

# Final Progress Report for Research Projects Funded by Health Research Grants

Instructions: Please complete all of the items as instructed. Do not delete instructions. Do not leave any items blank; responses must be provided for all items. If your response to an item is “None”, please specify “None” as your response. “Not applicable” is not an acceptable response for any of the items. There is no limit to the length of your response to any question. Responses should be single-spaced, no smaller than 12-point type. The report **must be completed using MS Word**. Submitted reports must be Word documents; they should not be converted to pdf format. Questions? Contact Health Research Program staff at 717-783-2548.

1. **Grantee Institution:** University of Pittsburgh- of the Commonwealth System of Higher Education
2. **Reporting Period (start and end date of grant award period):** 01/01/2009 – 12/31/2012
3. **Grant Contact Person (First Name, M.I., Last Name, Degrees):** Margaret C. McDonald, Ph.D.
4. **Grant Contact Person’s Telephone Number:** 412-383-7474
5. **Grant ME Number or SAP Number:** 4100047655
6. **Project Number and Title of Research Project:** 04 – Therapeutic Vaccine Trials in Recurrent Prostate Cancer
7. **Start and End Date of Research Project:** 01/01/2009 – 12/31/2010
8. **Name of Principal Investigator for the Research Project:** Gurkamal S. Chatta, MD
9. **Research Project Expenses.**

9(A) Please provide the amount of health research grant funds spent on this project for the entire duration of the grant, including any interest earned that was spent:

\$ 469,795.43

9(B) Provide the last names (include first initial if multiple individuals with the same last name are listed) of **all** persons who worked on this research project and were supported with health research funds. Include position titles (Principal Investigator, Graduate Assistant, Post-doctoral Fellow, etc.), percent of effort on project and total health research funds expended for the position. For multiple year projects, if percent of effort varied from year to year, report in the % of Effort column the effort by year 1, 2, 3, etc. of the project (x% Yr 1; z% Yr 2-3).

Last Name	Position Title	% of Effort on Project	Cost
Schmotzer	Clinical Research Coordinator	5.8% Yr 3	\$ 18,506
Vecchio	Clinical Research Coordinator	16.7% Yr 3	\$ 11,776
Cameron	Clinical Research Coordinator	50% Yr 1; 100% Yr 2; 25% Yr 3	\$151,002
Calisti	Senior Regulatory Specialist	20% Yr 1; 100% Yr 2; 41.7% Yr 3	\$ 97,949
Long	Clinical Research Coordinator	10% Yr 2; 8.3% Yr 3	\$ 14,557

9(C) Provide the names of **all** persons who worked on this research project, but who *were not* supported with health research funds. Include position titles (Research Assistant, Administrative Assistant, etc.) and percent of effort on project. For multiple year projects, if percent of effort varied from year to year, report in the % of Effort column the effort by year 1, 2, 3, etc. of the project (x% Yr 1; z% Yr 2-3).

Last Name	Position Title	% of Effort on Project
Chatta	Principal Investigator	10%
Hall	Data Manager	10%
Finn	Co-Investigator	5%
Patel	Medical Resident	10%
Appleman	Investigator	10%

9(D) Provide a list of **all** scientific equipment purchased as part of this research grant, a short description of the value (benefit) derived by the institution from this equipment, and the cost of the equipment.

Type of Scientific Equipment	Value Derived	Cost
None		

**10. Co-funding of Research Project during Health Research Grant Award Period.** Did this research project receive funding from any other source during the project period when it was supported by the health research grant?

Yes   X          No  

If yes, please indicate the source and amount of other funds:

Funds from the University of Pittsburgh Cancer Institute Cancer Immunology Program (Finn, PI) provided mucin-1 (MUC-1) and support for laboratory analyses - \$25,000

**11. Leveraging of Additional Funds**

11(A) As a result of the health research funds provided for this research project, were you able to apply for and/or obtain funding from other sources to continue or expand the

research?

Yes \_\_\_\_\_ No X \_\_\_\_\_

If yes, please list the applications submitted (column A), the funding agency (National Institutes of Health—NIH, or other source in column B), the month and year when the application was submitted (column C), and the amount of funds requested (column D). If you have received a notice that the grant will be funded, please indicate the amount of funds to be awarded (column E). If the grant was not funded, insert “not funded” in column E.

Do not include funding from your own institution or from CURE (tobacco settlement funds). Do not include grants submitted prior to the start date of the grant as shown in Question 2. If you list grants submitted within 1-6 months of the start date of this grant, add a statement below the table indicating how the data/results from this project were used to secure that grant.

A. Title of research project on grant application	B. Funding agency (check those that apply)	C. Month and Year Submitted	D. Amount of funds requested:	E. Amount of funds to be awarded:
None	<input type="checkbox"/> NIH <input type="checkbox"/> Other federal (specify: _____) <input type="checkbox"/> Nonfederal source (specify: _)		\$	\$

11(B) Are you planning to apply for additional funding in the future to continue or expand the research?

Yes X \_\_\_\_\_ No \_\_\_\_\_

If yes, please describe your plans:

We plan to submit an R21 for a MUC-1-based clinical trial in prostate cancer.

