

18 June 2011

MS. MONABEL MAY APAO  
Department of Biology  
MSU-Iligan Institute of Technology  
Andres Bonifacio Ave., Iligan City

Dear Ms. Apao:

This has reference to your M.S. scholarship under the DOST-Accelerated Science and Technology Human Resource Development Program. We would like to remind you that the extension period granted to you ended in the second semester of SY 2011-2012. However, as of this date, we have not received any update from you. May we therefore request for an update on the status of your studies at the soonest time possible.

If you have already completed your M.S. program, please provide us a copy of the following documents:

- bound and CD copies of your thesis manuscript
- transcript of records
- diploma

We believe that as a scholar, you are fully aware of the repayment provision of the contract you signed with us in case of non-completion of your M.S. degree.

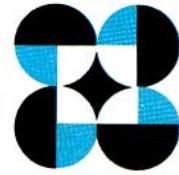
Please be guided accordingly.

Very truly yours,

JONATHAN G. MUÑOZ  
Supervising Science Research Specialist



REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
**PHILIPPINE COUNCIL FOR ADVANCED SCIENCE AND TECHNOLOGY**  
**RESEARCH AND DEVELOPMENT**



Please be informed also that PCASTRD is in the process of organizing its scholarship grantees who have successfully completed their degrees. The purpose of the move is to be able to track the grantees for ease in networking and in tapping their expertise for the implementation of the various programs of PCASTRD. We have divided the group into regions/area. Tentative schedule for NCR is on November 2007 to be held in Metro Manila. We will inform you as soon as we have finalized the schedule.

We would also like to inform you that the Kapisanang Kimika ng Pilipinas will be publishing the Special Edition of KIMIKA journal which will feature research papers of PCASTRD scholars. For more information, you may inquire with Dr. Erwin Enriquez of the Chemistry Department-Ateneo De Manila University at email: [epenriquez@ateneo.edu](mailto:epenriquez@ateneo.edu) or telephone number: 426-60-01 local 5620.

*frt. copy*

18 November 2011

MS. MONABEL MAY APAO  
Department of Biology  
MSU-Iligan Institute of Technology  
Andres Bonifacio Ave., Iligan City

Dear Ms. Apao:

This has reference to your letter dated 14 November 2011 requesting for an extension of your scholarship under the DOST-ASTHRDP and providing us with a copy of your enrollment form this second semester 2011-2012 and progress report.

We would like to inform you that we are allowing you to go on extension for the second semester of SY 2011-2012 for you to finish the M.S. degree. However, the said extension period will be without the usual financial privileges (e.g. stipend, tuition & other fees, book allowance, etc.).

Also, we have noted that as per your schedule of activities, you are expected to finish at the end of second semester. In this regard, you will need to submit the following documents upon completion of the program:

- (1) hard bound and CD copies of your manuscript
- (2) transcript of records
- (3) diploma

We hope that you will work diligently on your thesis towards the successful completion of the M.S. degree.

Please be guided accordingly.

Very truly yours,

  
ERMIE M. BACARRA  
Chief, HRIDD

Philippine Council for Industry, Energy and Emerging  
Technology Research and Development



0-11-1121-17

Released on 11.21.2011 / 01:15:07 PM

Human Resource and Institution  
Development Division  
(HRIDD)

Action Slip

Subject: Request for extension of scholarship

From: Monabel May N. Apao

Date of Letter: November 14, 2011

Date/Time In/Out

AM

11/17/11

PM

Received

forwarded to EMB 4:50 pm

11/18

leaving desk inc mutu  
forward to Cals

11/18

days calendar ammended  
file

11/18

signed.

**NAME : MONABEL MAY APAO**

**DATE STARTED : 2ND SEM OF SY 2008-2009**

**EXPECTED DATE OF COMPLETION : 1ST SEM OF SY 2010-2011**

SCHOOL YEAR	1 <sup>ST</sup> SEM	2 <sup>ND</sup> SEM
SY 2008-2009		ENROLLED
SY 2009-2010	ENROLLED	ENROLLED
SY 2010-2011	ENROLLED	ON EXTENSION
SY 2011-2012	AWOL	REQUESTING FOR EXTENSION

18 November 2011

MS. MONABEL MAY APAO  
Department of Biology  
MSU-Iligan Institute of Technology  
Andres Bonifacio Ave., Iligan City

Dear Ms. Apao:

This has reference to your letter dated 14 November 2011 requesting for an extension of your scholarship under the DOST-ASTHRDP and providing us with a copy of your enrollment form this second semester 2011-2012 and progress report.

