

# Separations

## Banish Manual Pipetting and Sample Prep Forever!

By: Lydia Dodson-Lehrer, Director of Marketing

The Bureau of Labor Statistics estimates that 62% of all new occupational illnesses and 4% of the occupational injury and illness total are currently due to cumulative trauma disorder (CTD). Activities that involve highly repetitive use of the hands, such as manual pipetting, are a common cause of CTD. Injuries from repetitive motion have many costs from direct costs such as medical and rehab to indirect costs from lowered productivity. It's no wonder that the reduction of repetitive motion injuries due to such activities as pipetting is one of the major concerns in laboratories today.



Sebia has designed the HydraPLUS™ system to address this laboratory concern. When paired with the HYDRASYS®, the HydraPLUS eliminates the need for any manual pipetting involving sample preparation and dilution. Precise micro-volumes of sample are delivered directly from primary tubes to four HYDRASYS sample applicators contained in a built-in humidity chamber. This chamber can be removed and placed in the refrigerator. This means that sample applicators can be prepared and stored in a refrigerator for up to 8 hours prior to processing on the HYDRASYS facilitating laboratory workflow.

The HydraPLUS system is designed to ensure fast sample processing while eliminating any risk of sample contamination or evaporation. Up to 216 samples can be prepared every hour!

All types of Sebia assays can be prepared on the HydraPLUS. This includes neat sample and hemolysate applications as well as preparing dilutions for immunofixation techniques. By simply entering an IgG quantitative value, the HydraPLUS will even prepare both serum and spinal fluid samples for our CSF assay.

Programming of the HydraPLUS is simple, yet very flexible, allowing either standard or customized sample dilutions to be performed. This flexibility is particularly useful with immunofixation techniques. As an additional option, dilution ratios or a desired concentration for each sample may be directly entered into the system. The HydraPLUS does the rest.

The Positive Identification option on the HydraPLUS is designed to provide uninterrupted sample tracking from primary tube to sample applicator to gel to final result on the PHORESIS or HYRYS 2. Currently, a worklist is created when bar coded samples are loaded on to the HydraPLUS. The system scans the bar codes on the primary sample tubes as the four racks are loaded. The worklist is automatically created at the scanner or densitometer. Then the samples are prepared and the gels processed.

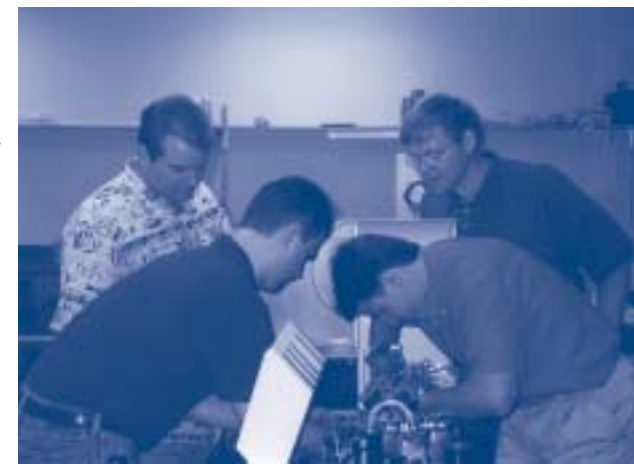
For more information on how the HydraPLUS can banish pipetting from your laboratory, simply circle number 125 on your reader response card.

Clearly Superior...

**AUTOMATICALLY BETTER™**

### Sebia is "At your Service"

Even though Sebia systems have an excellent performance track record, it's always nice to know that experienced Sebia Service Engineers are available to assist our customers 24 - 7. Yes, by simply calling our 800-phone number, you can receive assistance any time of day. This crack team of Service Engineers never rests. When they are not actively working to support our customers, they are committed to improving their skills. Here you can see several engineers putting their heads together as they learn about Sebia's newest system, The CAPILLARYS™. You can be assured that the Sebia Service Team is always "At your Service", dedicated in their efforts to provide service worthy of only the highest customer satisfaction.



Please circle number **127** if you would like to receive any information regarding the Service Programs offered by Sebia.

### Customer Focus (continued)

Depending on the volume for any given day, Centrex can typically turnaround routine, non-stat electrophoresis in roughly 72 hours. Prior to using the HYDRASYS, turnaround time was as much as four or five days.

