ABSTRACT

Background: S-100 is a calcium binding protein in a molecular weight of approximately 22 kD found in neural cells, Schwann cells and melanocytes. Several studies have demonstrated that serum concentrations of S-100 can be used as a potential biomarker for disease severity and outcome after traumatic brain injury (TBI) or spinal cord injury (SCI).

Objectives: The purpose of the study was to evaluate the performance characteristics and interpret results of commercially available ELISAs for S-100 by comparison with the YK150 ELISA.

Methods: Standard curve samples were analyzed in triplicate in a real testing workflow as utilized in the study. 1000 ng/mL S-100b was used as the positive control. Results from the Sangtec assay were compared to the YK150 ELISA.

RESULTS

The Sangtec protein has a homodimeric β,β-chain structure and is found in astroglial and Schwann cells. S-100B is highly specific for tissue of the brain, spinal cord and peripheral nerve system. Two ELISA method comparisons were performed according to each manufacturer’s instructions. The Sangtec kit was compared to the YK150 ELISA in a single laboratory.

CONCLUSIONS

The Sangtec and YK150 S-100B ELISAs are comparable in performance. Both assays have lower limits of detection and are more sensitive than the YK150 ELISA.

Madonna S-100B ELISA is a second generation ELISA that is highly sensitive and specific for the detection of S-100B in serum.

Evaluation and Method Comparison of Three ELISAs for Quantifying S-100B in Serum

J. A. Erickson1, D. G. Grenache1,2

1ARUP Institute for Clinical and Experimental Pathology, ARUP Laboratories, Salt Lake City, UT; 2University of Utah Health Sciences Center, Department of Pathology, Salt Lake City, UT.

MATERIALS AND METHODS

Comparison with the YK150 ELISA.

The Sangtec protein has a homodimeric ß,ß-chain structure and is found in astroglial and Schwann cells (1). S-100B is highly specific for tissue of the brain, spinal cord and peripheral nerve system. Two ELISA method comparisons were performed according to each manufacturer’s instructions. The Sangtec kit was compared to the YK150 ELISA in a single laboratory.

RESULTS

The Sangtec and YK150 S-100B ELISAs are comparable and both assays have lower limits of detection, better linearity and are more sensitive than the YK150 ELISA. Although agreement in results is good among all assays, the Sangtec and YK150 ELISAs demonstrate better correlation with each other.

CONCLUSIONS

The Sangtec and YK150 S-100B ELISAs are comparable in performance. Both assays have lower limits of detection and are more sensitive than the YK150 ELISA.

ACKNOWLEDGMENTS

The ARUP Institute for Clinical and Experimental Pathology provided financial support.