**12. Future of Research Project.** What are the future plans for this research project?

Phase II study of the MUC-1 vaccine will take place contingent upon funding. Additional subjects are going to be enrolled in the DC (dendritic cell) vaccine following IRB approval of a protocol amendment (expected February, 2013).

**13. New Investigator Training and Development.** Did students participate in project supported internships or graduate or post-graduate training for at least one semester or one summer?

Yes  No

If yes, how many students? Please specify in the tables below:

	Undergraduate	Masters	Pre-doc	Post-doc
Male				2
Female				
Unknown				
<b>Total</b>				<b>2</b>

	Undergraduate	Masters	Pre-doc	Post-doc
Hispanic				
Non-Hispanic				2
Unknown				
<b>Total</b>				<b>2</b>

	Undergraduate	Masters	Pre-doc	Post-doc
White				
Black				
Asian				2
Other				
Unknown				
<b>Total</b>				<b>2</b>

**14. Recruitment of Out-of-State Researchers.** Did you bring researchers into Pennsylvania to carry out this research project?

Yes  No

If yes, please list the name and degree of each researcher and his/her previous affiliation:

**15. Impact on Research Capacity and Quality.** Did the health research project enhance the quality and/or capacity of research at your institution?

Yes  No

If yes, describe how improvements in infrastructure, the addition of new investigators, and other resources have led to more and better research.

The MUC-1 and alpha-1 DC projects fostered interdisciplinary collaboration, improved cancer immunotherapy infrastructure, and encouraged postdoctoral students to participate in cutting-edge research.

**16. Collaboration, business and community involvement.**

16(A) Did the health research funds lead to collaboration with research partners outside of your institution (e.g., entire university, entire hospital system)?

Yes   X              No           

If yes, please describe the collaborations:

We are now active participating members of the Cancer Immunotherapy Network.

16(B) Did the research project result in commercial development of any research products?

Yes                       No   X  

If yes, please describe commercial development activities that resulted from the research project:

16(C) Did the research lead to new involvement with the community?

Yes                       No   X  

If yes, please describe involvement with community groups that resulted from the research project:

**17. Progress in Achieving Research Goals, Objectives and Aims.**

List the project goals, objectives and specific aims (as contained in the grant application’s strategic plan). Summarize the progress made in achieving these goals, objectives and aims for the entire grant award period. Indicate whether or not each goal/objective/aim was achieved; if something was not achieved, note the reasons why. Describe the methods used. If changes were made to the research goals/objectives/aims, methods, design or timeline since the original grant application was submitted, please describe the changes. Provide detailed results of the project. Include evidence of the data that was generated and analyzed, and provide tables, graphs, and figures of the data.

This response should be a DETAILED report of the methods and findings. It is not sufficient to state that the work was completed. Insufficient information may result in an unfavorable performance review, which may jeopardize future funding. If research findings are pending publication you must still include enough detail for the expert peer reviewers to evaluate the progress during the course of the project.

Health research grants funded under the Tobacco Settlement Act will be evaluated via a performance review by an expert panel of researchers and clinicians who will assess project

work using this Final Progress Report, all project Annual Reports and the project's strategic plan. After the final performance review of each project is complete, approximately 12-16 months after the end of the grant, this Final Progress Report, as well as the Final Performance Review Report containing the comments of the expert review panel, and the grantee's written response to the Final Performance Review Report, will be posted on the CURE Web site.

**There is no limit to the length of your response. Responses must be single-spaced below, no smaller than 12-point type. If you cut and paste text from a publication, be sure symbols print properly, e.g., the Greek symbol for alpha ( $\alpha$ ) and beta ( $\beta$ ) should not print as boxes ( $\square$ ). DO NOT DELETE THESE INSTRUCTIONS.**

### **MUC-1 and poly-ICLC trial**

This clinical study is expected to result in the development of a safe and effective vaccine treatment regimen for men with advanced prostate cancer. Standard treatment for advanced prostate cancer (androgen ablation and chemotherapy) is limited, primarily palliative, and associated with significant side effects. Prostate-specific vaccine therapy, if effective, offers the prospect of prolonging survival with minimal side effects.

Results from the Phase I portion of this trial were presented at the 2011 American Society of Clinical Oncology (ASCO) meeting in Chicago, and are summarized below.

A single-arm study was conducted to evaluate the *in vivo* efficacy of polyinosinic- polycytidylic acid stabilized with polylysine and carboxymethylcellulose (poly-ICLC) at a dose of 25 $\mu$ g/kg. Eligible subjects were men with advanced prostate cancer and evidence of systemic immunosuppression (defined as less than 30% of peripheral T-cells expressing interferon gamma, IFN- $\gamma$ ).

