

بیتالی



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وزارت بهداشت، درمان و آموزش پزشکی

انستیتو مرجع سلامت

لوح کیفیت  
آزمایشگاه مرجع سلامت

نظر به جایگاه ارزشمند آزمایشگاه های پزشکی در ارتقاء سلامت فرد و جامعه و در راستای تقدیر از آزمایشگاه های که در رعایت الزامات  
استاندارد کوشا بوده اند این لوح به موجب بخشنامه شماره ۱۸۳۰۶۹/۱۸ مورخ ۸۶/۱۷/۸ آزمون آزمایشگاه مرجع سلامت، به پاس  
قدردانی از تلاش های ارزنده می کارکنان و مسئولین محترم آزمایشگاه فرسارمی، جناب آقای دکتر محمد درمادمودی  
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استقرار این لوح تا پایان سال ۱۳۹۰ می باشد

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

## آزمایشگاه پاتوبیولوژی فجر

راهنمای تهیه ، نگهداری ، بسته بندی و نقل و انتقال نمونه های آزمایشگاهی

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ویرایش دوم ، بهار ۱۳۹۸

کلیه حقوق برای آزمایشگاه فجر محفوظ است

**Fajr Pathobiology Laboratory**

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آدرس : ساری - بلوار کشاورز - انتهای پل راهبند - ساختمان دکتر دادخواه

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به نام آنکه تلاش را در سرشت بنده اش نهادینه کرد

آزمایشگاه پاتوبیولوژی فجر افتخار دارد که در راستای استانداردسازی، همگام با دیگر همکاران و متخصصین گرامی در اعتلای علوم آزمایشگاهی، سهم جزیی در شمال کشور داشته باشد. در این ارتباط هزینه های هنگفتی در بخش مواد و دستگاه های آزمایشگاهی، پرسنلی و اصول بهینه سازی استاندارد سازی انجام شده و همواره نیازمند همفکری و نوآوری پزشکان، اساتید و متخصصین علوم آزمایشگاهی کشور، آزمایشگاه مرجع وانجمن های مربوطه میباشد.

آزمایشگاه پاتوبیولوژی فجر افتخار دارد که در حفظ استراتژی گفته شده، با تجهیز کامل به آخرین تکنولوژی روزآمد و در آخرین اقدام خویش دستگاه GC MS و LC Tandem Mass را فراهم آورده تا بتواند علاوه بر تشخیص بیماریهای هماتولوژیک و انعقادی، خودایمنی، ویروسی، باکتریائی و عفونی، در زمینه بیماری های متابولیک نیز حرفی برای گفتن داشته باشد

باشد که در این راستا همکاران عزیز بنده با ارتباط از طرق موجود بنده و همکاران مرا با انتقادات و پیشنهادات خود یاری فرمایند.

## مقدمه :

بر اساس گزارش Bonini خطاهای پیش از آزمایش (Preanalytical) عمده ترین نوع خطاهای آزمایشگاهی را تشکیل می دهند . در این مطالعه ۷۵-۳۲٪ خطاهای آزمایشگاهی مربوط به نحوه تهیه نمونه ، حجم نمونه ، نگهداری و انتقال نامناسب ، همولیز ، وجود لخته و ... می باشد . نظر به اهمیت این نوع خطاها و جهت استاندارد سازی مراحل پیش از آزمایش ، همکاران آزمایشگاه پاتوبیولوژی فجر بر آن شدند تا با تالیف و تدوین این کتاب گامی در جهت ارتقاء کیفیت نمونه های آزمایشگاهی و اجرای الزامات آزمایشگاه مرجع سلامت بردارند .

از آنجائیکه بخش مهمی از خدمات ارایه شده توسط آزمایشگاه پاتوبیولوژی فجر برای بیماران مراجعه کننده به آزمایشگاه های سراسر کشور می باشد ، این کتاب می تواند راهنمای مناسبی برای آن ها و کلیه آزمایشگاه های کشور عزیزمان باشد . در تهیه و تدوین این کتاب علاوه بر اینکه از منابع علمیمعتبر و متعددی استفاده شده است ، بر اساس روش ها ، تکنیک ها و کیت هایی تهیه شده است که در آزمایشگاه پاتوبیولوژی فجر و یا در اغلب آزمایشگاههای سراسر کشور مورد استفاده قرار می گیرند . در واقع باید گفت که اطلاعات درج شده این راهنما ، عینی و جدید بوده و مورد استفاده امروز آزمایشگاههاست .