We would like to inform you that we are allowing you to go on extension for the second semester of SY 2011-2012 for you to finish the M.S. degree. However, the said extension period will be without the usual financial privileges (e.g. stipend, tuition & other fees, book allowance, etc.).

Also, we have noted that as per your schedule of activities, you are expected to finish at the end of second semester. In this regard, you need to submit the following documents upon completion of the program:

- (1) hard bound and CD copies of your manuscript
- (2) transcript of records
- (3) diploma

We hope that you will work diligently on your thesis towards the successful completion of the M.S. degree.

Please be guided accordingly.

Very truly yours,

ERMIE M. BACARRA  
Chief, HRIDD



Office of the Executive Director (OED)  
ROUTING SLIP

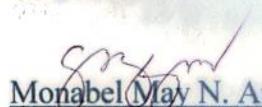
To: ENGR. ERNIE

	Remarks
<input checked="" type="checkbox"/> Appropriate action	<i>please. thanks!</i>
<input type="checkbox"/> Handle	<i>ok</i>
<input type="checkbox"/> Comment	
<input type="checkbox"/> Prepare draft	
<input type="checkbox"/> Reply	
<input type="checkbox"/> Discuss with me	
<input type="checkbox"/> Note & file	
<input type="checkbox"/> Note & return	
<input type="checkbox"/> Information	
<input type="checkbox"/> Give Status	

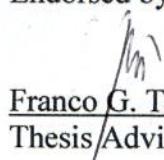
Date: 11/17

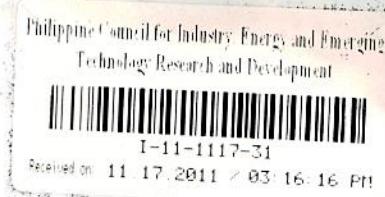
period of study to be able to complete my graduate program leading to a MS degree. This is due to the unfortunate delay of response and service of DNA sequencing and DNA analysis of MACROGEN, Korea. Financial support for the entire period of extension will be arranged as agreed in the Graduate Scholarship Agreement of DOST Accelerated Science and Technology, Human Resource Development Program. The expected graduating semester is 2<sup>nd</sup> of School Year 2011-2012.

Respectfully yours,

  
Monabel May N. Apao  
Grantee

Endorsed by:

  
Franco G. Teves, Ph.D.  
Thesis Adviser



Monabel May N. Apao  
MS Bio 3

## Research Progress Report and Work Plan for the semester of 2018-2019

### TITLE: CLONING AND CHARACTERIZATION OF SWR W GENE INVOLVED IN SERRAWETIN BIOSYNTHESIS IN *Serratia marcescens*

#### 1. INTRODUCTION

##### a. BACKGROUND OF THE STUDY

- i. Species involved in the study
- ii. Related studies
- iii. *swrW* gene

##### b. OBJECTIVES OF THE STUDY

- i. To clone and characterize the *swrW* gene of the bacteria *Serratia marcescens* that involves in the biosynthesis of serrawettin
- ii. To determine the sequence of *swrW* gene in local strains of *S. marcescens*
- iii. To determine the copy number of the *swrW* homolog in the local strains of *S. marcescens* genome
- iv. To characterize the gene sequence through bioinformatics

#### 2. MATERIALS AND METHODS

Local strains of *S. marcescens* was obtained from the National Culture Collection, UPLB and MSU-IIT and maintained in the Department of Biological Sciences, MSU-IIT.

All materials have been gathered, prepared and carried out last semester. DNA manipulations and related techniques were done according to standard methods (Maniatis, et.al., 1989).