Fourteen subjects were recruited, with ages ranging from 51 to 80 (median 72). Thirteen subjects enrolled had castrate-resistant disease, and 12 subjects had evidence of metastatic disease. On weeks 1 and 2 of the study, subjects were pretreated with intramuscular injections of poly-ICLC (25 $\mu$ g/kg), 3 days per week. On weeks 3, 5, and 7, subjects were treated with subcutaneous injections of MUC-1 vaccine (100 $\mu$ g). A dose of tetanus toxoid was administered via intramuscular injection on week 3. Granulocyte macrophage colony stimulating factor (GM-CSF) (100 $\mu$ g) was administered on days 2-4 of the weeks of MUC-1 injection. Patients continued to receive poly-ICLC twice weekly while they remained in the study (**Figure 1**).

Cytokine levels were measured by Luminex assay prior to pretreatment and again at week 3 and by ELISPOT prior to pretreatment and again at week 5. When compared by Luminex assay, 9 of 14 patients demonstrated increased IFN- $\gamma$  production; these increases ranged from 15% to 76%. Twelve of 14 patients showed an increase in tumor necrosis factor (TNF)- $\alpha$  production; these increases ranged from 15% to 137%. All patients who showed an increase in IFN- $\gamma$  also showed increases in TNF- $\alpha$  (**Figure 2**).

Evaluation of T-cell subsets by ELISPOT showed 2 subjects who had increased expression of IFN- $\gamma$  in CD4<sup>+</sup> T-cells; 5 subjects demonstrated increased expression of IFN- $\gamma$  in CD8<sup>+</sup> T-cells.

Upregulation of TNF- $\alpha$  expression was observed in both CD4<sup>+</sup> and CD8<sup>+</sup> T-cells in 8 of 14 patients (**Figure 3**).

The phenotype of patient dendritic cells (DCs) was evaluated by flow cytometry at baseline and at weeks 3 and 9. Upregulation of CD80, CD86 on DCs was only seen in those subjects with low levels of expression at baseline.

Anti-MUC-1 antibody levels were measured at baseline by ELISA and followed at weeks 3, 5, 7, and 9. Four subjects achieved at least a 25% percent increase in both anti-MUC-1 IgM and IgG levels between weeks 3 and 9 (**Figures 4 and 5**). Of these, 3 subjects had demonstrated increases in both TNF- $\alpha$  and IFN- $\gamma$  production, when measured by Luminex assay, after poly-ICLC pretreatment.

Serum tetanus antitoxin levels were measured at week 3 and week 9. Only one subject showed low anti-tetanus antibody titers post-immunization, consistent with anergy. This subject had no upregulation of either cytokine production or anti-MUC-1 antibody titers.

Disease progression was defined according to the outcome measures recommended by the Prostate Cancer Clinical Trials Working Group 2 (PCWG2). Prostate specific antigen (PSA) values were measured serially while subjects remained on study protocol (**Figure 6**). Imaging studies were performed as clinically appropriate. Two subjects remained without evidence of disease progression for over 20 weeks. Both of these subjects had increased levels of IFN- $\gamma$  and TNF- $\alpha$  after pretreatment with poly-ICLC. Five subjects had evidence of disease progression on either bone scan or computed tomography (CT) scan. One subject was removed from the protocol after hospitalization with acute kidney injury, though this was thought to be unrelated to the study interventions.

In conclusion, poly-ICLC at a dose of 25 $\mu$ g/kg reversed systemic immunosuppression in 9 of 14 patients with advanced prostate cancer, as demonstrated by increased levels of IFN- $\gamma$  and TNF- $\alpha$ . Coupled with the encouraging immune and clinical responses observed in some patients, further investigation of poly-ICLC as a vaccine adjuvant in advanced prostate cancer is warranted.