## جداسازی نمونه :

جداسازی صحیح و به موقع سرم یا پلاسما و سایر اجزای تشکیل دهنده خون و هم چنین سایر نمونه های کلینیکی نقش به سزائی در حفظ ماهیت آن ها دارد. از این رو همیشه تاکید بر این بوده تا در اولین فرصت ممکن ( حداکثر ۱۵ دقیقه پس از نمونه گیری ) نمونه ها سانتریفوژ شده و جداسازی انجام شود .

در صورتیکه برای برخی آزمایش ها توصیه متفاوتی در مورد زمان و سرعت سانتریفوژ وجود داشته باشد ، داخل جدول های این کتاب ارائه شده است .

در اغلب مراجع برای سانتریفوژ سرم و پلاسمای هیپارینه و یا EDTA سرعت ۱۰۰۰-۱۲۰۰ g به مدت ۱۰-۱۵ دقیقه و برای پلاسمای سیتراته ( کاربرد انعقادی ) ۱۵۰۰ g به مدت ۱۵ دقیقه ( با دو بار سانتریفوژ ) توصیه شده است .

نحوه محاسبه و تبدیل واحد دور سانتریفوژ به شرح زیر می باشد :

$$RCF (g) = 1.118 \times 10^{-5} \times r \times (RPM)^2$$

RCF : Relative centrifugal force

RPM : Round per minute

R : Turning radius centrifuge (cm)



## نگهداری نمونه ها :

جهت نگهداری نمونه های مختلف بیولوژیک شامل سرم ، پلاسما ، خون تام ، ادرار ، مایعات بدن و ... استفاده از لوله های پلاستیکی یک بار مصرف درب پیچ دار توصیه می شود .

دمای نگهداری شامل دمای اتاق ( ۱۵-۲۵ درجه سانتیگراد ) ، دمای یخچال ( ۲-۸ درجه سانتیگراد ) و دمای فریزر ( ۲۰- درجه سانتیگراد و پایین تر ) می باشد .



۳- لوله های مورد استفاده در آزمایشگاه پاتوبیولوژی فجر



شکل ۲- لوله پلاستیکی در پیچ دار شکل



شکل ۱- لوله فالکون در پیچ دار



## بسته بندی نمونه ها :

جهت حفظ نمونه ها از آسیب های فیزیکی ، دمایی و ریزش ، می بایست ظرف حمل و نقل ، متناسب با تعداد و حجم در نظر گرفته شود .

ظرف حمل و نقل شامل مشخصات زیر باشد :

۱- لایه اول ظرف یا ظروف ضد نشت اولیه یا محافظ اول

- محتویات آنها نباید بیشتر از ۱ لیتر باشد



۲- لایه دوم ظرف نشت ثانویه یا محافظ دوم

- در صورتیکه چند ظرف اولیه شکننده درون یک ظرف ثانویه قرار گیرد ، باید به طور منفرد و مجزا لفاف دار شوند تا از تماس و برخوردشان با یکدیگر جلوگیری شود .

- اگر محتویات ظرف یا ظروف اولیه مایع باشد ، مواد جاذب به مقدار کافی بین ظروف اولیه و ثانویه گذاشته می شود .

- فهرست جزء به جزء نمونه ها و اقلام باید بین ظروف ثانویه و محافظ بیرونی قرار داده شود .

۳- لایه سوم محافظت بیرونی یا ضد نشت آخر

- باید دارای مقاومت کافی بوده و حداقل ابعاد بیرونی آن نباید از ۱۰۰ میلی متر کمتر باشد .

- محتویات بسته بندی بیرونی نباید بیشتر از ۴ لیتر یا ۴ کیلوگرم باشد . اگر محموله نیازمند سرد نگه داشتن است ، این کمیت شامل یخ ، یخ خشک ، و نیتروژن مایع نیز می شود .

