KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS HASANUDDIN
LEMBAGA PENELITIAN DAN PENGABDIAN MASYARAKAT (LP2M)

Jl. Perintis Kemerdekaan KM.10 Kampus UNHAS Tamalanrea Makassar 90245
Telp.(0411) 587032, 582500, 588888 Fax.(0411) 587032, 584024
Website : http://www.unhas.ac.id/lppm email : lp2m@unhas.ac.id

Nomor : 3146/UN4.20/TU.15/2014
Lampiran : 1 (satu) exp.
Hal : Unggah Laporan Kemajuan

Makassar, 25 Agustus 2014

Yth. **Para Ketua Tim Peneliti Hibah Kompetitif Nasional dan Hibah Desentralisasi Penelitian Unggulan Perguruan Tinggi Tahun 2014**

di

Makassar

Dengan hormat, menindaklanjuti surat kami No. 2816/UN4.20/TU.15/2014, tanggal 07 Agustus 2014 tentang *Monev Hibah Kompetitif Nasional Tahun 2014*, dengan ini kami ingatkan kembali kepada ketua tim peneliti (***daftar terlampir***) untuk segera melaporkan, mengisi dan mengunggah setiap tahapan kegiatan pada SIMLITABMAS (http://simlitabmas.dikti.go.id/) dengan menggunakan login yang telah dimiliki oleh ketua tim peneliti.

Demikian penyampaian kami, atas perhatian dan kerjasamanya, kami sampaikan terima kasih.

Ketua,

Prof. Dr. Ir. Sudirman, M.P
NIP. 196412121989031004

Tembusan :
1. Wakil Rektor 1 Unhas
2. Ketua Dewan Riset LP2M Unhas

25-08-2014 21:45:03 **harus diisi dengan lengkap**. Data Identitas & Usulan Proposal yang tidak lengkap **tidak akan diproses lebih lanjut**.

Online: **36** pengunjung.

Beranda Usulan Hibah Penilaian Monitoring Pelaksanaan Data Pendukung Pesan

Thn Pelaksanaan: 2014

Kembali

Monitoring Laporan Kemajuan

Nama PT : Universitas Hasanuddin
Kode PT : 001005
Skema hibah: Kerjasama Luar Negeri dan Publikasi Internasional

1 Jml data: 3, Jml baris: 50

No	Nama Ketua - NIDN Nama Prodi	Judul	Thn Usulan	Dana Disetujui
1	**Dr RUDI DJAMALUDDIN ST., M.Eng** - 0008117003 *Teknik Sipil*	DURABILITY OF CONCRETE STRUCTURES STRENGTHENED EXTERNALLY USING FIBER REINFORCED POLYMER (FRP) AND ITS PERFORMANCE DUE TO SEA ENVIRONTMENT	2013 Usulan tahun ke: 1 dari rencana 3 tahun.	150,000,000
2	**Dr.Ir ROHANI AR M.Si** - 0013096901 *Ilmu Kelautan*	Ecosystem Function of Seagrass System in Different Hydrodynamic Regime: Implication for Seagrass Restoration	2013 Usulan tahun ke: 1 dari rencana 2 tahun.	155,000,000
3	**dr. UPIK ANDERIANA MISKAD Sp.PA.,Ph.D.** - 0030037403 *Pendidikan Dokter*	IDENTIFY AND ANALYZE MOLECULAR MARKERS IN THE PROGRESSION AND METASTASIS OF COLORECTAL CANCER; Evaluation of Protein Regenerating Liver-3 (PRL-3) as an emerging marker of carcinogenesis and its interact with other markers (Integrin β1, E Cadherin, MMP2, MMP9, VEGF A, VEGF C and EGFR)	2013 Usulan tahun ke: 1 dari rencana 3 tahun.	190,000,000

SURAT PERJANJIAN PELAKSANAAN PEKERJAAN

Antara

LEMBAGA PENELITIAN DAN PENGABDIAN PADA MASYARAKAT UNHAS

Dengan

KETUA/PENANGGUNGJAWAB KEGIATAN

Nomor : 1813/UN4.20/PL.09/2014

Pada hari ini Kamis, tanggal Dua puluh dua bulan Mei tahun Dua Ribu Empat Belas, kami yang bertandatangan di bawah ini :

1 Prof. Dr. Sudirman, M.Pi : Ketua Lembaga Penelitian dan Pengabdian Pada Masyarakat Universitas Hasanuddin, dalam hal ini bertindak untuk dan atas nama Universitas Hasanuddin selanjutnya disebut **PIHAK PERTAMA.**

2 dr. Upik Anderiani Miskad, Sp.PA., PhD : Ketua Pelaksana Kegiatan Kerjasama Luar Negeri dan Publikasi Internasional / Dosen Fakultas Kedokteran Universitas Hasanuddin selanjutnya disebut **PIHAK KEDUA.**

Secara bersama-sama telah sepakat mengadakan Perjanjian Pelaksanaan Pekerjaan antara **Pejabat Pembuat Komitmen Universitas Hasanuddin dengan Ketua LP2M Universitas Hasanuddin tentang "Penugasan Penelitian Kerjasama Luar Negeri dan Publikasi Internasional Lembaga Penelitian dan Pengabdian Masyarakat Universitas Hasanuddin" No. 18005/UN4.42/PL.08/2014, tanggal 20 Mei 2014 Tahun Anggaran 2014,** dengan ketentuan-ketentuan dan syarat-syarat sebagaimana tercantum pada pasal-pasal tersebut di bawah ini:

PASAL 1

PIHAK PERTAMA memberikan tugas kepada **PIHAK KEDUA** dan **PIHAK KEDUA** menerima penyerahan dari **PIHAK PERTAMA** pelaksanaan pekerjaan tentang:
"Identifity and Analyze Moleculer Markers in the Progression and Metastasis of Colorectal Cancer ; Evaluation of Protein Regenerating Liver-3 (PRL-3) as an emerging marker of carcinogenesis and its interact with other markers (Integrin b1, E Cadherin, MMP2, MMP9, VEGF A, VEGF C and EGFR)"

PASAL 2

1. **PIHAK KEDUA** sebagai penanggungjawab kegiatan berkewajiban menyampaikan kepada **PIHAK PERTAMA** laporan hasil pelaksanaan kegiatan tersebut dan penggunaan dana kegiatan paling lambat tanggal 25 Nopember 2014.