While speed is essential in healthcare, quality is paramount...and Sebia's instrument hits high marks with the Centrex team in this area. According to Dr. C. Brett Hon, Pathologist, the quality of Sebia's gels is "dramatic. We feel extremely confident about their accuracy," he explains. "The previous gels we were using had a tendency to warp and bend, which meant we had to repeat a lot of examinations. Moving to Sebia has eliminated that problem. And, we can run anywhere from nine to 30 tests on the Sebia gel, depending on gel size."

Towne reports that neither the pathologists nor lab staff expressed any qualms about moving to fully automated electrophoresis. "It helped that we had the opportunity to evaluate the HYDRASYS in-house for a couple of weeks before we finalized our decision. All of our techs had the opportunity to use it, and the response was a resounding 'yes'," he says. Conkling adds that the clarity of results was a major selling point. "The points are very definite - so much better than what we had before," she says.

According to Towne, installation was painless and completed in about a month, including time for training and validation. "I would consider that a very quick timeframe," he notes. "Sebia provided terrific on-site support throughout implementation. And in the time we've been up and running, we've had a couple of minor issues that have been easily resolved through the 800 number. Sebia's engineers are very responsive. We've never experienced any downtime with this system."

Overall, would the Centrex team recommend the HYDRASYS to industry peers? Consider Dr. Hon's assessment: "If you're looking for a system that can reduce tech time, provide high resolution and outstanding gel quality, get the HYDRASYS. This is a very high quality product."

#### About Centrex Clinical Laboratories, Inc.

Established in 1969, Centrex Clinical Laboratories provides quality laboratory services to a wide variety of clients ranging from physicians, hospitals, clinics and nursing homes to veterinarians and industry. As the premier regional laboratory in upstate New York, Centrex is nationally recognized as the gold standard model for community-based laboratory systems with excellence in quality process, technical expertise and information systems. In 1999, Centrex performed approximately three million billable tests in its five laboratories and thirty patient service centers throughout the region. "Would you like more information? Simply circle number **128** on your reader response card".

Visit our new website at  
[www.sebia-usa.com!](http://www.sebia-usa.com)



**sebia**  
electrophoresis

400 - 1705 Corporate Drive • Norcross, GA 30093 • Telephone: (800) 835-6497 • Fax: (770) 446-8511 • [www.sebia-usa.com](http://www.sebia-usa.com)  
Editor: Lydia Dodson-Lehrer, MBA, M.T. (ASCP)

electrophoresis  
**sebia**®



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

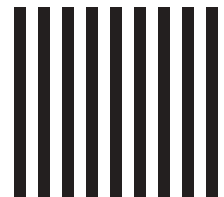
**BUSINESS REPLY MAIL**

FIRST CLASS MAIL

PERMIT NO. 937

NORCROSS, GA

SEBIA ELECTROPHORESIS  
1705 CORPORATE DR STE 400  
NORCROSS, GA 30093-9982



**We Need Your Feedback**





## Electrophoresis and Immunofixation of Urine Part 2

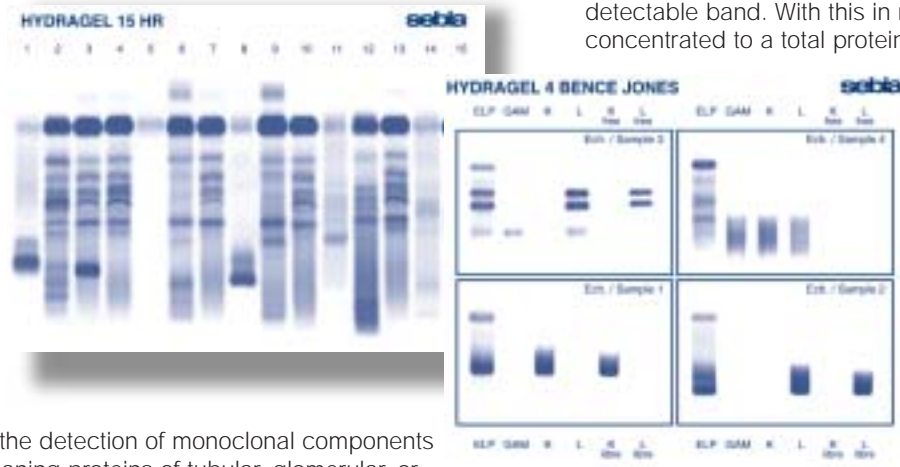
In part 1 of this series, I discussed sample handling and processing. This article will address procedural concerns relating to the handling and testing of urine samples.