- برچسب نام و آدرس گیرنده و فرستنده و نام و شماره تلفن فرد مسئول و عبارت و نشان ماده بیولوژیکی ، باید بر روی لایه سوم ( محافظ بیرونی ) الصاق شود .

- اگر بسته بندی حاوی یخ خشک باشد باید وزن خالص یخ خشک در برچسب درج شود .



## انتقال نمونه ها :

پس از بسته بندی مناسب ، نمونه ها می بایست در شرایطی حمل گردد که کمترین تکان را داشته باشد و از نظر دمایی در شرایط ثابتی حمل و نقل شوند.



ایمنی و بهداشت حمل و نقل نمونه ها :

جهت حفظ سلامت حمل کننده نمونه و جلوگیری از آلوده سازی محیط می بایست امکانات رفع آلودگی ( بسته ریزش ) هنگام حمل نمونه در دسترس باشد . بسته ریزش حاوی مواد زیر می باشد :

ماده ضد عفونی کننده عمومی ( الکل اتانول ۷۰٪ یا دکونکس ) ، هیپوکلریت سدیم ۱۰٪ ، گاز استریل ، پنبه یا پارچه ، دستکش لاتکس ، ماسک ، زیپ کیف ، انبر ، کیسه اتوکلاو

هنگام ریزش ماده بیولوژیک ( خون ، سرم ، ادرار ، مایعات بدن و ... ) ابتدا بلافاصله با استفاده از ماسک و پوشیدن دستکش لاتکس ، گاز یا پنبه را روی محل ریزش قرار داده ، هیپوکلرید سدیم ۱۰٪ روی محل ریخته شده و حدود ۲۰ دقیقه صبر می کنیم تا عوامل عفونی امحا شود .

اشیا تیز و برنده را استفاده از انبر و باقیمانده مواد را هم با دستکش داخل کیسه اتوکلاو منتقل می کنیم .

## نکات نمونه برداری از کف پای نوزاد (Filter Paper) و نمونه ی ادرار جهت غربالگری متابولیک :

اقدامات قبل از نمونه گیری Urine از فرد :

نمونه ی ۲۴ ساعته ی ادرار و نمونه رندوم را می توان برای GC-MS استفاده نمود . ۷ میلی لیتر از نمونه ی ادرار نقطه ای کافی بنظر می رسد . پیش از آنکه نمونه ی ادرار گرفته شود ، از مصرف ویتامینهای B1 ، B6 ، B12 ، Carnitine ، Biotin ، Benzoic Acid جلوگیری کنید . در صورت مصرف Middle Chain Triglycerides به دکتر و یا مسئول آزمایشگاه اطلاع دهید . اگر فرد قبلا بستری شده است نیز به افراد فوق الذکر اطلاع دهید .

### نکات مهم در مورد نمونه گیری خون از نوزاد :

این خونگیری باید ۳ تا ۵ روز بعد از تولد انجام شود . محل خونگیری پاشنه پای نوزاد است که می بایست این محل پایین تر از سطح قلب باشد . پاشنه را باید با یک گاز یا حوله ولرم گرم کنید تا جریان خون در محل افزایش یابد . قبل از نمونه گیری باید دست ها را شسته و دستکش به دست کنید .

محل لانست در پاشنه پا و اطراف آن است که باید آن محل را با الکل ایزوپروپانول ۷۰٪ به خوبی پاک نموده و صبر کنید تا در جریان هوا خشک شود .

طول سوزن لانست باید حداکثر از ۲٫۴ میلی متر تجاوز نکند . اگر به هر دلیلی ، امکان خونگیری از پاشنه وجود نداشت ، می توانید از نرمه کناری دست خونگیری کنید . باید دقت کنید که به بخش عقبی پاشنه پا ضربه نزنید زیرا استخوان خیلی نزدیک به پوست است .

جهت نمونه گیری ، نیاز به ۳-۴ ساعت ناشتایی می باشد .

مشخصات نوزاد روی کاغذ فیلتر توسط خودکار نوشته شود . استفاده از روان نویس ، خودنویس و مداد ممنوع است .