**Figure 1** Schematic diagram showing the experimental framework of the study.

Genetic DNA isolation was done using an overnight *S. marcescens* strains culture (grown in LB broth in 1.5 ml eppendorf tubes at 37°C with shaking). The isolated DNA was stored in the refrigerator. To check the concentration, 2.0 µl was processed in agarose gel electrophoresis. Genomic DNA Amplification by PCR was amplified by following the manufacturer's (QIAGEN PCR Kit) instructions. To amplify the *swrW* fragment from *S. marcescens*, a nested manufacturer's (QIAGEN PCR Kit) PCR protocol was followed. PCR primers used for PCR amplification of *swrW* gene which encodes serrawettin W1 synthase SW2-F3 5'-GCG ACA AAA GCA ATG ACA AA and SW2-R3 5'-GTC GGC GTA TTG TTC CAA CT) were the primers complementary to the conserved published *swrW* gene sequences of various *S. marcescens* strains downloaded from GenBank (Williamson et al., 2005). The DNA fragments generated by PCR were separated by means of agarose gel electrophoresis to separate nucleic acids of different molecular mass. The 1.4% agarose gel was stained with methylene blue to visualize how the DNA molecules resolved into bands along the gel and viewed over a fluorescent lamp. The DNA samples are stored in the refrigerator for DNA Sequencing and DNA Analysis.



**Figure 2.** (A) Visible bands showing DNA concentration in the gel over a fluorescent lamp; (B) Agarose gel electrophoresis of PCR products for a serrawettin W F synthetase (*swrW*) from *Serratia marcescens* over a fluorescent lamp.

DNA samples will be sent to MACROGEN, Korea on **November 2011** for sequencing because this method is not available in the Philippines. Sequence analysis will be done on **December 2011** using bioinformatics open software (NCBI and EMBL).

**Table 1.** Schedule of Activities of the research for 2<sup>nd</sup> semester SY 2011-2012

SCHEDULE OF ACTIVITIES		
<b>Second Semester of School Year 2011-2012</b>		
Activity 1	November-December	DNA Sequencing and DNA Analysis
Activity 2	January-February	Interpretation of Results, Manuscript Encoding and Editing
Activity 3	March	Final Thesis Defense

Endorsed by:

Franco G. Teves, Ph.D.  
Thesis Adviser

## DOST Accelerated S&amp;T Human Resource Development Program

## Scholar's Thesis/Dissertation Progress Report

for the  1st  2nd  3<sup>rd</sup>  4<sup>th</sup> Quarter / Year 2011-2012

## THESIS/DISSERTATION TITLE:

CLONING AND CHARACTERIZATION OF SWR11 GENE INVOLVED IN  
SERRAWETTIN BIOSYNTHESIS OF *Serratia marcescens*

GRANTEE:	DEGREE PROGRAM:
MUNABEL MAY N. APAO	MS BIO
DURATION:	2 YEARS
DATE STARTED:	EXPECTED DATE OF COMPLETION:
OCTOBER 2009	MARCH 2012

## OBJECTIVES:

- \* TO CLONE AND CHARACTERIZE THE SWR11 GENE OF THE BACTERIA *Serratia marcescens* THAT INVOLVES IN THE BIOSYNTHESIS OF SERRAWETTIN
- \* TO DETERMINE THE SEQUENCE OF SWR11 GENE IN LOCAL STRAIN
- \* TO DETERMINE THE COPY NUMBER OF THE SWR11 HOMOLOGS OF *S. marcescens* GENOME AND CHARACTERIZE THE GENE SEQUENCE

## SCHEDULE OF ACTIVITIES:

ACTIVITY 1	NOVEMBER - DECEMBER	DNA SEQUENCING & DNA ANALYSIS
ACTIVITY 2	JANUARY - FEBRUARY	INTERPRETATION OF RESULTS, MANUSCRIPT ENCODING
ACTIVITY 3	MARCH	FINAL THESIS DEFENSE

RESULTS AND DISCUSSION:

GENETIC DNA ISOLATION WAS DONE USING AN OVERNIGHT C. P.