### PROCEDURAL ASPECTS

Different programs are available on the HYDRASYS allowing laboratories to select which level of sensitivity they require for urine testing. For example, by using the Bence Jones migration program, sensitivity of detection is increased about 10 times over the 2/4 IF program. Additionally, this enhanced detection means that the sample can be run undiluted in most cases.

Avoid the cost of over concentration! This often results in false bands due to protein aggregation and decrease in solubility. These samples usually have to be rerun at a lower dilution. Table 1.

Urine electrophoresis is normally performed in order to detect monoclonal components and other urinary proteins. Urines can either be run on Sebia's Protein or  $\beta$ 1- $\beta$ 2 assay, or alternatively, on Sebia's High Resolution assay (HR) as a screening test. HR allows the detection of monoclonal components and proteinuria, meaning proteins of tubular, glomerular, or mixed origin. Of course, monoclonal components must be confirmed and identified by immunofixation and proteinuria characterized with suitable methods including Sebia's Proteinuria assay.



### HYDRASYS PROGRAMS - LOWER DETECTION LIMITS

Table 1

HYDRAGEL TEST	DETECTION LIMIT (mg/dL)
Protein(e) & $\beta$ 1- $\beta$ 2	10 - 40
HR1 & HR2	10 - 40
HR3	1.5 - 2.0
2/4 IF (amido black staining)	15 - 50
2/4 IF (acid violet staining)	15 - 25
Bence Jones (free & bound LC antiserum)	1 - 2
Bence Jones (free LC antiserum) <sup>a</sup>	> 5

**\*Note:** Always use the Bence Jones program with free light chain antisera.

### RECOMMENDED MIGRATION AND STAINING PROGRAMS FOR URINE

Table 2

MIGRATION PROGRAM	TOTAL PROTEIN CONCENTRATION	STAINING PROGRAM	NOTE
Protein(e) or $\beta$ 1- $\beta$ 2	>1.5 - 2 g/dL	amido black	
HR2	0.5 - 1 g/dL	acid violet	<sup>b,c</sup>
HR3	neat	acid violet	<sup>b</sup>

<sup>a</sup> for visual interpretation

<sup>b</sup> detection when the corresponding protein concentration is  $\geq$  2 mg/dL.

<sup>c</sup> Mol. Wt. cut-off of concentrators, 10 kDa

### CONCENTRATION REQUIREMENTS FOR URINE IMMUNOFIXATION

Table 3

Total protein (mg/dL)	IF migration program		BJP migration program	
	Concentration factor	Total protein (mg/dL)	Concentration factor	Total protein (mg/dL)
<20	50 x	<10 - 30 <sup>a</sup>	5 - 10x <sup>a</sup>	
20 - 100	25 x	20 - 1000	neat	
100 - 500	5 x	>1000	dilute to 500 - 1000 mg/dL	
>500	neat			

Table 2 outlines the recommended assay to be used depending on the total protein of the sample.

With Sebia's standard 2/4 IF migration program and using acid violet staining, the detection limit of 15-25 mg/dL, in Table 3, corresponds to the lowest concentration of monoclonal protein which will yield a detectable band. With this in mind, most urine samples must be concentrated to a total protein concentration of >0.5 g/dL or a total Ig of approximately 0.1 g/dL. It is always best to know the urine protein or Ig concentration prior to testing, but if these are not known, concentration of samples 50x - 80x is suggested.