2. PIHAK KEDUA wajib menyerahkan laporan hasil penelitian Kerjasama Luar Negeri dan Publikasi Internasional Lembaga Penelitian dan Pengabdian Masyarakat Universitas Hasanuddin kepada PIHAK PERTAMA sebanyak 5 (lima) eksemplar beserta output penelitian (publikasi/draft publikasi, atau buku dan output lainnya) dalam bentuk hard copy serta soft copy dan PIHAK PERTAMA mengirim langsung kepada Pejabat Pembuat Komitmen Universitas Hasanuddin Jalan Perintis Kemerdekaan Km. 10 Makassar, selaku pemberi dana, dan menyerahkan 2 (dua) eksemplar sebagai arsip pada Lembaga Penelitian dan Pengabdian Masyarakat Universitas Hasanuddin.

PASAL 3

Jangka waktu pelaksanaan kegitan tersebut selama 198 (seratus sembilan puluh) hari kalender terhitung sejak tanggal 22 Mei 2014 sampai dengan tanggal 25 November 2014.

PASAL 4

PIHAK PERTAMA menyalurkan dana penelitian Kerjasama Luar Negeri dan Publikasi Internasional Lembaga Penelitian dan Pengabdian Masyarakat Universitas Hasanuddin dari pihak pemberi pekerjaan yang tersebut pada pasal 1 sebesar **Rp. 190.000.000,- (Seratus Sembilan Puluh Juta Rupiah)** yang dibebankan pada DIPA Universitas Hasanuddin Tahun Anggaran 2014, Alokasi Rupiah Murni (BOPTN) dengan Kode MAK 2013.109.013.521219. yang dibayarkan dalam 2 (dua) tahap dan ditransfer melalui rekening masing-masing pada BNI 1946 Capem Unhas Tamalanrea, dengan rincian sebagai berikut :

1.	Tahap I	Rp	190,000,000	x	80% -	PPh 2%	Rp	148,960,000
2.	Tahap II	Rp	190,000,000	x	20% -	PPh 2%	Rp	37,240,000

PASAL 5

1. Penerimaan dana Tahap II akan dilakukan jika syarat-syarat yang tertuang pada pasal 2 dapat dipenuhi.

2. Apabila dalam batas waktu yang telah ditetapkan, **PIHAK KEDUA** tidak segera menyerahkan laporan hasil kegiatan tersebut kepada **PIHAK PERTAMA**, maka **PIHAK KEDUA** dikenakan denda satu perseribu setiap hari keterlambatan, terhitung dari tanggal jatuh tempo yang telah ditetapkan sampai setinggi-tingginya 5% (lima persen) dari Harga/Nilai Perjanjian (Kontrak).
3. Ketua Pelaksana Kegiatan yang tidak menyerahkan laporan hasil kegiatannya dalam akhir tahun anggaran yang sedang berjalan dalam waktu proses pencairan biayanya telah berakhir maka seluruh biaya yang bersangkutan yang belum sempat dicairkan dinyatakan hangus (tidak dapat dicairkan kembali)

4. Apabila **PIHAK KEDUA** tidak dapat memenuhi perjanjian pelaksanaan kegiatan ini, maka **PIHAK KEDUA** wajib mengembalikan kepada **PIHAK PERTAMA** dana kegiatan yang telah diterimanya, untuk selanjutnya disetorkan kembali ke Kas Negara

PASAL 6

1. Apabila **PIHAK KEDUA**, karena satu dan lain hal bermaksud merubah pelaksanaan/lokasi/jangka waktu/ketua pelaksana dari pelaksanaan kegiatan yang telah disepakati dalam Surat Perjanjian ini **PIHAK KEDUA** harus mengajukan permohonan perubahan tersebut kepada **PIHAK PERTAMA**
2. Perubahan pelaksanaan/lokasi/jangka waktu/ketua pelaksana tersebut dapat dibenarkan bila telah mendapat persetujuan secara tertulis terlebih dahulu dari **PIHAK PERTAMA**

PASAL 7

Hak Cipta Kegiatan tersebut berada pada Ketua Pelaksana Kegiatan, sedangkan untuk penggandaan/memperbanyak laporan akhir hasil kegiatan adalah wewenang pelaksana.

PASAL 8

Surat Perjanjian Pelaksanaan Kegiatan ini, ditandatangani oleh kedua belah pihak di Makassar pada hari dan tanggal tersebut di atas dan dibuat rangkap dua.

PASAL 9

Hal-hal yang belum diatur dalam perjanjian ini akan ditentukan kemudian oleh kedua belah pihak secara musyawarah

PIHAK KEDUA,	PIHAK PERTAMA,
dr. Upik Anderiani Miskad, Sp.PA., PhD	**Prof. Dr. Sudirman, M.Pi**
	NIP. 19641212.198903.1.004

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS HASANUDDIN
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Website : http://www.unhas.ac.id/lppm email : lp2m@unhas.ac.id

SURAT KETERANGAN TANGGUNGJAWAB MUTLAK

Yang bertanda tangan di bawah ini :

Nama : dr. Upik Anderiani Miskad, Sp.PA., PhD
Jabatan : Ketua Tim / Dosen Fak. Kedokteran UNHAS

menyatakan bahwa :

1. Saya telah menerima dana tahap I Kegiatan Penelitian Kerjasama Luar Negeri dan Publikasi Internasional sebesar **Rp. 148.960.000,-** (Seratus Empat Puluh Delapan Juta Sembilan Ratus Enam Puluh Ribu Rupiah) dan menggunakannya sesuai dengan peruntukannya.
2. Saya bertanggungjawab penuh atas pengelolaan administrasi keuangan atas kerjasama tersebut.
3. Semua pembelanjaan mengacu pada ketentuan yang diatur dalam kepres RI No. 42 tahun 2002 dan No. 80 tahun 2003 dan Undang-Undang Perpajakan serta hak-hak Negara yang berkaitan dengan pengelolaan keuangan pemerintah dan berdasarkan persetujuan anggaran sebagaimana yang dituangkan dalam surat perjanjian pelaksanaan kerjasama antara **Pejabat Pembuat Komitmen Universitas Hasanuddin dengan Ketua LP2M Universitas Hasanuddin tentang "Penugasan Penelitian Kerjasama Luar Negeri dan Publikasi Internasional Lembaga Penelitian dan Pengabdian Masyarakat Universitas Hasanuddin" No. 18005/UN4.42/PL.08/2014, tanggal 20 Mei 2014 Tahun Anggaran 2014** untuk kegiatan dengan judul **"Identifity and Analyze Moleculer Markers in the Progression and Metastasis of Colorectal Cancer ; Evaluation of Protein Regenerating Liver-3 (PRL-3) as an emerging marker of carcinogenesis and its interact with other markers (Integrin b1, E Cadherin, MMP2, MMP9, VEGF A, VEGF C and EGFR)"**.
4. Menyampaikan laporan keuangan secara rutin kepada Pejabat Pembuat Komitmen selaku pemberi dana dan Lembaga Penelitian dan Pengabdian Masyarakat Unhas sebagai institusi penanggungjawab kegiatan.
5. Bersedia diperiksa oleh aparat pemeriksa fungsional bilamana diperlukan.
6. Mengarsipkan semua dokumen keuangan secara tertib dan teratur.

