CASE DESCRIPTION

The random urine sample shown in Fig. 1 was collected from a 43-year-old woman with systemic lupus erythematosus. A routine urinalysis (Aution Max AX-4280; Iris Diagnostics) revealed no remarkable findings and, specifically, was negative for protein. The corresponding urine protein concentration, however, was 448 mg/dL (reference interval, ≤12 mg/dL) as measured with a turbidimetric assay (Cobas c701; Roche Diagnostics). Protein concentrations in urine samples previously collected from this patient were undetectable.
QUESTIONS
1. What is responsible for the unique appearance of this urine sample?
2. Why did the substance interfere with testing on one platform but not the other?
3. What precautions should be taken to prevent this interference in urine testing?

The answers are below.

The bright yellow color was due to fluorescein sodium given intravenously 2 h before urine collection for retinal angiography. The urine dipstick test for protein uses a pH indicator and is not affected. Fluorescein exhibits a broad absorption peak at 495 nm (1); urine total protein is measured at 505 nm with the turbidimetric assay. Fluorescein persists in the urine for 24–36 h (2). Samples should be collected before angiography evaluations to avoid interference with urine (3) and serum (4, 5) chemistry tests.

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References