THE ISOLATED DNA WAS CHECKED BY ALAROSE GEL ELECTROPHORESIS

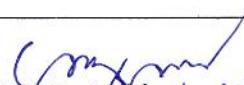
THE GENOMIC DNA WAS AMPLIFIED BY FOLLOWING QIAGEN PCR KIT  
<sup>(FOR THE SWW FRAGMENT)</sup>. THE DNA FRAGMENTS GENERATED BY PCR WERE SEPARATED AGAIN BY AGAROSE GEL ELECTROPHORESIS TO SEPARATE NUCLEIC ACIDS OF DIFFERENT MOLECULAR

MASS (see attached report, FIG. 2). THE DNA SAMPLES ARE STORED AND ITS READY FOR SEQUENCING.  
PROBLEMS ENCOUNTERED/PROPOSED SOLUTIONS:

\* DELAY OF RESPONSE AND SERVICE OF DNA SEQUENCING OF MACROGEN,  
KOREA.

REMARKS:

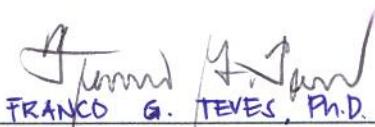
Prepared by:

  
MONADEL N. ADAO

Grantee's name/signature

50% of total work completed

ADVISER'S NAME/SIGNATURE

  
FRANCO G. TEVES, PH.D.

11/14/2011

DATE

*draft*

16 September 2011

MS. MONABEL MAY APAO  
Department of Biology  
MSU-Iligan Institute of Technology  
Andres Bonifacio Ave., Iligan City

Dear Ms. Apao:

This has reference to your MS scholarship under the DOST-ASTHRDP. We would like to remind you that the extension period granted to you ended March 2011. As of this date, we have not received the bound and CD copies of your manuscript, transcript of records and diploma. May we therefore request for an update on the status of your studies on or before September 30, 2011. Otherwise, we will be forced to impose the repayment of the grant.

Thank you and we look forward to hear from you very soon.

Very truly yours,

JONATHAN G. MUÑOZ  
Supervising Science Research Specialist

Cc: Dr. Franco Teves  
Adviser

Philippine Council for Industry, Energy and Emerging  
Technology Research and Development



0-11-0919-30

Released on 09 19 2011 / 01:23:20 PM

## Advanced Technology Research and Development - Department of Science and Technology

Attendance Sheet for the period Oct / 2010

Employee : 07102 Sherly L. Navilgas

Designation : Project Assistant III

Division : Human Resource and Institution Dev't Division

Date	Logs				Deductible Hours			Absences		No. of Hrs	Remarks
	InAM	OutAM	InPM	OutPM	TrdAM	UndAM	TrdPM	UndPM	AbsAM	AbsPM	
10/16/2010 Sat	0746			2510	#Error			#Error			#Error
10/17/2010 Sun	1002			2456	#Error			#Error			#Error
10/18/2010 Mon										8.00	On Official Business AM/PM
10/19/2010 Tue										8.00	On Official Business AM/PM
10/20/2010 Wed										8.00	On Official Business AM/PM
10/21/2010 Thu	0759	1252	1252	1802						8.00	
10/22/2010 Fri	0829			1856						8.00	
10/25/2010 Mon										8.00	Holiday AM/PM
10/26/2010 Tue	0851			1810						8.00	
10/27/2010 Wed	0748			1649						8.00	
10/28/2010 Thu	0738	1212	1212	1702						8.00	
10/29/2010 Fri	0715	1230							3.25	4.75	
Times Tardy :		0			Days on Vacation Leave :						Days on Maternity Leave :
No. of Hours Tardy :		0.00			Days on Sick Leave :						Days on Paternity Leave :
Times Undertime :		0			Days on Special Leave :						Days on CDO :
No. of Hrs Undertime :		0.00			Days on Forced Leave :						Days on Foreign Travel :
Total No. of Hrs Rendered :		92.75			Days Absent :				0.41		

*Sherly L. Navilgas*  
Sherly L. Navilgas  
Project Assistant III

*Ermie M. Bacarra*  
Ermie M. Bacarra  
Chief - HRIDD

*Mildred F. Cabradilla*  
Mildred F. Cabradilla  
Human Resource Management Officer III