Demikian surat keterangan tanggungjawab mutlak ini dibuat dengan sebenarnya untuk dipergunakan sebagaimana mestinya.

Makassar, 6 Juni 2014
Ketua Tim

dr. Upik Anderiani Miskad, Sp.PA., PhD

Code/ Field of Science: 306/ Basic Medical Science

PROGRESS REPORT
INTERNATIONAL RESEARCH COLLABORATION AND SCIENTIFIC PULICATION

IDENTIFY AND ANALYZE MOLECULAR MARKERS IN THE PROGRESSION AND METASTASIS OF COLORECTAL CANCER;

Evaluation of Protein Regenerating Liver-3 (PRL-3) as an emerging marker of carcinogenesis and its interact with other markers (Integrin β1, E Cadherin, MMP2, MMP9, VEGF A, VEGF C and EGFR)

PRINCIPAL INVESTIGATOR:

1. **dr. Upik A. Miskad, PhD, SpPA (NIDN 0030037403)**
2. **dr. M. Husni Cangara, Ph.D (NIDN 0009047705)**
3. **Prof. dr. Syarifuddin Wahid, Ph.D, SpPA(K) (NIDN 0024074402)**
4. **Prof. Alfred Lam, MD, PhD (Griffith University Australia)**

HASANUDDIN UNIVERSITY
GRIFFITH UNIVERSITY
AUGUST 2014

Code/ Field of Science: 306/ Basic Medical Science

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HASANUDDIN UNIVERSITY
GRIFFITH UNIVERSITY
AUGUST 2014

LEGALIZATION FORM

Title of Research : **IDENTIFY AND ANALYZE MOLECULAR MARKERS IN THE PROGRESSION AND METASTASIS OF COLORECTAL CANCER;** Evaluation of Protein Regenerating Liver-3 (PRL-3) as an emerging marker of carcinogenesis and its interact with other markers (E Cadherin, MMP2, MMP9, Integrin β1, VEGF, VEGFC and EGFR)

Code/ Field of Science : 306/ Basic Medical Science

Chief Researcher

A. Full name : dr. Upik Anderiani Miskad, Ph.D, SpPA
B. NIDN : 0030037403
C. NIP/NIK : 19740330 200501 2 001
D. Sex : Female
E. Academic Rank : III d/ Lektor kepala
F. Faculty/ Department : Faculty of Medicine/ Pathology
G. Study of Interest : Cancer
H. Office address : Bagian Patologi Anatomi Fak. Kedokteran UNHAS, Jl. Perintis Kemerdekaan Km. 10 Makassar 90245
I. Telpon/Faks/E-mail : 0411-3624003 / 3630313 / upik.miskad@gmail.com
J. Mobile Phone : 0813 5569 0220

International Collaborator

A. Full name : Prof. Alfred Lam, MD, MBBA, PhD, FRC Path
B. Name of instiution : Griffith University
C. Adress of instituion : Gold Coast Campus, Griffith University, Quensland 2222,

Leng of Research period : **3 years**
Year of Research : **First Year**
Total Research funds

Years	Proposed to DIKTI
Years 1	Rp. 190.000.000, IDR
Years 2	Rp. 200.000.000, IDR
Years 3	Rp. 200.000.000, IDR

Makassar 5 November 2014

Acknowledged
Vice Dean, Faculty of Medicine

Prof. dr. Rosdiana Natsir, PhD
NIP. 19570326 198803 2 001

Chief Researcher

dr. Upik A. Miskad, Ph.D, SpPA.
NIP. 19740330 200501 2 001/0030037403

Approved :
Head of Research Institution

Prof. Dr. Ir. H. Sudirman, M.Pi
NIP. 19641212 198903 1 004/0012126401

ABSTRACT

Background. Colorectal cancer is the third most common malignant neoplasm worldwide and the second leading cause of death due to cancer in the United States. In Indonesia, colorectal cancer is an emerging public health problem and currently ranks among the three highest cancers. In Makassar, South Sulawesi Indonesia, the incidence of colorectal cancer is increasing and recorded as the most common malignant cancer according the pathology based data during 2010-2011. Despite recent advances in diagnostic and therapeutic measures develop, the prognosis of colorectal cancer patients with distant metastasis still remains poor. Mortality rate of colorectal cancer quite high and related to metastasis. Study on molecular carcinogenesis in colorectal cancer among Indonesian population is still few, therefore, it is necessary to clarify the molecular mechanisms involved in development and metastasis and to identify the specific biomarkers of colorectal cancer metastasis. Recently *PRL-3* (*phosphatase of regenerating liver-3/PTP4A3*) was reported participates in invasion, migration, metastasis and angiogenesis. But the cascade and which molecular interact with this protein still need to identify.

Material and methods. Tissue samples approximately 100 cases were collected from the patients with colorectal cancer in Hasanuddin University Hospital and Wahidin Sudirohusodo Hospital. The clinicohistopahological data were recorded and the expression of protein PRL-3, E Cadherin, MMP2 and MMP9 were detected by immunohistochemistry and analyzed molecular interact between them.

Results. PRL-3 protein was detected in cytoplasmic and cytoplasmic membrane of cancer cell. The expression was various among tumor cell.

Keywords: Colorectal Cancer, PRL-3, E Cadherin, MMP2, MMP9, marker carcinogenesis, metastasis

CHAPTER I

INTRODUCTION

I.1 BACKGROUND

Colorectal cancer is the third most common malignant neoplasm worldwide (Shike M, 1990) and the second leading cause of death due to cancer in the United States (Winawer SJ, 1997). In Indonesia, colorectal cancer is an emerging public health problem and currently ranks among the three highest cancers (Murdani, 2012). In Makassar, South Sulawesi Indonesia during 2010-2011, the incidence of colorectal cancer is increasing and recorded as the most common malignant cancer in Makassar according the pathology based data.

