vestigation revealed a grossly hemolyzed sample, representing the most common type of preanalytical error. A nonhemolyzed sample for the same patient (Fig. 1C) correlated well with the initial IFE.

Author Contributions: All authors confirmed they have contributed to the intellectual content of this paper and have met the following 3 requirements: (a) significant contributions to the conception and design, acquisition of data, or analysis and interpretation of data; (b) drafting or revising the article for intellectual content; and (c) final approval of the published article.

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Where Has All the $\beta_1$-Transferrin Gone?
Yu Chen,1,2,* James Samsoondar,3 and Liju Yang4,5

CASE DESCRIPTION
A 50-year-old woman with advanced breast cancer underwent a lumbar spinal fusion to treat cord compression caused by metastases. There was a nonbloody, nonpurulent serous drainage from the incision. $\beta_2$-Transferrin was measured to rule out cerebrospinal fluid (CSF) leakage (Fig. 1).

Fig. 1. $\beta_2$-Transferrin testing of back drainage fluid and serum from the 50-year-old woman.
Trf, transferrin.

References
**QUESTIONS**

1. How many transferrin bands are typically seen in CSF?
2. What might cause the absence of $\beta_1$-transferrin in a biological fluid?

**The answers are below.**

**ANSWERS**

Serum contains $\beta_1$-transferrin, and CSF contains $\beta_1$ and $\beta_2$ transferrins. The $\beta_2$-transferrin in CSF is desialylated because of the presence of neuraminidase in the central nervous system. Hence, $\beta_2$-transferrin is used as a marker of CSF leakage (1).

Because $\beta_1$-transferrin was present in serum but absent in drainage fluid, additional neuraminidase activity was suspected. This suspicion was supported by the culture of *Staphylococcus aureus* from the fluid. Most *S. aureus* strains have neuraminidase activity (2), and sepsis is associated with decreased sialylation of circulating transferrin (3).

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**References**


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**News & Views**

**Personalized Therapeutics and Companion Diagnostics: A New Paradigm in Testing and Treatment**

**Nicholas E. Heger** and **Mark D. Kellogg**

The emerging field of personalized medicine has been touted as the next big revolution in medicine, promising customized therapies for a variety of notoriously hard-to-treat diseases. The realization of these benefits is largely dependent on advances in pharmacogenomic, proteomic, and biomarker testing technologies, which can be used to identify individuals most likely to benefit from a particular drug therapy, or to evaluate their course of treatment. A recent article in *Nature Biotechnology* entitled “Maximizing the Commercial Value of Personalized Therapeutics and Companion Diagnostics,” by Zhang et al. (1), discusses...