Republic of the Philippines  
Department of Science and Technology  
**PHILIPPINE COUNCIL FOR INDUSTRY, ENERGY AND EMERGING TECHNOLOGY  
RESEARCH AND DEVELOPMENT (PCIEERD)**

16 September 2011

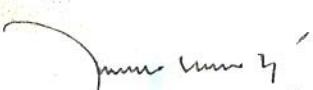
MS. MONABEL MAY APAO  
Department of Biology  
MSU-Iligan Institute of Technology  
Andrés Bonifacio Ave., Iligan City

Dear Ms. Apao:

This has reference to your MS scholarship under the DOST-ASTHRDP. We would like to remind you that the extension period granted to you ended March 2011. As of this date, we have not received the bound and CD copies of your manuscript, transcript of records and diploma. May we therefore request for an update on the status of your studies on or before September 30, 2011. Otherwise, we will be forced to impose the repayment of the grant.

Thank you and we look forward to hear from you very soon.

Very truly yours,

  
JONATHAN G. MUÑOZ  
Supervising Science Research Specialist

Cc: Dr. Franco Teves  
Adviser

12 November 2010

MS. MONABEL MAY APAO  
Department of Biology  
MSU-Iligan Institute of Technology  
Andres Bonifacio Ave., Iligan City

Dear Ms. Apao:

This has reference to your letter dated 5 October 2010 requesting scholarship. We would like to inform you that we are allowing the second semester of SY 2010-2011 for you to be able to do this will be without the usual financial privileges except for support. Please note that you are required to submit a report on progress of your research work.

We would also like to mention that we have noted in your report that one of the problems you have encountered is lack of assistance. Per our records, your proposal was approved and release of your thesis support was on June 7, 2010.

*the delay of the research allowance is a reason for the delay of my research.*

*We hope that you will work diligently on your research.*

12 November 2010

MS. MONABEL MAY APAO  
Department of Biology  
MSU-Iligan Institute of Technology  
Andres Bonifacio Ave., Iligan City

Dear Ms. Apao:

This has reference to your letter dated 5 October 2010 requesting for an extension of your scholarship. We would like to inform you that we are allowing you to go on extension for the second semester of SY 2010-2011 for you to be able to finish the degree. However, this will be without the usual financial privileges except for the balance of your thesis support. Please note that you are required to submit quarterly progress reports on the progress of your research work.

We hope that you will work diligently on your thesis towards the successful completion of the degree.

Very truly yours,

ERMIIE M. BACARRA  
Chief, HRIDD

pls.  
adjust  
font  
size

18 October 201

BEL MAY APAO  
of Biology  
MS in Institute of Technology  
Dionisio Ave., Iligan City

Ms. Apao:

This has reference to your letter dated 5 October 2010 requesting for an extension of your scholarship. We would like to inform you that we will act on your request only upon submission of your plan of activities **endorsed by your adviser** (not just noted).

We hope to receive the said document very soon.

Thank you.

Very truly yours,

JONATHAN G. MUÑOZ  
Supervising Science Research Specialist

DEPARTMENT OF BIOLOGICAL SCIENCES  
COLLEGE OF SCIENCE AND MATHEMATICS  
MSU-ILIGAN INSTITUTE OF TECHNOLOGY

October 5, 2010

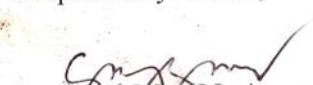
ENGR. ERMIE M. BACARRA  
Chief, Philippine Council for Advanced Science &  
Technology Research & Development-HRIDD  
DOST Main Bldg., Gen. Santos Avenue,  
Bicutan, Taguig, M.M.

Dear Madam:

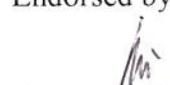
I would like to request for an extension of my program of study for one more semester from now due to the unexpected delays incurred in purchasing laboratory materials for my thesis. I understand however that financial support for the entire period of extension shall be shouldered by the student as agreed in the Graduate Scholarship Agreement of DOST Accelerated Science and Technology, Human Resource Development Program. My schedule of completion shall be on March of 2011.