Lack of a colonoscopy screening and lifestyle changes might contribute to it. Diet is clearly implicated in the origin of colorectal cancer, with risk factors for the disease including reduced consumption of vegetables, fiber, and starch and increased consumption of red meat and animal fat. Several hypotheses have been developed to explain these associations (Bruce WR, 2000). High consumption of meat was found in Makassar population since the famous food in Makassar is a meat soup containing mostly gut. Although this lifestyle may contribute to many disease including cancer, but there is no study about correlation between dietary style and development of colorectal cancer in this population.

In the last few decades, there is an increasing interest towards the contribution of genetic-environment interaction in colorectal carcinogenesis. Some studies have indicated that CRC might develop through several different pathways; the three major routes are chromosomal instability (CIN), microsatellite instability (MSI), and inflammatory pathways. An earlier study on clinical epidemiology of CRC in Indonesia showed that the majority of patients were diagnosed between 45 and 50 years old, with a mean age around 47 years old. It is affect more younger population compare to other countries reported. Study on molecular carcinogenesis in colorectal cancer among Indonesian population is still few and need more study to elaborate clinical and pathological as well as molecular marker in colorectal cancer (Murdani, 2012). Despite recent advances in diagnostic and therapeutic measures develop, the prognosis of colorectal cancer patients with distant metastasis still remains poor. In addition, not a few colorectal cancer patients suffer from the unexpected development of occult metastases, especially in the liver and lung, after the curative resection of their primary tumors. Commonly in Indonesia, the patient with colorectal cancer come to see the clinician when the condition is alredy advanced stage. Mortality rate of colorectal cancer quite high and related to metastasis. Therefore, it is necessary to clarify the molecular mechanisms involved in metastasis and to identify the specific biomarkers of colorectal cancer metastasis.

To identify the consistent genetic alterations associated with the transition from primary colorectal cancers to liver metastases, (Saha *et al.* 2001) performed global gene expression profiles using a serial analysis of gene expression approach and found that *PRL-3* (*phosphatase of regenerating liver-3/PTP4A3*) was frequently overexpressed in the liver metastases studied, but expressed at lower levels in primary tumors and normal colorectal epithelium. Recently PRL-3 was reported participates in invasion, migration, metastasis and angiogenesis (Miskad UA, 2004, 2007), but the cascade and which molecular interact with this protein still need to identify.

I.2. RESEARCH RECORD

We started to study this PRL-3 gene and protein in 2003 and alredy published several paper in International journal, cited by other researchear. On the first time, we just checked the expression of PRL-3 protein in gastric cancer. It has been found that this gene has correlated with progression and metastasis of gastric cancer using sample from Japanese population. In Indonesia, gastric cancer is very few compared with colorectal cancer. Surgical operation with gastric cancer is limited. Meanwhile incidence of colorectal cancer increasing in Indonesian population. To the next future, we use colorectal cancer cases to understand the molecular mechanism of PRL-3.

I.3. RESEARCH OBJECTIVE

To understand the molecular mechanism of PRL-3 induce metastasis in colorectal cancer.

1. To identify the expression of PRL-3 gene and protein in colorectal cancer (primary tumor and metastasized colorectal cancer to lymphonode and liver).

2. To identify the expression of E Cadherin, Matrix Metallo Proitenase (MMP) 2 , MMP 9 in colorectal cancer.

3. To correlate the expression of PRL-3 with E Cadherin, Matrix Metallo Proitenase (MMP2) in colorectal cancer.

4. To analyse the expression of all these protein and clinicopathological parameters of colorectal cancer.

I.4. RESEARCH SIGNIFICANCE

Understanding the oncogenic mechanism of colorectal cancer, may provide the information about novel molecular marker for aggresivenes colorectal cancer, define prognosis and it may provide a new candidate therapeutic target for colorectal cancer. It will influence management of colorectal cancer. The last decade has witnessed exciting new strategies for the diagnosis and treatment of colon cancer, enabling improved patient survival. With the advent of molecular modeling and new tools that predict recurrence, the future will bring more individualized treatment, which ideally will result in improved outcomes.

I.5. OUTPUT/ TARGET

1. Publish research in International Seminar and publish qualified paper in international journal.

2. Extend International collaboration to expand more qualified research.

CHAPTER II

LITERATURE REVIEW

II.1 COLORECTAL CANCER

Colorectal cancer is the third most common type of cancer diagnosed in the United States and is the third most common cause of cancer-related death (Shike M, 1990). The majority of cases are sporadic, with hereditary colon cancer contributing up to 15% of all colon cancer diagnoses.

There are many known risk factors for sporadic CRC, including nonmodifiable and modifiable variables. Preventive measures should be targeted at tobacco use, dietary habits, and weight control. The inflammatory bowel disease (IBD) population is the second major category of patients at increased risk of CRC. The 2 main syndromes accounting for the inherited cases are hereditary nonpolyposis colon cancer (HNPCC) and familial adenomatous polyposis (FAP). The prevalence of HNPCC, is estimated to be 2% to 5%. The syndrome is caused by a germline mutation in 1 of 6 currently identified DNA mismatch repair (MMR) genes: *hMSH2, hMLH1, hPMS1, hPMS2, hMSH3*, and *hMSH6*. Inactivation of these genes leads to the development of short repeats of DNA, known as microsatellites; 90% of the mutations in the MMR genes are found specifically in *hMSH2* and *hMLH1*. Patients with HNPCC have an 80% lifetime risk of developing CRC. HNPCC is differentiated from sporadic colon cancer by a distinctive clinical picture. The average age of cancer diagnosis is much earlier (ie, 47 y vs 63 y), and there is a pattern of both metachronous and synchronous colon cancers, in addition to a high association with other primary tumors (eg, endometrial, ovarian, gastric, small bowel).

Initiation of colon cancer screening in the average-risk patient is indicated at age 50; however, current screening guidelines do not clearly define the optimal modality to perform screening. Sporadic colon cancer is believed to develop from benign lesions that deteriorate into carcinoma over a period of time, thus providing a window for early detection and treatment with the goal of lowering mortality. Between 1975 and 2000, the incidence of colon cancer decreased by 22%, with half of that volume attributed to screening and half to risk-factor modification and improved treatment. The screening methods for CRC are differentiated between detection and prevention. Fecal occult blood testing (FOBT) and stool DNA testing are methods that detect malignant disease, whereas computed tomography (CT) colonography, sigmoidoscopy, and colonoscopy can detect premalignant lesions (Winawer SJ, 1997).

