The United States of America

The Director of the United States Patent and Trademark Office

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, or importing into the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

David J. Kappos

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(12) **United States Patent**
Schneider

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(54) **SALIVA ASSAY TECHNIQUE FOR HEAVY METAL**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 616 days.

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(58) **Field of Classification Search** 250/281, 250/282; 73/61.41, 61.42; 436/73, 74, 75, 436/76, 77, 78, 79, 80, 81, 82, 83, 84
See application file for complete search history.

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(57) **ABSTRACT**

A method for determining heavy metal loading in a subject includes collecting a saliva sample from the subject containing a concentration of a heavy metal. The saliva sample is subjected to inductively coupled plasma mass spectrometry to yield a heavy metal loading measurement for the subject. The saliva sample is readily collected on a substrate absorbing a preselected amount of saliva such as filter paper. As the amount of saliva necessary to saturate a given volume of substrate is known, the volume of saliva within a substrate is also known. The resulting heavy metal loading measurement is readily correlated with a blood level for the heavy metal in the subject.

11 Claims, 3 Drawing Sheets