Attached herewith is my Thesis Progress Report as of 1st semester, SY 2010-2011.

Respectfully Yours,

  
Monabel May N. Apao  
PCASTRD Grantee

Endorsed by:

  
Franco G. Teves, Ph.D.  
Thesis Adviser

**DOST Accelerated S&T Human Resource Development**

**Scholar's Thesis/Dissertation Progress Report**

for the  1st  2nd  3<sup>rd</sup>  4<sup>th</sup> Quarter / Year 2010

THEESIS/DISSERTATION TITLE:

CLONING AND CHARACTERIZATION OF swrW GENE INVOLVED IN  
SERRAWETIN BIOSYNTHESIS OF *Serratia marcescens*

GRANTEE:	DEGREE PROGRAM:
MONABEL MAY N. APAO	MS BIOLOGY

DURATION: 2 YEARS

DATE STARTED:	EXPECTED DATE OF COMPLETION:
2nd semester, SY 2009-2010	MARCH 2011

OBJECTIVES:

- 1) TO CLONE AND CHARACTERIZE THE swrW GENE OF THE BACTERIA *Serratia marcescens* THAT INVOLVES IN THE BIOSYNTHESIS OF SERRAWETIN;
- 2) TO DETERMINE THE SEQUENCE OF swrW GENE IN LOCAL STRAINS;
- 3) TO DETERMINE THE COPY NUMBER OF THE swrW HOMOLOG IN LOCAL STRAINS;
- 4) TO CHARACTERIZE THE GENE SEQUENCE THROUGH BIOINFORMATICS

SCHEDULE OF ACTIVITIES:

ACTIVITY	TIME
1) BACTERIAL CULTURE	- OCTOBER
2) GENOMIC DNA ISOLATION	- NOVEMBER
3) GENE CLONING	- DECEMBER
4) DNA SEQUENCING AND DNA ANALYSIS	- JANUARY-FEBRUARY
5) MANUSCRIPT ENDING, EDITING & FINAL THESIS DEFENCE	- MARCH

RESULTS AND DISCUSSION:

N/A

PROBLEMS ENCOUNTERED/PROPOSED SOLUTIONS:

- 1) UNEXPECTED DELAY OF FINANCIAL ASSISTANCE
- 2) DELAY IN PURCHASING THE FOLLOWING THESIS MATERIALS:

\* PRIMER FOR DNA SYNTHESIS FOR PCR

REMARKS:

PURCHASING THESIS MATERIALS WAS TIME CONSUMING.

Prepared by:

MONAED C. N. APAO  
Grantee's name/signature

This portion is to be filled up by adviser and returned to PCAS i RD in  
the scholar's report:

PERCENTAGE OF TOTAL WORK COMPLETED:

Thirty percent of the total work had been completed

COMMENTS:

Biomarker produced by peripheral macrophages  
that may help it to colonize and cause infection  
in hosts. It may also have an important role in  
biocompatibility, where the importance of this study  
is greatest & found availability, the structure will be  
characterized by them.

10.4.10

DATE



REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
**PHILIPPINE COUNCIL FOR ADVANCED SCIENCE AND  
RESEARCH AND DEVELOPMENT**

4 June 2010

MS. MONABEL MAY APAO  
Department of Biology  
MSU-Iligan Institute of Technology  
Andres Bonifacio Ave., Iligan City

Dear Ms. Apao:

This has reference to the line-item-budget (LIB) you submitted.

I like to inform you that

The said grant is subje

Please be reminded that you are required to submit quarterly attached form too included evidence of results obtained (pictures Please note that we will not accept a one-time submission covering a number of months.

The check representing the first release in the amount of P40,000.00 be released upon submission of a quarter report.

Please sign the conforme below and return it to us.

