Letter to the Editor

Olanzapine and S100 Proteins

Hari Manev*¹ and Radmila Manev¹

¹The Psychiatric Institute, Department of Psychiatry, University of Illinois at Chicago, Chicago, IL, USA

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Sir

In their recent paper, Fatemi *et al* (2006) reported on differential gene expression in the frontal cortex of rats chronically treated with olanzapine. They noted that two genes from the family of S100 proteins, S100A8 and S100A9, were significantly upregulated by olanzapine; S100A8 was increased at least twofold and S100A9 fourfold. Olanzapine is typically used to treat schizophrenia, bipolar disorder, and some forms of depression. Interestingly, it was recently suggested that an upregulation of S100 proteins might be common to antidepressant treatments (Manev and Manev, 2006).

The S100 protein family, which comprises 19 members, most of which are expressed in the brain (Donato, 1999), has been studied for its putative role in neurodegeneration (Businaro *et al*, 2006) and depression (Hetzel *et al*, 2005). A report by Whitaker-Azmitia *et al* (1993) pointed to a link between antidepressants and the glial release of S100B protein. Antidepressants were also shown to be capable of increasing the expression of S100B (Akhisaroglu *et al*, 2003). Subsequently, it was found that S100A10 protein content is lower in the postmortem brain of depressed subjects compared to samples from nondepressed controls, whereas experimental animals treated with antidepressants had elevated brain levels of S100A10 (Svenningsson *et al*, 2006).

The new information published by Fatemi *et al* (2006) provides additional impetus to research the putative role of S100 proteins in the pathobiology of neuropsychiatric

disorders and in the mechanisms of action of psychotropic drugs.

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*Correspondence: Dr H Manev, The Psychiatric Institute, Department of Psychiatry, University of Illinois at Chicago, 1601 West Taylor Street, MC912, Chicago, IL 60612, USA, Tel: +1 312 413 4558, Fax: +1 312 413 4569, E-mail: HManev@psych.uic.edu

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