Figure 1. *Study Schema*

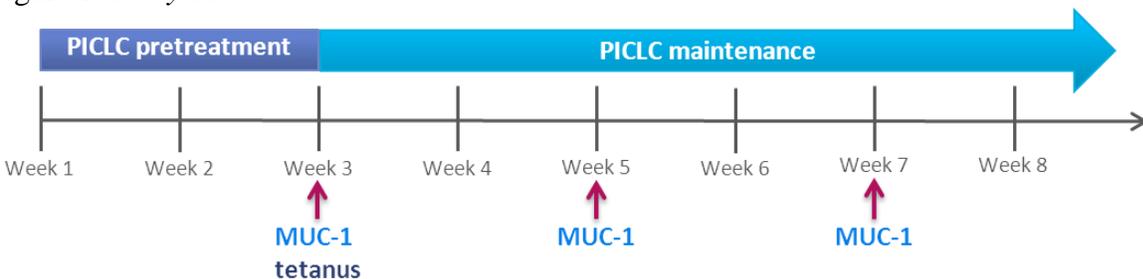


Figure 2. Cytokine expression

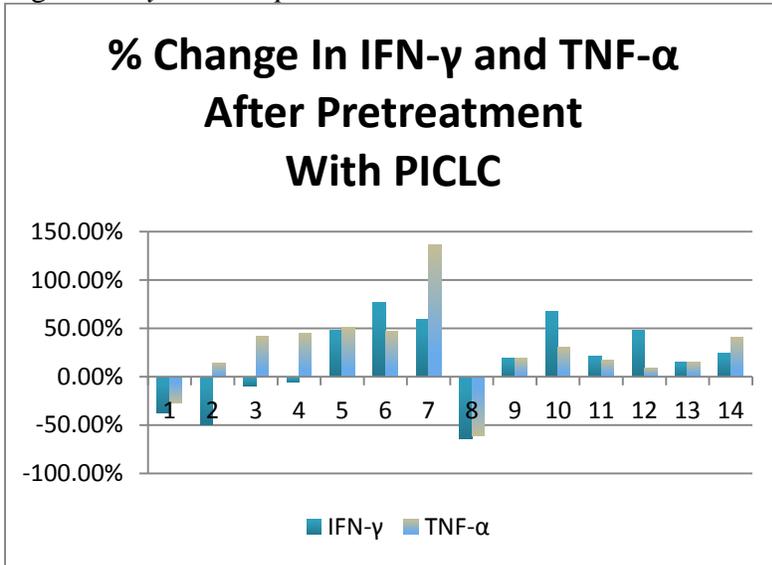


Figure 3. T cell subsets

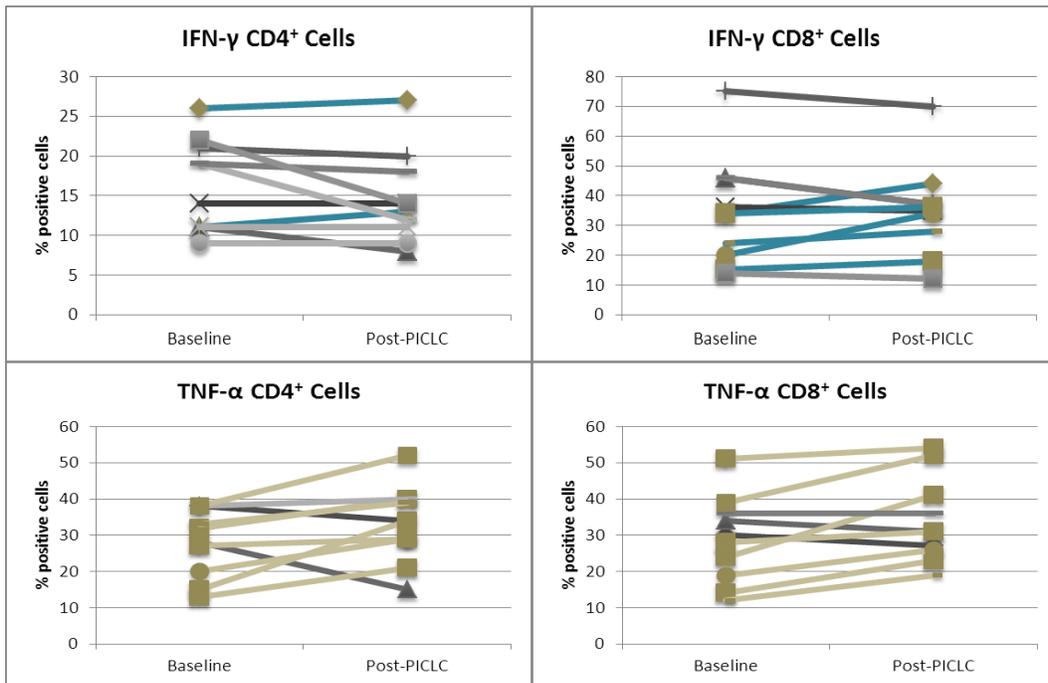


Figure 4. *Anti-MUC- IgM titres*

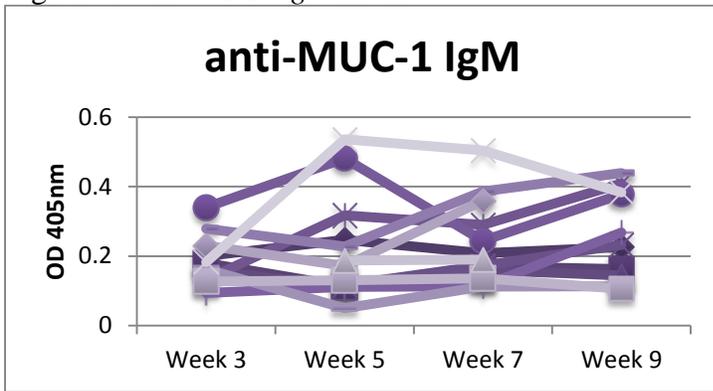


Figure 5. *Anti-MUC1 IgG titres*

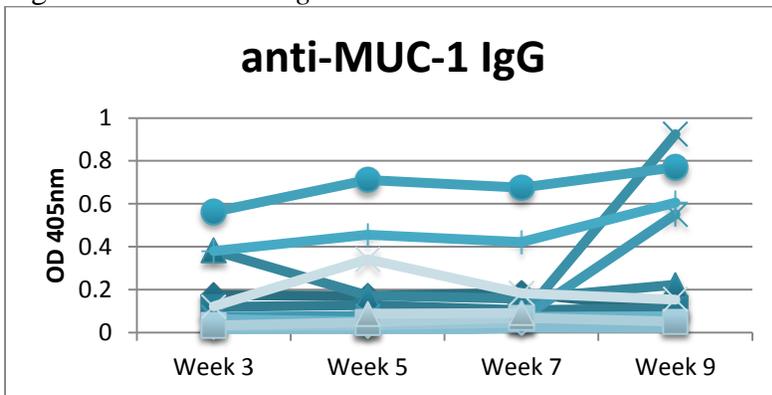
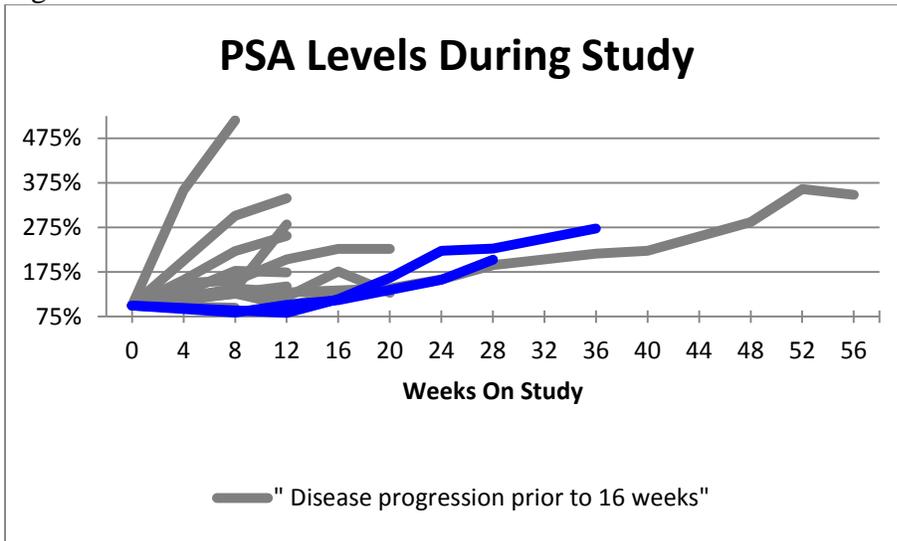


Figure 6. *Serum PSA levels*



**Evaluation of  $\alpha$ DC-1 vaccine in combination with androgen ablation**

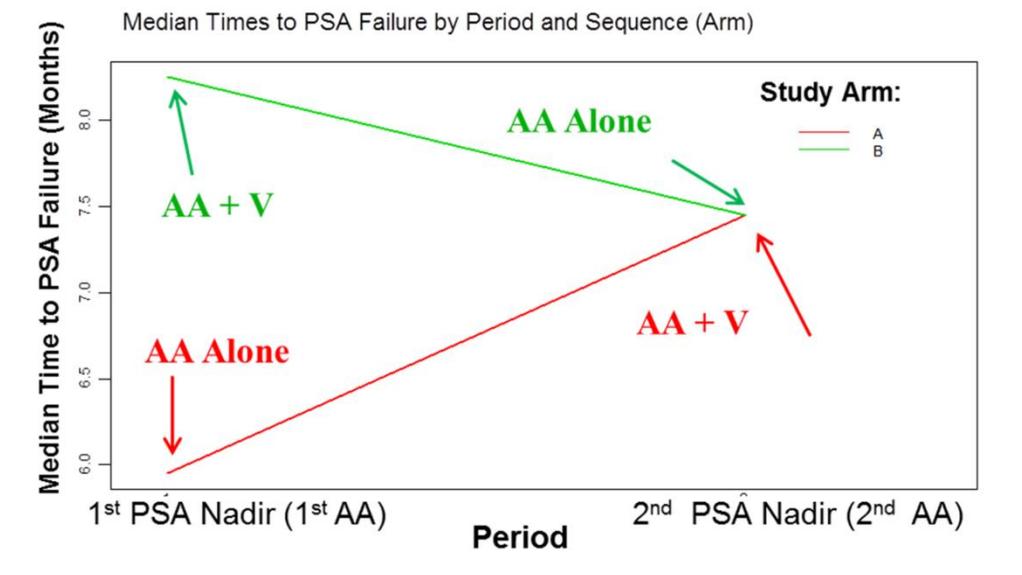
In this study, we aim to develop a novel vaccine to effectively treat men with prostate cancer that

has recurred following failed local therapy (surgery and/or radiation) and that is detectable only by a rise in serum PSA levels (PSA-only disease). This patient population is ideal for an immunologic intervention given that: (1) this group is the largest subpopulation of men with prostate cancer in the U.S., (2) there is no standard treatment for this subgroup, and (3) this subgroup has minimal systemic disease burden. We will carefully monitor immunological responses to vaccination at different time points, but primary indications of vaccine efficacy will be stabilized patient PSA levels and prolonged time between treatment and disease relapse (PSA progression).

To date, 9 of 16 patients have been accrued to this study. We anticipate completing accrual by 12/31/13. We are also applying for additional funding from the U.S. Department of Defense to support completion of the trial and correlative studies. Meanwhile, the preclinical data used as the basis for this clinical trial were summarized in an article that was published in *Prostate*: Wieckowski E, Chatta GS, Mailliard RM, Gooding W, Palucka K, Banchereau J, Kalinski P. Type-1 polarized dendritic cells loaded with apoptotic prostate cancer cells are potent inducers of CD8(+) T cells against prostate cancer cells and defined prostate cancer-specific epitopes. *Prostate*. Aug, 2010. PMID: 20717900.