Very truly yours,

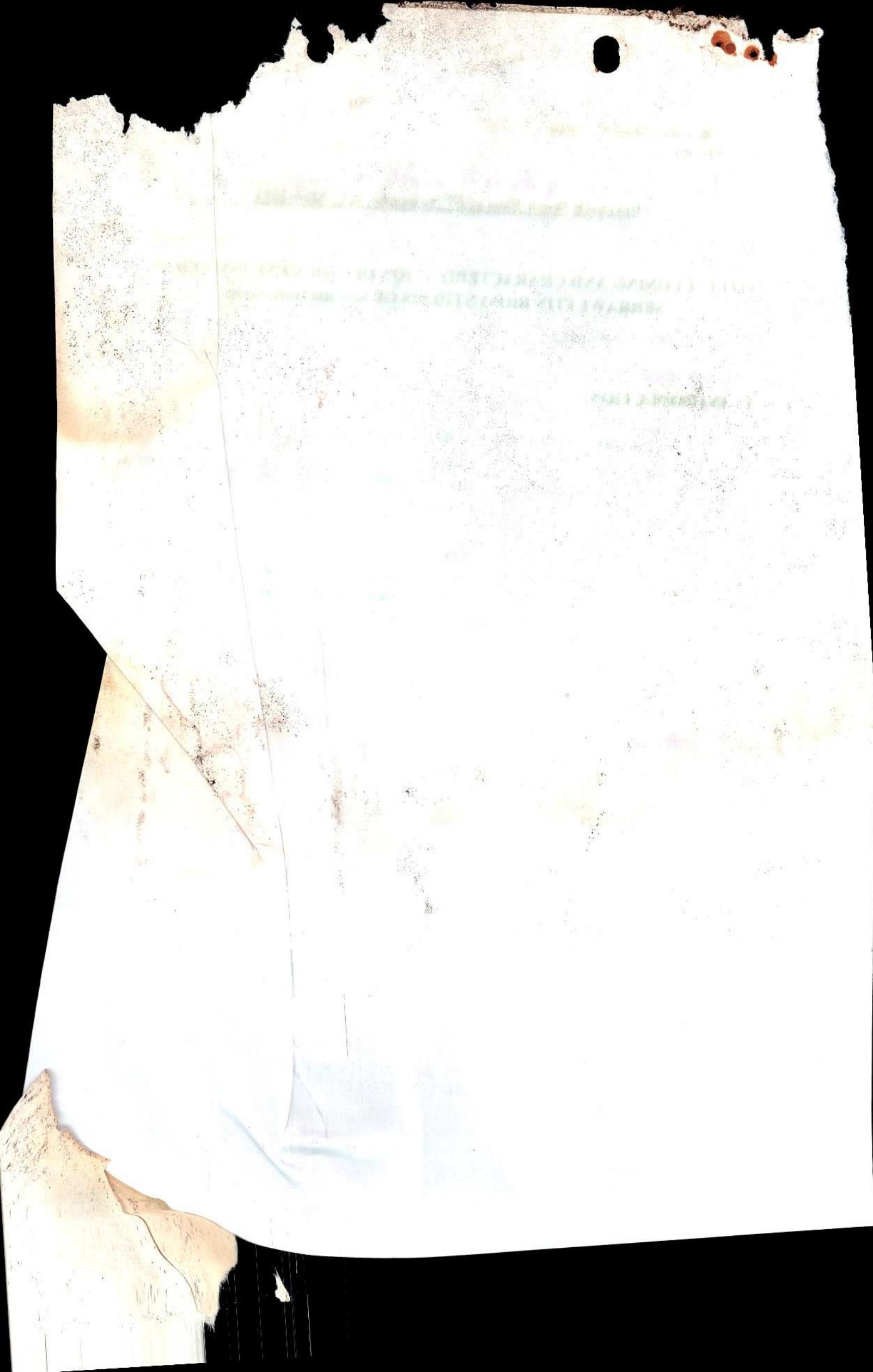
*[Signature]*

ENGR. ERMIE M. BACARRA  
Chief, HRIDD

**Human Resource and Institutional  
Development Division  
(HRIDD)**

## Action Slip

postscript



YOUNG 102201 140

your suggestion

W. gordon attended our meeting  
in connection with his recent  
incidence as a witness to our inquest.

Chinese Medicine Research Action Day  
October 5, 2010  
This page contains information to help plan or  
organize Day activities on Oct 5, 2010.