Sporadic CRC is postulated to follow the adenoma–carcinoma sequence, precipitated by cumulative genetic mutations. Point mutations, altered DNA methylation, gene rearrangements, amplifications, and deletions comprised the most common mutational events that led to 3 described pathways leading to tumorigenesis: (1) gain of function (oncogene activation); (2) loss of function (tumor suppressors/apoptotic pathways); and (3) epigenetic alterations (DNA methylation patterns) (Sarah et al, 2011). CRC is diagnosed either after routine screening or prompted by the onset of new symptoms. Symptoms in CRC are nonspecific and vague, and may include a change in bowel habits, weight loss, abdominal pain, and fatigue. More specific symptoms such as obstruction, bleeding, or perforation may occur, prompting an urgent surgery. The goal of preoperative imaging is to accurately stage patients.

The critical component that determines prognosis in colon cancer remains the pathologic stage (**Table 1**). The variation in survival between early- and late-stage colon cancer underscores the importance of screening and early diagnosis. One well-known biomarker, carcinoembryonic antigen (CEA), is traditionally used postoperatively to monitor for recurrence. It has been suggested that preoperative CEA be incorporated into the TNM staging system for CRC (Sobin LH, 1997).

Table 1: TNM Staging System for Colorectal Cancer

Primary tumor (T)	
T_x	Tumor cannot be assessed
T_{is}	Carcinoma in situ
T_1	Tumor invades submucosa
T_2	Tumor invades muscularis propria
T_3	Tumor invades subserosa
T_4	Tumor directly invades adjacent organs/structures or through the visceral peritoneum

CHAPTER III

RESEARCH METODOLOGY

III.1. MATERIALS

Tissue samples. One hundred Paraffin-embedded surgical specimens of primary human colorectal carcinomas, lymph node metastases and liver metastasis were collected from Hasanuddin University Hospital and Wahidin Sudirohusodo Hospital. Informed consent was obtained from all patients. They consisted of men and women with an age range variably. Tumor size was divided in to two group according to maximum diameter. Histological type was classified as follows: well-differentiated tubular adenocarcinoma, moderately differentiated tubular adenocarcinoma, poorly differentiated adenocarcinoma, and mucinous adenocarcinoma. Depth of carcinoma invasion was classified as follows: *T1*, mucosa (m) and submucosa (sm); *T2*, muscularis propria (mp) and subserosa (ss); *T3*, serosa-exposed (se); *T4*, serosa-infiltrating (si). Extent of lymph node metastasis was classified as follow: *N0*, no evidence of lymph node metastasis; *N +* metastasis to lymph nodes; M+ metastasis to Liver.. Limphatic invasion, venous invasion and tumor stage was also defined for clinicopathological features.

Blood Samples. Blood samples from patient with colorectal cancer were collected. These samples were storage in -80 degrees C.

III.2. METHODS

Immunohistochemistry

Consecutive 4 µm sections were cut from each block, deparaffinized with xylene and rehydrated with graded ethanol solutions in deionized distilled water. Serial sections were subjected to hematoxylin and eosin staining to determine histological diagnoses and the remaining sections were processed for the immunohistochemical study. Immunohistochemical staining was performed using the streptavidin-biotin-peroxidase method with labeled streptavidin-biotin (LSAB; Dako, Kyoto, Japan). Briefly, the sections were placed in a glass box filled with 10 mmol/L citrate buffer (pH 6.0), and were autoclaved for 15 min at 125°C. The sections were allowed to cool in the box at room temperature (24°C) for 60 min before being immersed for 15 min in 0.3% H_2O_2 to block endogenous peroxidase, and then for 30 min in avidin-biotin blocking solution to block avidin in the tissue. The monoclonal antibodies, anti-**PRL-3** (1 : 100 dilution, Attogen Bio, anti **E cadherin** antibody (DAKO), anti **MMP2** antibody (R &D) and anti **MMP9** antibody (R &

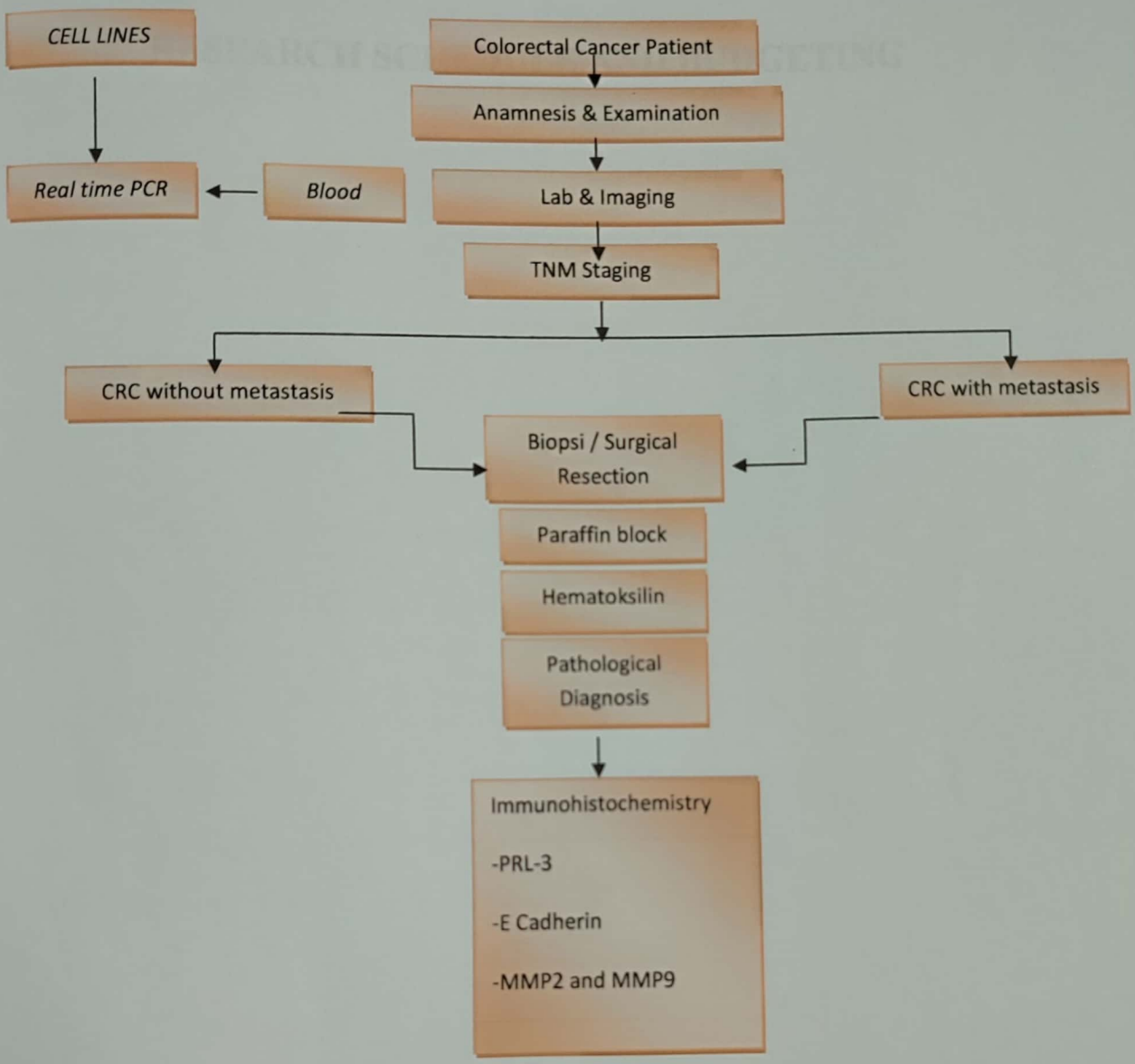
D), were applied to sections and incubated overnight at 4°C in a moist chamber. Subsequently, sections were biotinylated with goat antirabbit IgG for 30 min and streptavidin conjugated to horseradish peroxidase (DAKO, Kyoto, Japan) for 30 min. Chromogenic fixation was carried out by immersing the sections in the solution of 3,3-diamino-benzidine tetrahydrochloride (DAB) at room temperature (24°C) for 10 minutes until a distinct reaction product was evident microscopically. The sections were then counterstained with Mayer's hematoxylin. Negative control sections were incubated without primary antibody.