The results shown below are efficacy data from the Phase I study. Six subjects with biochemically recurrent, hormone-naïve prostate cancer were randomized to androgen ablation (AA) via 3-month depot luteinizing hormone-releasing hormone (LHRH) agonist alone followed by AA combined with vaccination (Arm A: AA+V → AA; RED) or AA+V followed by AA alone (AA+V → AA; Green). Autologous alpha-1 DCs loaded with apoptotic LNCap cells (MHC-low variant to induce allo-immunization) were used for immunization (4 courses of 5 million DC, intradermally, every 4 weeks). The time to PSA progression was evaluated after Period 1 and after Period 2 for each subject. The data demonstrate that the median time to PSA progression was longer after AA+V for both both Arm A and Arm B (**Figure 7**).

Figure 7. Preliminary Efficacy Data from the Phase I study (UPCI 06-070; BB-IND 12,061)



**18. Extent of Clinical Activities Initiated and Completed.** Items 18(A) and 18(B) should be completed for all research projects. If the project was restricted to secondary analysis of clinical data or data analysis of clinical research, then responses to 18(A) and 18(B) should be “No.”

18(A) Did you initiate a study that involved the testing of treatment, prevention or diagnostic procedures on human subjects?

Yes  
 No

18(B) Did you complete a study that involved the testing of treatment, prevention or diagnostic procedures on human subjects?

Yes  
 No

**If “Yes” to either 18(A) or 18(B), items 18(C) – (F) must also be completed.** (Do NOT complete 18(C-F) if 18(A) and 18(B) are both “No.”)

18(C) How many hospital and health care professionals were involved in the research project?

>15 Number of hospital and health care professionals involved in the research project

18(D) How many subjects were included in the study compared to targeted goals?

14 Number of subjects originally targeted to be included in the study  
14 Number of subjects enrolled in the study

18(E) How many subjects were enrolled in the study by gender, ethnicity and race?

Gender:

14 Males  
 Females  
 Unknown

Ethnicity:

1 Latinos or Hispanics  
13 Not Latinos or Hispanics  
 Unknown

Race:

American Indian or Alaska Native  
1 Asian  
1 Blacks or African American  
 Native Hawaiian or Other Pacific Islander

11 White  
1 Other, specify: Hispanic  
           Unknown

18(F) Where was the research study conducted? (List the county where the research study was conducted. If the treatment, prevention and diagnostic tests were offered in more than one county, list all of the counties where the research study was conducted.)

University of Pittsburgh Cancer Institute, Hillman Cancer Center, Allegheny County

**19. Human Embryonic Stem Cell Research.** Item 19(A) should be completed for all research projects. If the research project involved human embryonic stem cells, items 19(B) and 19(C) must also be completed.

19(A) Did this project involve, in any capacity, human embryonic stem cells?

           Yes  
  X   No

19(B) Were these stem cell lines NIH-approved lines that were derived outside of Pennsylvania?

           Yes  
           No

19(C) Please describe how this project involved human embryonic stem cells:

**20. Articles Submitted to Peer-Reviewed Publications.**

20(A) Identify all publications that resulted from the research performed during the funding period and that have been submitted to peer-reviewed publications. Do not list journal abstracts or presentations at professional meetings. **Include only those publications that acknowledge the Pennsylvania Department of Health as a funding source** (as required in the grant agreement). List the title of the journal article, the authors, the name of the peer-reviewed publication, the month and year when it was submitted, and the status of publication (submitted for publication, accepted for publication or published.). Submit an electronic copy of each publication, listed in the table, in a PDF version 5.0.5 format, 1,200 dpi. Filenames for each publication should include the number of the research project, the last name of the PI, the number of the publication and an abbreviated research project title. For example, if you submit two publications for PI Smith for the “Cognition and MRI in Older Adults” research project (Project 1), and two publications for PI Zhang for the “Lung Cancer” research project (Project 3), the filenames should be:

Project 1 – Smith – Publication 1 – Cognition and MRI  
Project 1 – Smith – Publication 2 – Cognition and MRI

Project 3 – Zhang – Publication 1 – Lung Cancer

Project 3 – Zhang – Publication 2 – Lung Cancer

If the publication is not available electronically, provide 5 paper copies of the publication.

**Note:** The grant agreement requires that recipients acknowledge the Pennsylvania Department of Health funding in all publications. Please ensure that all publications listed acknowledge the Department of Health funding. If a publication does not acknowledge the funding from the Commonwealth, do not list the publication.

Title of Journal Article:	Authors:	Name of Peer-reviewed Publication:	Month and Year Submitted:	Publication Status (check appropriate box below):
1. None				<input type="checkbox"/> Submitted <input type="checkbox"/> Accepted <input type="checkbox"/> Published

20(B) Based on this project, are you planning to submit articles to peer-reviewed publications in the future?

