (15, 75%). The result of profile total of protein that observed with SDS-PAGE and the density band was measured by densitometry, showed that content of total protein was decreased although it in some band show increased. The expression of Reelin by antibody CR-50 (*Western Blot* method) and then density band was measured by densitometry, showed that Reelin expression decreased after 48 hours from 2-ME administration and increased after 96 hours 2-ME administration.

These results suggested that single dose of 2-ME 12,5 mmol/kg body weight that gave on prenatal (GD10) causes cell death, causes the profile of total protein were decreased and expression of Reelin in brain was not decreased.

**Key words : brain, *2-methoxyethanol* (2-ME), protein Reelin, Western Blot.**