فیلتر نمونه گیری به هیچ عنوان آغشته به مواد خارجی نگردد و همچنین از تماس دست حتی با دستکش بر سطوح دواپیر خونی جدا خودداری شود . در هنگام خونگیری هیچ تاخوردگی و خراش و پارگی بر روی کاغذ فیلتر نمونه گیری بوجود نیاید . از تهیه نمونه های خارج از سیستم برنامه غربالگری خودداری شود .

### انجام نمونه گیری :

با استفاده از دستکش استریل یکبار مصرف و به کمک یک لانست ضربه یکنواخت و آرامی به پاشنه پا وارد نمایید تا خون به راحتی جاری شود. قطره اول خون را با گاز استریل تمیز کرده (چون حاوی مایعات نسجی است) و سپس با فشارهای متناوب و مختصری که به پاشنه پا وارد می شود، قطره بزرگی شکل می گیرد. سپس کارت نمونه گیری را به خون نزدیک کردن تا جذب مرکز دایره فیلتر شده و پشت و روی آن را به صورت یکنواخت بپوشاند و آن را اشباع کند. با یک تکنیک صحیح می توان ۴ دایره روی کاغذ فیلتر قرار داد.

در صورتیکه نمونه گیری از محل لانست زده انجام نشد، از زدن لانست مجدد در همان محل اکیدا خودداری و محل مناسب دیگری را انتخاب کنید. همچنین باید از لانست استریل، پنبه و گاز استریل جدید استفاده کنید.

### ویژگی های نمونه مناسب:

شکل نمونه باید به صورت دایره باشد و قطر آن بیش از ۵ میلی متر باشد.

لکه خون از دو طرف همسان دیده شود و هیچ دو لکه ای روی هم نباشد.

در یک دایره بیش از یک لکه نباشد.

لکه های خون بدون اثر انگشت باشد.

### شرایط نگه داری نمونه:

بعد از تهیه نمونه کارت نمونه گیری حاوی خون نوزاد را به صورت افقی روی سطح مسطح قرار دهید. تقریباً ۳ ساعت وقت لازم است تا لکه های خون در حرارت ۱۵ الی ۲۵ درجه اتاق کاملاً خشک شوند.

در زمان خشک شدن از قرار دادن کارت های خونی در جریان هوای آلوده به دود و گرد و غبار و در معرض حرارت و تابش مستقیم نور خورشید جدا خودداری شود. کارت های نمونه گیری باید بدون چروک و یا تاخوردگی باشد.

احتیاط کنید که خون یک نمونه با خون نمونه دیگری در تماس نباشد. هریک از نمونه ها را جداگانه و به ضمیمه فرم مشخصات نوزاد در پاکتی قرار دهید.

کارت های خونی را می توان به مدت یک هفته در پاکت های مقاوم به رطوبت نگهداری نمود. کارت های حاوی لکه های خون در پاکت های پلاستیکی زیب دار و حاوی سیلیکاژل در حرارت ۴- تا ۸ درجه یخچال تا یک ماه و در فریزر ۲۰- درجه به مدت طولانی پایداری ماند.

## راهنمای استفاده از علائم اختصاری :

S: Serum

WB: Whole Blood

PE: Plasma (EDTA)

PC: Plasma (Citrate)

PH: Plasma (Heparin)