Revised 7/2009  
Title: CHINESE HERBAL MEDICINE  
SERVING THE HISTORICAL NEEDS OF THE  
HERB TRADE AND HERBAL MEDICINE  
RESEARCH INSTITUTE OF CHINA  
and TCM.

## A. INNOVATION METHODS

### B. INNOVATIONS FROM THE MUSEUM COLLECTION

- i. Starting museum projects
- ii. Promotional materials

iii. New drug products and products that serve to help the world

- iv. DIRECTIVES OF THE STUDY
- i. To clone and disseminate the SWM gene to the general public
- ii. To determine the sequence of SWM gene to assist studies of E mechanisms
- iii. To determine the copy number of the SWM homolog in the local strains of
- iv. To describe genome

- v. To characterize the gene sequence through proteomics

## C. SIGNIFICANCE OF THE STUDY

- i. Genetics of stemcell properties involving SWM gene of the local

- ii. The contribution of stemcell as a source of life and other

- iii. Biotechnological

- iv. Contribution of traditional Chinese medicine to the biogenetic process

- v. Contribution of traditional Chinese medicine to the biogenetic process

- vi. Contribution of traditional Chinese medicine to the biogenetic process

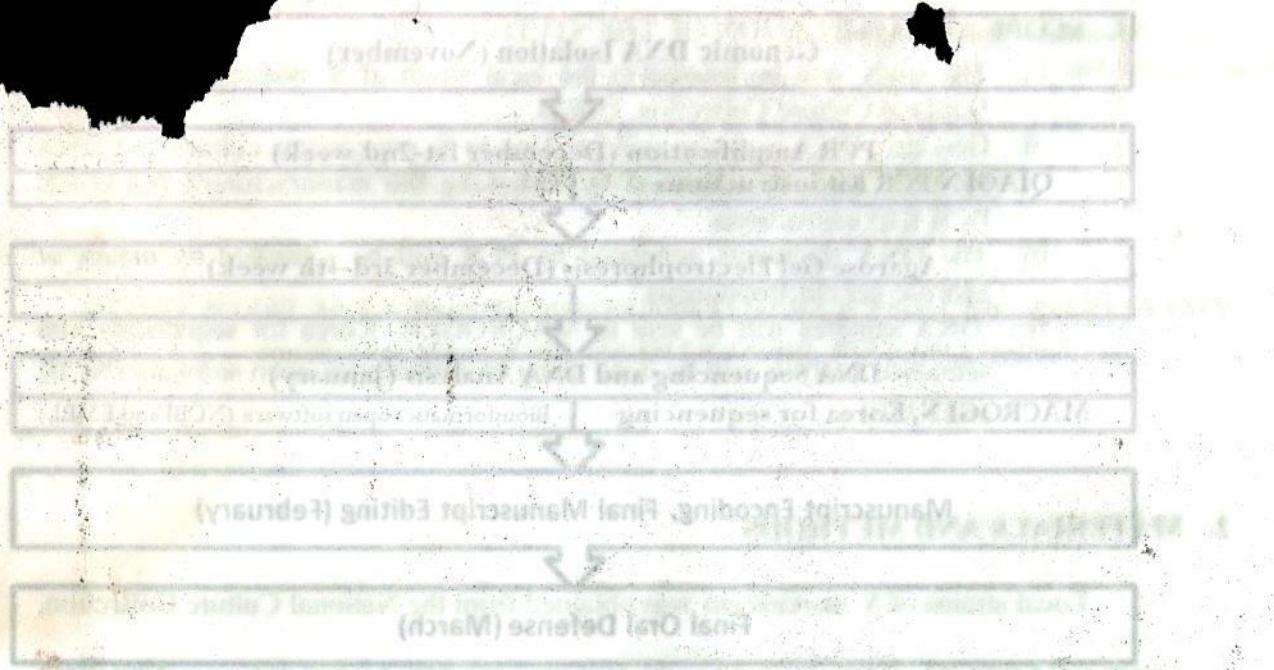


Figure 1. Sparsified Diagram showing the Subsidiaries of Activision of the licensees.