Immunoreactivity of antibodies were graded according to the number of stained cells and the staining intensity in individual cells as follows: -, almost no positive cells; +, less than 50% of tumor cells showed weak immunoreactivity; ++, less than 50% of tumor cells showed strong immunoreactivity; +++, over 50% of tumor cells showed strong immunoreactivity. Grades – and + were regarded as weak expression and grades ++ and +++ were regarded as strong expression. Smooth muscle fibers which have strong immunoreactivity were used for internal controls of positive immunoreaction. Immunostaining was evaluated independently by three independent observers who were unaware of the clinical and histological diagnoses, and all of the sections were scored twice to confirm the reproducibility of the results. (Miskad UA, 2004, 2007).

Statistical Analyses.

The relationships between the results of the immunohistochemical study and clinicopathological variable were tested by chi-square test. $p < 0.05$ was regarded as statistically significant.

III. 3. DIAGRAM OF OPERATIONAL RESEARCH



CHAPTER IV

RESEARCH SCHEDULE AND BUDGETING

VI. 1 RESEARCH SCHEDULE

Month	May	June	July	August	Sept	Oct	Nov	Dec
Preparation	X							
Collecting Specimen		X	X	X	X	X	X	
DNA extraction and Tissue Block Paraffin, Processing and Sectioning				X	X	X	X	X
Immunohistochemistry				X	X	X	X	
Documentation	X	X	X	X	X	X	X	X
Data analyses							X	X
Writing paper								X
Presentation Publication							X	X

Budget Year 1 : July 2014

VI.2.RECAPITULATION OF RESEARCH BUDGETTING

No	ITEMS	1st Year	
		Budget	%
1	Salary	Rp. 30.505.000	15.7%
2	Consumables things	Rp. 100.085.000	52.6%
3	Travelling	Rp. 39.410.000	20.5%
4	Others (publication, seminar, reports, etc)	Rp. 20.000.000	11.2%
	TOTAL	**Rp. 190.000.000**	

RESEARCH PROGRESS

1. Sample collection was started by using 2 methods:
   1.1. Collect new samples including Blood and Fresh Tissue by 17 August there were 11 patients. Some of them complete with blood, fresh tumor tissue and tissue in paraffin block. Other just only blood when operation could not be performed.
   1.2. Collect archieve samples from Department of Pathology Hasanuddin University hospital and Wahidin Sudirohusodo hospital. According to Pathology data, there were 125 patients diagnosed as Colorectal Cancer. We are now reviewing the patient data, clinical data and paraffin block itself. The sample must be selected again according to clinicopathological data and quality of paraffin block. The good one must be stored in formalin buffer fixation. The samples that we identify not using formalin 10% must be exluded from the research plan.
2. Ethical Clearance in Progress
3. Purchase ordered some antibodies
   3.1. PRL-3 (POAttogen Bio and AbCam)
   3.2. MMP-2 (will be arrive in the beginning of September from R & D company)
   3.3. MMP-9 (will be arrive in the beginning of September from R & D company)
   3.4. E-Cadherin (Dako, still purchase order)
4. Immunohistochemistry

   By using remaining antibody from other Project, we optimizing the staining condition of PRL-3 in Colorectal Cancer in some slide.

Immunostaining was performed using Envision Detection Kit Dako, Japan. Briefly, the sections were placed in a glass box filled with 10 mmol/L citrate buffer (pH 6.0), and were boiled in the microwave for 10 min. The sections were allowed to cool in the box at room temperature (24°C) for 60 min before being immersed for 15 min in 0.3% H_2O_2 to block endogenous peroxidase, and then for 30 min in avidin-biotin blocking solution to block avidin in the tissue. The monoclonal antibodies, anti-**PRL-3** (1 : 100 dilution, Attogen Bio, was applied to sections and incubated overnight at 4°C in a moist chamber. Subsequently, sections were biotinylated with goat antirabbit IgG for 30 min and streptavidin conjugated to horseradish peroxidase (DAKO, Kyoto, Japan) for 30 min. Chromogenic fixation was carried out by immersing the sections in the solution of 3,3-diamino-benzidine tetrahydrochloride (DAB) at room temperature (24°C) for 10 minutes until a distinct reaction product was

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Montagna M, Serova O, Sylla BS, Feunteun J, Lenior GM. A 100-kb physical andtranscriptional map around the EDH17B2 gene: identification of three novel genes and a