BF: Body Fluid

U: Urine

R: Random

Ns: Nasal Secretion

FE: Fluid discharge from the ear

D: Defibrinate

H: Heparin



	Test Name	Sample Type	Sample volume (ml)	Assay Method	Testing Date	Storage	Transport	Preparation Before sampling	Reject	Others
1	<b>17 Ketosteroids</b>	U(R&24hr) (see table5) pH : 2-4	10	Chemical, Column chrom.	Weekly	7 days at 2-8 °C 1 month at -20°C	at 2-8°C, -20°C	A large number of substances may interfere with this test. Decreases may be caused by: carbamazepine, cephaloridine, cephalothin, chlormerodrin, digoxin, glucose, metyrapone, promazine, propoxyphene, reserpine, and others. Increases may be caused by acetone, acetophenide, ascorbic acid, chloramphenicol, chlorothiazide, chlorpromazine, cloxacillin, dexamethasone, erythromycin, ethinamate, etryptamine, methicillin, methypylon, morphine, oleandomycin, oxacillin, penicillin, phenaglycodol, phenazopyridine, phenothiazine, piperidine, quinidine, secobarbital, spironolactone, and others		
2	<b>17 OH progesterone</b>	S,PH	0.3	Elisa	72 hr.	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Avoid using medication	Hemolysis, Icteric, Lipemic	
3	<b>2ME</b>	S,BF	0.4	Tube aggl.	Daily	1 week at 2-8°C, for longer time at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
4	<b>ACE</b>	S,BF	0.3	Enzymatic	72 hr.	5 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Notice using of captopril, enalapril, ... affected ACE level	Hemolysis, Icteric, Lipemic	Be separated quickly
5	<b>Acetaminophen</b>	S	1	Cobas Integra400	Daily	7 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
6	<b>Acetylcholine receptor Ab</b>	S	0.5	RIA	Weekly	1 week at 2-8°C, for longer time at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	Be separated quickly. Avoid freeze/thaw cycles
7	<b>Acid phosphatase (prostatic)</b>	S (Added 30 ul acetic acid 1.5 mol/L to 1 ml of serum and mix)	0.3	Photometric	Daily	5 hr. at RT 7days at 2-8°C	at 2-8°C	Fasting is recommended. Abstain using of cefotaxim few days prior to collection. Avoid prostate massage & rectal exam 2 days prior to collection	Hemolysis, Icteric, Lipemic	Be separated quickly. Avoid freeze/thaw cycles

	Test Name	Sample Type	Sample volume (ml)	Assay Method	Testing Date	Storage	Transport	Preparation Before sampling	Reject	Others
8	<b>Acid phosphatase (total)</b>	S (Added 30 ul acetic acid 1.5 mol/L to 1 ml of serum and mix)	0.3	Photometric	Daily	5 hr. at RT 5 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting is recommended. Abstain using of cefotaxim few days prior to collection. Avoid prostate massage & rectal exam 2 days prior to collection	Hemolysis, Icteric, Lipemic	Be separated quickly. Avoid freeze/thaw cycles
9	<b>ACTH</b>	PE	1	CLIA	Daily	14 days at -20°C CRITICAL FROZEN	at -20°C	Fasting. Avoid using of tourniquet. Sampling at 7-10 AM. Use silicone and plastic tube is recommended	Hemolysis	Be separated quickly and transport on ice. Cold syringe , cold tube and refrigerated centrifuge must be used
10	<b>ADA</b>	S,PE,CSF, BF	0.3	Enzymatic	Daily	5 days at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
11	<b>Adenovirus PCR</b>	See table 2		PCR	10 days	See table 2	See table 2		See table 2	
12	<b>Addis count</b>	U(R&12hr.)	20	Microscopic count	72 hr.	The test must be done the same day	2 hr. at 2-8°C	Not recommended		
13	<b>Albumin</b>	S,PE,BF, U(R&24hr) (see table5)	0.3	Photometric	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
14	<b>Aldolase</b>	S,PH	0.3	Enzymatic	Daily	5 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended	mild & gross Hemolysis, gross Icteric, gross Lipemic	Be separated quickly
15	<b>Aldosterone</b>	S,PE, U(24hr) (see table5)	0.4, for U:10	Elisa	By contact	3 days at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Abstain using of anti blood pressure, diuretic,... 2 weeks prior to collection	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle



