ALTERATIONS IN BRAIN CEREBRAL CORTEX PROTEOME OF RABIES-INFECTED CAT

Songsri Kasempimolporn, Boonlert Lumlertdacha, Pannipa Chulasugandha, Supatsorn Boonchang and Visith Sitprija

Queen Saovabha Memorial Institute (WHO Collaborating Center for Research on Rabies), Thai Red Cross Society, Bangkok, Thailand

Abstract. Comparative proteome analysis using brain cerebral cortex tissues from cats and dogs infected with/without rabies virus were conducted using both two-dimensional gel-electrophoresis (2-DE) and 2-D fluorescence difference gel-electrophoresis (2D-DIGE) methods. The 2-DE gel images of all samples revealed >1,000 protein spots in each gel. Quantitative intensity analysis revealed the same overall protein pattern in certain regions of the gel, but the rabies-infected brains exhibited more protein spots than the non-infected controls. From approximately 880 protein spots detected by 2D-DIGE, 65 protein spots were increased and 46 were decreased. Eight of these protein spots were randomly selected and annotated by reference to previous known proteome data of rabid dog brains. They were similarly altered in both of the rabies-infected cats and dogs. A more detailed comparison of changes in proteomic profiles of brains between rabid cats and dogs should shed some light on the pathophysiological mechanism of rabies in domestic animals, as most rabies cases have been traceable to or believed to have originated from rabid dogs.

Keywords: brain proteomics, cat, cerebral cortex, 2-DE, 2D-DIGE, rabies

Correspondence: Dr Songsri Kasempimolporn, Queen Saovabha Memorial Institute, Thai Red Cross Society, 1871 Rama IV Road, Bangkok 10330, Thailand.
Tel: +66 (0) 2252 0161x150; Fax: +66 (0) 2254 0212
E-mail: songsri.k@redcross.or.th