ATTACMENT 1. RESEARCH BUDGETTING FOR YEAR 1

I. SALARY

No	Items	Unit	Volume					Unit price Rupiah	Amount (Rupiah)
1	Principle Investigator	Man-day	1	x	180	:	180	72,250	13,005,000
2	Member of Investigator I	Man-day	1	x	10		70	67,500	4,725,000
3	Member of Investigator II	Man-day	1	x	10		70	67,500	4,725,000
4	Technician	Man-day	4	x	40		160	50,000	8,000,000
	TOTAL								30,455,000

II. CONSUMABLE THINGS

No	Items	Unit	Volume					Unit price (Rupiah	Amount (Rupiah)
1	Anti human PRL-3 antibody (0.2ml)	Vial	2				2	7,000,000	14,000,000
2	Anti human E Cadherin antibody	Vial	2				2	4,000,000	8,000,000
3	PBS 10 x 1 liter	Botle	2				2	1,000,000	2,000,000
4	DAKO real envision kit	Kit	2				2	11,500,000	23,000,000
5	DAKO antibody diluent	Btl	2				2	1,500,000	3,000,000
6	DAKO target retrieval antigen	Liter	2				2	4,050,000	8,100,000
7	DAKO pen	item	2				2	1,900,000	3,800,000
8	DAB+ Liquid, 110 mL	Btl	1				1	900,000	900,000
9	Protein Block Serum free.110 mL	Botle	1				1	3,200,000	3,200,000
10	Mayer Hematoxylin,500 mL	Btl	1				1	1500000	1,500,000
11	Yellow tip eppendorf	pack	1				1	300000	300,000
12	Blue tip eppendorf	pack	1				1	300,000	300,000
13	Falcon 15 mL	pack	1				1	300,000	300,000
14	Entellan,500 mL	btl	1				1	1,300,000	1,300,000
15	Slide Box /Kotak preparat	box	5				5	100000	500,000
16	Slides, clear glass	box	10				10	35000	350,000
17	Cover glass	box	10				10	50,000	500,000
18	Poly-L-Lysine Solution,100 mL	btl	1				1	2,800,000	2,800,000
19	MMP2 antibody	kit	2				2	5,000,000	10,000,000
20	MMP9 antibody	kit	2				2	6,500,000	13,000,000
21	Gloves	box	3				3	45,000	135,000

22	Formalin buffer	ltr	40				40	25,000	1,000,000
23	Methanol	ltr	1				1	400,000	400,000
24	H202	btl	1				1	400,000	400,000
25	Xilol	ltr	10				10	70,000	700,000
26	Ethanol	btl	2				2	300,000	600,000
	TOTAL								100,085,000

III. TRAVELLING

No	Items	Unit	Volume					Unit price	Amount
1	Local transportation for collecting samples	Man-trip	2	x	35	:	70	75,000	5,250,000
2	Domestic Travelling								
	a. Air ticket (Return)	Man-trip	2	x	1		2	3,730,000	7,460,000
	b. Accomodation	Man-night	2	x	1		2	600,000	1,200,000
	c. Local transportation	Man-trip	2	x	1		2	250,000	500,000
3	International Travelling								
	a. Air ticket (Return)	Man-trip	1	x	1		1	15,000,000	15,000,000
	b. Accomodation	Man-day	10	x	10		10	1,000,000	10,000,000
	TOTAL								39,410,000

IV. OTHERS (PUBLICATION, SEMINAR, REPORT, etc)

No	Items	Unit	Volume					Unit price	Amount
1	Documentation (Slide Photo)	Bundle	1	x	1	:	1	500,000	500,000
2	Ethical Clearance (EC)	apply EC	1	x	1		1	1,500,000	1,500,000
3	Publication in International Journal	Publication	1	x	1		1	7,000,000	7,000,000
4	National Seminar	Conference	1	x	1		1	8,000,000	8,000,000
5	Report, writing publication, etc	Report, Ls	1	x	1		1	3,000,000	3,000,000
	TOTAL								20,000,000

PEMBIAYAAN TOTAL Rp. 25.000.000,-

Pelaksana	Jumlah Minggu	Jumlah Jam/ Minggu	Honorarium	Biaya
1. Pengusul Utama	10	10	Rp. 15.000	Rp. 1.500.000
2. Anggota pengusul 7 orang	5	10	Rp. 15.000	Rp 5.250.000
TOTAL				**Rp.6.750.000**

BAHAN OPERASIONAL LAINNYA

Nama Bahan Operasional Lainnya	Item	Biaya Satuan	Biaya
Cytobrush	2 pack	200.000	400.000
Spatula ayre	2 pack	115.000	230.000
Cocor bebek 12 buah S,M, L	12 buah	200.000	2.400.000
Staining jar 10 buah	10 buah	100.000	1.000.000
Staining basket 3 buah	3 buah	350.000	1.050.000
Hematoxylin	1 bottle	1.150.000	1.150.000
Eosin	1 bottle	1.250.000	1.250.000
Orange G	1 bottle	1.250.000	1.250.000
Dek glass	6 pack	50.000	300.000
Glass slide	6 pack	30.000	180.000

CV:dr.UPIK ANDERIANI MISKAD,PhD, SpPA

Present Status	Lecturer staff at Department of Pathology, Faculty of Medicine, Hasanuddin University, Makassar. Januari 2005- present
Education	**2006- 2009** Diagnostic Pathology training (Pathologists) in Department of Pathology, Faculty of Medicine, Hasanuddin University, Makassar. • The best graduate among pathologist in 2009 (national exam) **2000 – 2004** Post Graduate Student (Ph.D., Course), Department of Surgical Pathology, Faculty of Medicine, Kobe University – Kobe, Japan. **1999 – 2000** Research Student, Department of Surgical Pathology, Faculty of Medicine, Kobe University – Kobe, Japan. **1996 – 1999** Graduate Student of Medical Doctor (dr), Faculty of Medicine, Gadjah Mada University (UGM) – Yogyakarta, Indonesia (Top ten best Graduate Student) **1992 – 1996** Diploma of Medicine (S.Ked), Faculty of Medicine, Gadjah Mada University (UGM) – Yogyakarta, Indonesia