Yes   X   No \_\_\_\_\_

If yes, please describe your plans:

We plan to submit the dendritic cell results to a nationally- recognized peer reviewed journal.

**21. Changes in Outcome, Impact and Effectiveness Attributable to the Research Project.**

Describe the outcome, impact, and effectiveness of the research project by summarizing its impact on the incidence of disease, death from disease, stage of disease at time of diagnosis, or other relevant measures of outcome, impact or effectiveness of the research project. If there were no changes, insert “None”; do not use “Not applicable.” Responses must be single-spaced below, and no smaller than 12-point type. **DO NOT DELETE THESE INSTRUCTIONS.** There is no limit to the length of your response.

A new vaccine adjuvant, poly-ICLC, reversed systemic immunosuppression in 9 of 14 patients with advanced prostate cancer.

**22. Major Discoveries, New Drugs, and New Approaches for Prevention Diagnosis and Treatment.**

Describe major discoveries, new drugs, and new approaches for prevention, diagnosis and treatment that are attributable to the completed research project. If there were no major discoveries, drugs or approaches, insert “None”; do not use “Not applicable.” Responses must be single-spaced below, and no smaller than 12-point type. **DO NOT DELETE THESE INSTRUCTIONS.** There is no limit to the length of your response.

The MUC-1 study employed a new vaccine adjuvant for cancer therapy (poly IC-LC) and demonstrated the feasibility and immunologic activity of the MUC-1 vaccine in men with recurrent prostate cancer.

The dendritic cell vaccine project demonstrated preliminary clinical activity of a vaccine comprised of autologous alpha-1 dendritic cells loaded with apoptotic allogeneic prostate cancer cells.

### 23. Inventions, Patents and Commercial Development Opportunities.

23(A) Were any inventions, which may be patentable or otherwise protectable under Title 35 of the United States Code, conceived or first actually reduced to practice in the performance of work under this health research grant? Yes \_\_\_\_\_ No  X

If “Yes” to 23(A), complete items a – g below for each invention. (Do NOT complete items a - g if 23(A) is “No.”)

- a. Title of Invention:
- b. Name of Inventor(s):
- c. Technical Description of Invention (describe nature, purpose, operation and physical, chemical, biological or electrical characteristics of the invention):
- d. Was a patent filed for the invention conceived or first actually reduced to practice in the performance of work under this health research grant?  
Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, indicate date patent was filed:

- e. Was a patent issued for the invention conceived or first actually reduced to practice in the performance of work under this health research grant?  
Yes \_\_\_\_\_ No \_\_\_\_\_  
If yes, indicate number of patent, title and date issued:  
Patent number:  
Title of patent:  
Date issued:
- f. Were any licenses granted for the patent obtained as a result of work performed under this health research grant? Yes \_\_\_\_\_ No \_\_\_\_\_  
  
If yes, how many licenses were granted? \_\_\_\_\_
- g. Were any commercial development activities taken to develop the invention into a commercial product or service for manufacture or sale? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, describe the commercial development activities:

23(B) Based on the results of this project, are you planning to file for any licenses or patents, or undertake any commercial development opportunities in the future?

Yes \_\_\_\_\_ No X \_\_\_\_\_

If yes, please describe your plans:

**24. Key Investigator Qualifications.** Briefly describe the education, research interests and experience and professional commitments of the Principal Investigator and all other key investigators. In place of narrative you may insert the NIH biosketch form here; however, please limit each biosketch to 1-2 pages.

---

## BIOGRAPHICAL SKETCH

---

NAME <b>Gurkamal S. Chatta</b>	POSITION TITLE Associate Professor
eRA COMMONS USER NAME	

<i>EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education,</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University College of Medical Sciences, Delhi University, Delhi, India	MBBS	1981	Medicine

### Positions and Honors

#### Professional Experience

- 4/92-12/96 Instructor, Division of Gerontology and Geriatric Medicine, Department of Medicine, University of Washington School of Medicine, Seattle, WA
- 1/97- 6/00 Asst Professor, Divisions of Aging and Oncology, Department of Medicine, University of Arkansas Medical School, Little Rock, AR
- 7/00- 8/01 Assoc Professor, Divisions of Aging and Oncology, Department of Medicine, University of Arkansas Medical School, Little Rock, AR
- 9/01- Visiting Assoc Professor, Division of Hematology-Oncology, Department of Medicine, University of Pittsburgh Medical Center, Pittsburgh, PA
- 7/02- Visiting Assoc Professor, Division of Geriatrics, Department of Medicine, University of Pittsburgh Medical Center, Pittsburgh, PA

#### Board Certification

- 1982 ECFMG (USA), Certification #341-02202
- 1988 Diplomate of the American Board of Internal Medicine
- 1990 American Board of Internal Medicine-Certificate of Added Qualifications in Geriatric Medicine
- 1998 Medical Oncology

#### Honors

- 1991-94 Brookdale National Foundation-Fellowship (T cell activation and aging)
- 1991-95 Geriatric Academic Program-Research Award (T cells and aging)
- 1994-95 American Cancer Society-Research Award (T cell therapy for prostate cancer)
- 1995-96 American Cancer Society-Fellowship
- 1995-96 Sandoz Research Foundation-Research Award (T cell therapy for prostate cancer)
- 1997-03 National Cancer Institute-R29, "Immunotherapy of prostate cancer" (1997-2003)

#### Selected peer-reviewed publications

1. Wieckowski E, Chatta GS, Mailliard RM, Gooding W, Palucka K, Banchereau J, Kalinski P. Type-1 polarized dendritic cells loaded with apoptotic prostate cancer cells are potent inducers of CD8(+) T cells against prostate cancer cells and defined prostate cancer-specific epitopes. *Prostate*. 2011 Feb 1;71(2):125-33. PubMed PMID: 20717900; PubMed Central PMCID: PMC2989344.

