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| <p>1. Name of party or parties conveying an interest:</p> <p>Terry J. Bowersock<br/>Paul Guimond<br/>Tzu-Chi R. Ju<br/>Argaw Kidane</p>   | <p>2. Name and address of party or parties receiving an interest:</p> <p>Name: PHARMACIA &amp; UPJOHN COMPANY, a Delaware Corporation<br/>Address: Global Intellectual Property Building 209<br/>301 Henrietta Street<br/>City: Kalamazoo<br/>State: Michigan<br/>Zip: 49001</p> |
| <p>3. Description of the interest conveyed:</p> <p><input checked="" type="checkbox"/> Assignment<br/><input type="checkbox"/> Merger<br/><input type="checkbox"/> Change of Name<br/><input type="checkbox"/> Security Agreement</p> <p>Execution Dates: May 4, 2001 and June 8, 2001</p>  | <p>Other:</p>  |
| <p>4. Application number(s) or patent number(s). Additional sheet attached?<br/>YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>A. Patent Application no.(s): 09/853,919 filed May 11, 2001</p>  | <p>If the document is being filed together with a new application, the execution date of the application is:</p> <p>B. Patent no.(s):</p>  |
| <p>5. Name and address of party to whom correspondence concerning this cover sheet should be mailed:</p> <p>Name: James P. Zeller<br/>Reg. No.: 28,491<br/>MARSHALL, O'TOOLE, GERSTEIN,<br/>MURRAY &amp; BORUN<br/>Street Address: 6300 Sears Tower<br/>233 S. Wacker Drive<br/>City: Chicago<br/>State: Illinois<br/>Zip: 60606-6402</p> | <p>6. Number of applications and/or patents identified on this cover sheet: 1</p> <p>7. Amount of fee enclosed or authorized to be charged: \$40.00</p> <p>8. Any additional required fee may be charged, or any overpayment credited to our deposit account: 13-2855</p>        |

9. To the best of my knowledge and belief, the information contained on this cover sheet is true and correct and any copy submitted is a true copy of the original document.

Date:

July 31, 2001

James P. Zeller  
Reg. No. 28,491

Total number of pages including cover sheet, attachments, and document: 5

**ASSIGNMENT**

**Title:** VACCINE COMPOSITION, METHOD OF PREPARING THE SAME, AND METHOD OF VACCINATING VERTEBRATES

**Inventors:** Terry L. Bowersock, Paul Guimond, Tzu-chi R. Ju, and Argaw Kidane

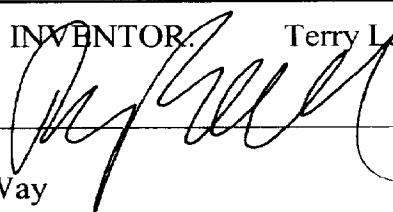
**Serial No.:** 09/853,919      **Filing Date:** May 11, 2001

**Docket No.:** 28341/6127N   **Country:** USA

As a below-named inventor, I hereby declare that:

My post office address is as stated below under my signature and I am named as inventor of the inventions or discoveries (herein INVENTIONS) as described in the patent application (herein APPLICATION) identified above. In view of valuable consideration, receipt thereof being hereby acknowledged, I do hereby assign and transfer unto PHARMACIA & UPJOHN COMPANY, a corporation of the state of Delaware having a place of business at Kalamazoo, Michigan, its successors and assigns, my entire interest in, and the full and exclusive right to, the INVENTIONS, the APPLICATION and all related applications (including all divisions, reissues, continuations, and extensions thereof) and all counterparts in other countries, and any and all Letters Patent (and certificates of invention or similar certificates) (herein PATENTS) which may be granted based upon the INVENTIONS or the APPLICATION or related applications or counterparts in other countries; said transfer and assignment being applicable throughout the world. I hereby authorize and request officials of patent offices in any and all countries of the world to issue any and all of the PATENTS, when granted, to PHARMACIA & UPJOHN COMPANY, its successors and assigns, as the assignee of my entire right, title, and interest in and to the same. I agree that I will communicate to PHARMACIA & UPJOHN COMPANY, or its representatives, any facts known to me respecting the invention; testify in any legal proceedings; sign all lawful papers; execute all divisional, continuation, substitution, renewal, and reissue applications; execute all necessary assignment papers to cause any and all of the PATENTS to be issued to PHARMACIA & UPJOHN COMPANY; make all rightful oaths; and generally do everything possible to aid PHARMACIA & UPJOHN COMPANY, its successors and assigns, to obtain and enforce proper protection for the INVENTION in any and all countries throughout the world.

FULL NAME OF FIRST/SOLE INVENTOR: Terry L Bowersock

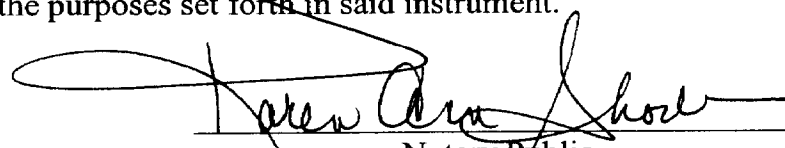
Signature of Inventor: 

Address: 3160 Lost Pine Way  
Portage, MI 49024


STATE OF MICHIGAN  
COUNTY OF KALAMAZOO

On June 22, 2001, the above-named inventor personally appeared before me and executed the foregoing instrument and acknowledged the same to be his/her free act and deed in and for the purposes set forth in said instrument.

SEAL \_\_\_\_\_

  
Notary Public  
KAREN ANN SHORB  
Notary Public, Kalamazoo County, MI  
My Commission Expires 10/16/2003

FULL NAME OF SECOND/JOINT INVENTOR: Paul Guimond

Signature of Inventor: 

Address: 3335 Fair Oaks Drive  
Kalamazoo, MI 49001

STATE OF MICHIGAN  
COUNTY OF KALAMAZOO

On June 25, 2001, the above-named inventor personally appeared before me and executed the foregoing instrument and acknowledged the same to be his/her free act and deed in and for the purposes set forth in said instrument.

SEAL \_\_\_\_\_

  
Notary Public  
KAREN ANN SHORB  
Notary Public, Kalamazoo County, MI  
My Commission Expires 10/16/2003

FULL NAME OF FOURTH/JOINT INVENTOR: Argaw Kidane

Signature of Inventor: \_\_\_\_\_

*Argaw Kidane*

Address: 1144 Bridford Lake Circle Apt. G  
Greensboro, NC 27407

STATE OF NORTH CAROLINA  
COUNTY OF GUILFORD

On June 25 2001, the above-named inventor personally appeared before me and executed the foregoing instrument and acknowledged the same to be his/her free act and deed in and for the purposes set forth in said instrument.

SEAL \_\_\_\_\_

*Brenda Gale Burke*

Notary Public

FULL NAME OF THIRD/JOINT INVENTOR: Tzu-Chi R. Ju

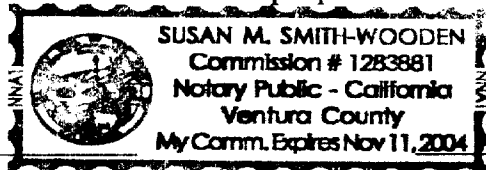
Signature of Inventor: \_\_\_\_\_

Address: 2033 Harrier Court  
Thousand Oaks, CA 91320

STATE OF CALIFORNIA  
COUNTY OF VENTURA

On 6-30-2001, the above-named inventor personally appeared before me and executed the foregoing instrument and acknowledged the same to be his/~~her~~ free act and deed in and for the purposes set forth in said instrument.

SEAL



Susan M. Smith-Wooden  
Notary Public