	COURSE and CONFERENCE 1. Scientific Partnership for HER2 testing Excellence (SPHERE) Regional HER2 Testing Course. SHANGHAI CHINA 2012 2. Asia Pacific Congress for Pathology. Taipei TAIWAN 2011. 3. Pathology Update in Lung and Breast Cancer. Jakarta, June 2013 4. One day Seminr On Bioinformatics, Statistical Genetics and Cancer Registry, Makassar Indonesai, Sept 2013
Languages	Indonesian (Native), English (Fluent), Japanese (Fluent)
Personal	Address home : Griya Alam Permai Blok K no 11 Makassar Phone :(0411)5066554 Mobile :(081355690220) E-mail :upik.miskad@yahoo.com, upik.miskad@gmail.com Place / Date of Birth : Soppeng, March 30, 1974 Sex : Female Marital Status : Married Nationality : Indonesian Health : Excellent Hobbies and Interest : Reading
Awards (last 5 year)	1st Winner of **Dr Pang's Award** in the International Paper Scientific Competition in the 3rd Liver Up Date 2006, Jakarta Indonesia 1st Winner of **Paper Scientific Competition** in the 15th National Pathologist Meeting held by Association of Pathologist and Indonesian Journal of Pathology, 2006, Semarang, Indonesia. Juara II Dosen Berprestasi Unhas tahun 2008, di Makassar Lulusan **Terbaik I Ujian Nasional** (Kelulusan Dokter Spesialis Patologi Anatomi) Nov 2009

	di Medan Juara I Poster Presentation(**Best Poster Kategori Penelitian)** September 2011 pada acara Konker IAPI di Bandung Pemenang Nasional Fellowship **For Women in Science** (FWIS) yang diselenggarakan Loreal -UNESCO 2011, Kategori Life Science. Nominee of **Best Poster Presentation** in APSMI (Asia Pacific Sociaety for Molecular Immunohistology) Congress in Bali Denpasar Indonesia , May 2012 1st Winner of Poster **Paper Scientific Competition** in the Annual Pathologist Scientific Meeting held by Indonesian Association of Pathologist, 2013, Palembang, Indonesia.

Demikian CV ini, saya buat dengan sebenar benarnya.

Makassar, 1 Dec 2013

(Upik Anderiani Miskad)

CV dr. Cahyono Kaelan, PhD, SpPA

Nama : CAHYONO KAELAN		Gelar : dr, Ph.D, Sp.PA (K)
Tempat lahir : BANYUWANGI	Tgl lahir : 23 OKTOBER 1950	Kelamin : LAKI-LAKI
Jabatan : LEKTOR KEPALA Kepala Bagian Patologi Anatomi FK Unhas		Golongan : IVa
Bagian / Divisi : BAGIAN ILMU PATOLOGI ANATOMI		
Institusi Asal : FAKULTAS KEDOKTERAN UNIVERSITAS HASANUDDIN		
Telepon : 0411-586010/3624003	Faksimile : 0411-3630313	
Alamat Korespodensi Pos : PERUMAHAN DOSEN UNHAS TAMALANREA BLOK. N no.13		

1-2 Dec 2011. Australia. CARD15/NOD 2 Gene polymorphism in patients with colitis (Non specific colitis and Inflammatory bowel disease) in South Sulawesi Indonesia. (Poster)

6. The 20th Asia Pacific Cancer Conference. Tsukuba Japan, Nov 2009. Prevalence of Hormon receptors and Her-2/neu of Breast Cancer in Makassar. Miskad UA, Kaelan C, Wahid S. (Oral presentation)
7. Pertemuan Ilmiah Tahunan Patology Anatomi. Manado. Indonesia 2008. Symposium GI Tract. Miskad UA, Wahid S . (Oral presentation)
8. Symposium Frontier of Cancer Research, 2008, Jakarta Indonesia. Hepatitis B Virus (HBV) Genotype and Basal Core Promoter Mutations in HBV associated Liver Disease Patiens in Indonesia. Utama A, Miskad UA et al. (Poster)
9. Symposium Frontier of Cancer Research, 2008, Jakarta Indonesia. Hepatitis C Virus (HCV) Genotype in Blood Donors and HCV associated Liver Disease Patiens in Indonesia. Utama A, Miskad UA et al. (Poster)
10. Symposium Frontier of Cancer Research, 2008, Jakarta Indonesia. The Detection of colorectal cancer related SNPs in Indonesian Population. Li H, Miskad UA et al. (Poster)
11. 15th National Congress of Indonesian Association of Pathologists (IAPI) August 25-27 2006, Semarang Indonesia. High PRL-3 Expression: a marker of tumor metastasis and prognostic factor in human gastric cancer. (Oral presentation)
12. The 3rd Liver UpDATE 2006 New Challenges and New Trends in Hepatology, 28-30 July 2006, Jakarta-Indonesia. Expression of PRL-3 (Protein regenerating Liver-3) in Liver Carcinogenesis and Metastatic Cancer. (Oral presentation)
13. 8th ASIA PACIFIC Association of Societies of pathologists Congress, 2-5 September 2003, Bali-Indonesia. Expression of PRL-3 gene in tumor progression and metastasis of human gastric carcinomas. (Oral presentation)
14. 62nd Annual Meeting of the Japanese Cancer Association, September 25-27, 2003, Nagoya Japan. Expression of PRL-3 in human colorectal cancers associated with liver metastasis. H.Kato, Miskad UA, et.al. Expression of PRL-3 Gene in Tumor Progression and Metastasis of Human Gastric Carcinomas. Miskad UA, et al. (Poster)
15. 92nd Annual Meeting of the Japanese Society of Pathology, April 23-25, 2003, Fukuoka Japan. 1. Expression of PRL-3 in human colorectal cancers associated with liver metastasis. H.Kato, Semba S, Miskad UA, et.al. 2. Expression of PRL-3 Gene in Tumor Progression and Metastasis of Human Gastric Carcinomas. Miskad UA, et al. 3. Molecular Pathological Analysis of colorectal mucinous adenocarcinomas. Li Dong, Miskad UA, et al. (Poster)
16. 13th International Symposium of the Hiroshima Cancer Seminar, October 26 2003, Hiroshima Japan. Molecular Pathological Analysis of colorectal mucinous adenocarcinomas. Li Dong, Miskad UA, et al. (Poster)
17. XXIII International Congress of THE INTERNATIONAL ACADEMY OF PATHOLOGY and 14th World Congress of Academic and Environmental Pathology, 15-20 October, 2000, Nagoya- Japan.n Immunohistochemical study of p53, PCNA and AFP in Hepatocellular Carcinoma: A Comparison between Indonesian and Japanese Cases. (Oral presentation)