In part 3 of this series, I will discuss interpretation of urine electrophoretic patterns so be sure to stay tuned. In the meantime, if you would like to receive any additional information regarding the assays listed above, simply circle number **126** on your reader response card

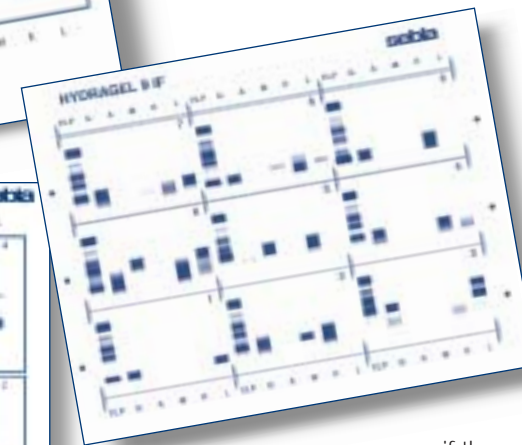
and list the assay(s) in which you are interested in the comment section of the card.

*In the meantime, keep sending in those questions. You may send them to me by mail at Sebia, 400 - 1705 Corporate Drive, Norcross, GA 30093, attn. "Ask Borek", by fax at 770-446-8511 attention "Ask Borek", or by e-mail at [bjanik@sebia-usa.com](mailto:bjanik@sebia-usa.com). Whichever method you choose, include your name, laboratory name and phone number should I have questions for you.*

## Customer Focus



Centrex turns to Sebia solution to fight disturbing epidemic: Staffing shortages



Resolution is what the medical laboratory is all about - determining causes and finding cures for complex conditions. Yet many high volume labs in today's cost-sensitive healthcare environment are struggling to resolve a growing problem: the limited supply of personnel.

Centrex Clinical Laboratories in Utica, N.Y., was facing that very challenge. As a hospital-based reference lab serving three hospitals and several outpatient clinics, Centrex is knee-deep in work...much of it on a 'stat' basis. But while the volumes keep spiraling higher, the lab staff remains lean.

Tim Towne, Chemistry/Special Chemistry Supervisor, points to two issues that challenge the heavy workload. "In our industry, qualified people are very hard to find," he notes. "On the other hand, like other organizations, we're under enormous pressure to reign-in our operating costs - so it would be difficult for us to justify hiring huge teams of personnel even

if they were available."

Realizing that the lab would have to handle the ever-increasing amount of work without adding staff, Towne and his colleagues determined that a new electrophoresis system was needed to further automate this routine testing, thus freeing up per-

sonnel time for other tasks. While Centrex already had an electrophoresis system in place, the instrument required significant hands-on time and was not 'walkaway' enough to meet the lab's needs.

"What we liked about Sebia's HYDRASYS was that it took over most of the manual tasks we were doing on the previous system - allowing us to focus on other kinds of testing while running electrophoresis," Towne explains. The HYDRASYS expedites the multiple steps involved in electrophoresis and immunofixation, automatically handling everything from sample application to migration to incubation to staining, destaining and drying.



"Best of all, we can comfortably handle all of this without new personnel," Towne adds. Med Tech Cheryl Conkling a 30-year industry veteran, is grateful for the timesavings; she runs four other instruments along with the HYDRASYS. "I consider myself lucky to be able to get in and out of electrophoresis as fast as I can," she says. "The HYDRASYS is extremely easy to use - I just turn it on and go. It seems to be about two to three times faster than our old system."

**"The quality of Sebia's gels is dramatic. We feel extremely confident about their accuracy."**

Dr. C. Brett Hon, Pathologist

Using the Sebia 4 IF and 9 IF gels, Centrex can run smaller or larger batches of tests as the workload changes day to day. Because the lab does not run electrophoresis on a daily basis, the 9 IF gel has been particularly helpful in getting through accumulated volumes more quickly.

By drastically cutting the time they used to spend on electrophoresis, Centrex techs can now tackle other testing that previously was outsourced. This has significantly reduced expenditures and generated additional revenues for Centrex.

**"Sebia's engineers are very responsive. We've never experienced any downtime with this system."**

Tim Towne, Chemistry/Special Chemistry Supervisor

## We Need Your Feedback

In order to better serve you, we constantly update our **Sebia Separations** Mailing list. Please complete this card and return to us.

Please circle the reader service numbers of those items on which you would like more information.

article **125**

article **126**

article **127**

article **128**

Number of electrophoresis tests run per week.

Protein\_\_\_\_\_ Immunofixations\_\_\_\_\_ Hemoglobin\_\_\_\_\_

Please include your name and address here.

---



---



---

check here if this is a new address

Comments: \_\_\_\_\_

---



---

Thank You for Your Assistance