2. Gillison TL, Chatta GS. Cancer chemotherapy in the elderly patient. *Oncology* (Williston Park). 2010 Jan;24(1):76-85. Review. PubMed PMID: 20187325.
3. Figg WD, Hussain MH, Gulley JL, Arlen PM, Aragon-Ching JB, Petrylak DP, Higano CS, Steinberg SM, Chatta GS, Parnes H, Wright JJ, Sartor O, Dahut WL. A double-blind randomized crossover study of oral thalidomide versus placebo for androgen dependent prostate cancer treated with intermittent androgen ablation. *J Urol*. 2009 Mar;181(3):1104-13; discussion 1113. PubMed PMID: 19167733; PubMed Central PMCID: PMC2838198.
4. Gulley JL, Aragon-Ching JB, Steinberg SM, Hussain MH, Sartor O, Higano CS, Petrylak DP, Chatta GS, Arlen PM, Figg WD, Dahut WL. Kinetics of serum androgen normalization and factors associated with testosterone reserve after limited androgen deprivation therapy for nonmetastatic prostate cancer. *J Urol*. 2008 Oct;180(4):1432-7; discussion 1437. PubMed PMID: 18710748; PubMed Central PMCID: PMC2564996.
5. Ramalingam SS, Egorin MJ, Ramanathan RK, Remick SC, Sikorski RP, Lagattuta TF, Chatta GS, Friedland DM, Stoller RG, Potter DM, Ivy SP, Belani CP. A phase I study of 17-allylamino-17-demethoxygeldanamycin combined with paclitaxel in patients with advanced solid malignancies. *Clin Cancer Res*. 2008 Jun 1;14(11):3456-61. PubMed PMID: 18519777.
6. Beer TM, Ryan CW, Venner PM, Petrylak DP, Chatta GS, Ruether JD, Chi KN, Young J, Henner WD; ASCENT(AIPC Study of Calcitriol ENhancing Taxotere) Investigators. Intermittent chemotherapy in patients with metastatic androgen-independent prostate cancer: results from ASCENT, a double-blinded, randomized comparison of high-dose calcitriol plus docetaxel with placebo plus docetaxel. *Cancer*. 2008 Jan 15;112(2):326-30. PubMed PMID: 17960793.
7. Aalamian-Matheis M, Chatta GS, Shurin MR, Huland E, Huland H, Shurin GV. Inhibition of dendritic cell generation and function by serum from prostate cancer patients: correlation with serum-free PSA. *Adv Exp Med Biol*. 2007;601:173-82. PubMed PMID: 17713004.
8. Shurin GV, Yurkovetsky ZR, Chatta GS, Tourkova IL, Shurin MR, Lokshin AE. Dynamic alteration of soluble serum biomarkers in healthy aging. *Cytokine*. 2007 Aug;39(2):123-9. Epub 2007 Aug 8. PubMed PMID: 17689975.
9. Hussain MH, MacVicar GR, Petrylak DP, Dunn RL, Vaishampayan U, Lara PN Jr, Chatta GS, Nanus DM, Glode LM, Trump DL, Chen H, Smith DC; National Cancer Institute. Trastuzumab, paclitaxel, carboplatin, and gemcitabine in advanced human epidermal growth factor receptor-2/neu-positive urothelial carcinoma: results of a multicenter phase II National Cancer Institute trial. *J Clin Oncol*. 2007 Jun 1;25(16):2218-24. Erratum in: *J Clin Oncol*. 2008 Jul 1;26(19): 3295. PubMed PMID: 17538166.
10. Shurin MR, Shurin GV, Chatta GS. Aging and the dendritic cell system: implications for cancer. *Crit Rev Oncol Hematol*. 2007 Nov;64(2):90-105. Epub 2007 Apr 18. Review. PubMed PMID: 17446082; PubMed Central PMCID: PMC2084365.
11. Kibel AS, Rosenbaum E, Kattan MW, Picus J, Dreicer R, Klein EA, Chatta GS, Nelson JB, DiPaola RS, Roth BJ, Cookson MS, Wilding G, Jarrard DF, Beer TM, Ryan CW, Petrylak DP, Benson MC, Partin AW, Garrett-Mayer E, Eisenberger MA. Adjuvant weekly docetaxel for patients with high risk prostate cancer after radical prostatectomy: a multi-institutional pilot study. *J Urol*. 2007 May;177(5):1777-81. PubMed PMID: 17437819.