increasing concentrations of these amino acids were analyzed (data not shown).

These results suggest that Tyr and Leu in serum are measured as Phe to various degrees by the PDH preparations examined here. The increased utilization of Tyr and Leu by the Sigma and Biocatalysts preparations of PDH accounts for the positive biases obtained with these PDH sources. The Calbiochem and Biocatalysts PDH are prepared from Rhodococcus, whereas Sigma PDH is isolated from Sporosarcina ureae. A previous report found substantial reaction of other amino acids with PDH from S. ureae (3), which may explain the reaction with Tyr and Leu by the Sigma PDH preparation seen in our studies. The differences in utilization of Tyr and Leu between the Biocatalysts and Calbiochem PDH preparations might reflect different degrees of purity, such that contaminating activity in the Biocatalysts preparation oxidizes amino acids other than Phe. Of the three sources, only Biocatalysts makes a claim in regard to the specificity of the PDH, stating that reaction with Tyr is <0.5% of that with Phe. Even this low extent of reaction with Tyr can result in substantial interference in end-point clinical assays, where the excess PDH activity added to assure timely, complete reaction also enhances the opportunity of contaminating activity to catalyze side reactions. We urge further effort on the part of manufacturers of PDH to remove contaminating activities or utilize bacterial sources of PDH with minimal cross-reactivity with other amino acids. Until preparations become available that are aimed at (and assessed for) clinical application, users must evaluate independently the actual activity and specificity of PDH preparations they wish to employ.

References

Fig. 1. Comparison of determinations of Phe concentrations in serum specimens (n = 40) by a fluorometric ninhydrin method (x-axis) with values obtained by an enzymatic method and various preparations/amounts of PDH.

The broken line shows the line of identity.

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Saliva and Serum Neopterin Concentrations Not Significantly Correlated in HIV-1 Infection

To the Editor:

The pteridine neopterin, derived from guanosine triphosphate (GTP), is released by macrophages after stimulation by interferon-γ (I), which is itself secreted by stimulated T lymphocytes. Serum neopterin concentrations increase as HIV disease progresses, probably due to continual activation by antigenic challenge, and thus form a prognostic marker for progression to AIDS (2). Neopterin concentration in other body fluids such as bronchoalveolar lavage fluid is an indicator of macrophage activation (3) and cell-mediated immunity (4).

Neopterin has also been detected in human saliva (5); in one study the concentration was increased in the saliva of patients with HIV-1 infection (6). It was not known if this increase was due to local production or was a reflection of the concentrations of neopterin in the serum.

The aim of our study was to investigate whether any correlation exists between concentrations of neopterin in serum and in saliva. Other clinical details such as whether the patient smoked and whether oral candida was present were also recorded.

We determined the neopterin concentration in saliva by RIA (Henning-Berlin, Berlin, Germany). Saliva excretion was stimulated by chewing for 1 min on an inert plastic film and the sample collected into a sterile container. Participants in the study were 9 adults with no known risk factors for HIV infection or known to be HIV antibody-negative (control subjects), and 31 HIV-positive subjects, 19 with AIDS and 6 with oral candida. Ethical approval for the project was obtained.

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from the St. George's Hospital Ethics Committee, and consent forms were signed by all subjects. Serum neopterin concentrations were also measured by RIA.

The saliva neopterin concentration was greater in all patients with HIV infection (mean 2.3 nmol/L, range 0.1–10 nmol/L) than in the control subjects (1.1 nmol/L, range 0–5 nmol/L), but not significantly so (P = 0.16 by unpaired Student's t-test, Fig. 1). This differs from the results obtained by Reibnegger et al., who found that the saliva neopterin concentration was higher in those with HIV-1 infection than in control subjects (6). This difference may be due to the higher percentage of patients with oral candida in their study [5 of 21 patients (38%)] than in ours [6 of 31 (19%)]: Recent studies have confirmed that macrophages are activated by candida in vitro (7). In our study the mean saliva neopterin concentration was 2.2 nmol/L in those with oral candida compared with 2.1 nmol/L in those without oral candida. This was not significant, but the number of subjects with oral candida was small.

The difference between the two studies could not be accounted for by the stage of HIV infection, given that the number of subjects with advanced HIV disease (AIDS) was greater in our study (19 of 31 (61%)) than in Reibnegger's [10 of 21 (48%), WR stage 6 (6)]. Indeed, we found no significant difference in the saliva neopterin concentration between the control and HIV-positive groups (P = 0.38) or between the HIV-positive and AIDS groups (P = 0.36).

The results pooled from all subjects showed no correlation between serum and saliva neopterin concentrations.

(A) Box plots of neopterin concentrations in saliva of control subjects and of patients infected with HIV-1. * represents the median; the lower and upper limits of each box indicate the 25th and 75th percentiles (first and third quartiles); and the vertical lines show the range of observations. The P-value indicates the statistical significance by the unpaired Student's t-test. (B) Serum neopterin concentration plotted against the corresponding saliva neopterin concentration for each subject.

References

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False-Positive Results with Emit® II Amphetamine/Methamphetamine Assay in Users of Common Psychotropic Drugs

To the Editor:

In 1993, Syva Co. (San Jose, CA) introduced in Norway the new Emit® II monoclonal amphetamine/methamphetamine immunoassay for human drugs-of-abuse urine (d.a.u.) screening. It was marketed to replace their monoclonal amphetamine/methamphetamine Emit® d.a.u.™ assay, which cross-reacted with ranitidine, chlorpromazine, pheynlypropanolamine, and other compounds (1). Our laboratory has used the polyclonal amphetamine/methamphetamine Emit d.a.u. for several years, in 1993 screening 25 000 urine samples for drugs of abuse. We have evaluated the Emit II monoclonal antibody assay with a cutoff of 1.0 ng/mL for d-amphetamine and d-methamphetamine. An increase in false-positive screening results was observed. On further investigation, false-positive results were associated with the use of antipsychotic and antidepressant drugs, primarily phenoxyazine derivatives. The present report is the result of