16	<b>Alkaline phosphatase (ALP)</b>	S,PH	0.2	Photometric	Daily	3 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Fasting , Notice use of hepatotoxic drugs	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
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	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
17	<b>Alkaline phosphatase isoenzyme</b>	S,PH	0.2	Photometric	Daily	3 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Fasting, Notice use of hepatotoxic drugs	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
18	<b>Alpha 1 Anti Trypsin</b>	S,PH	0.3	Enzymatic	2 days	1 week at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Fasting is recommended. Avoid using of cefotaxim prior to collection	Hemolysis, Icteric, Lipemic	
19	<b>Alpha fetoprotein (AFP)</b>	S,PE,PH,BF	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
20	<b>Alprazolam</b>	S	1	HPLC	4 days	7 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
21	<b>Amino acid chromatography</b>	PE(prefered) ,CSF, U (Random)	U:10 Other:1	HPLC	3 days	1 day at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Fasting Urine must be fresh	Hemolysis	Plasma sample Be separated quickly
22	<b>Ammonia</b>	PE	0.5	Photometric	Daily	20 min at 4°C 3 months at -20°C	at -20°C	Avoid using of tourniquet	Hemolysis, Icteric, Lipemic	Refrigerated Centrifuge
23	<b>Amylase</b>	S,PE,PH	0.3	Photometric	Daily	7 days at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
24	<b>Ant Nuclear Ab (ANA)</b>	S,PE,BF	0.3	IFA	3 days	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
25	<b>Androstenedione</b>	S	0.3	Elisa	10 days	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting. Sample Collection 1 Week before or after menstruation	Hemolysis, Icteric, Lipemic	
26	<b>Anti smooth muscle Ab (ASMA)</b>	S	0.3	IFA	72 hr.	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		

27	<b>Anti A titer (isohemagglutinin)</b>	S	0.5	Agglutination	Daily	7 days at 2-8°C For longer time at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
28	<b>Anti B titer (isohemagglutinin)</b>	S	0.5	Agglutination	Daily	7 days at 2-8°C For longer time at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
29	<b>Anti B2 Glycoprotein (IgG)</b>	S,PE	0.5	Elisa	10 days	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
30	<b>Anti B2 Glycoprotein (IgM)</b>	S,PE	0.5	Elisa	10 days	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
31	<b>Anti Cardiolipin Ab (IgG)</b>	S	0.3	Elisa	3 days	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	avoid freeze/ thaw cycle
32	<b>Anti Cardiolipin Ab (IgM)</b>	S	0.3	Elisa	3 days	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	avoid freeze/ thaw cycle
33	<b>Anti CCP</b>	S,PE,PH	0.5	Elisa	72 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	
34	<b>Anti Centromer Ab (IgG)</b>	S	0.3	Elisa	72 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
35	<b>Anti (ds)DNA</b>	S	0.3	Elisa	72 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
36	<b>Anti Endomesial Ab (IgA)</b>	S,PE	0.3	IFA	72 hr.	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		

37	<b>Anti Endomesial Ab (IgG)</b>	S,PE	0.3	IFA	72 hr.	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
38	<b>Anti GAD Ab</b>	S	1	Elisa	Weekly	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
39	<b>Anti GBM Ab</b>	S	0.3	IFA	4 days	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
40	<b>Anti Gliadin (IgA)</b>	S	0.3	Elisa	72 hr.	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	
41	<b>Anti Gliadin (IgG)</b>	S	0.3	Elisa	72 hr.	5 days at 2-8°C For longer time at -20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	
42	<b>Anti GM1 (IgG)</b>	S	0.3	Elisa	By contact	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
43	<b>Anti GM1 (IgM)</b>	S	0.3	Elisa	By contact	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
44	<b>Anti Histone Ab</b>	S	0.5	Elisa	15 days	5 days at 2-8°C 6 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
45	<b>Anti Intrinsic Factor</b>	S	0.5	Elisa (alegria)	Weekly	5 days at 2-8°C 6 months at-20°C	at 2-8°C, -20°C	Not recommended		avoid freeze/ thaw cycle
46	<b>Anti Leptospira (IgG)</b>	S,CSF	0.5	IFA,Elisa	72 hr.	7 days at 2-8°C 2 months at-20°C	at 2-8°C, -20°C	Not recommended		

47	<b>Anti Leptospira (IgM)</b>	S,CSF	0.5	IFA,Elisa	72 hr.	7 days at 2-8°C 2 months at-20°C	at 2-8°C, -20°C	Not recommended		
48	<b>Anti Jo-1 Ab</b>	S	0.3	Elisa	72 hr.	7 days at 2-8°C For longer time at -20°C	at 2-8°C, -20°C	Not recommended		
49	<b>Anti Mullerian Hormone (AMH)</b>	S	0.3	Elisa	By contact	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
50	<b>Anti Parietal Ab</b>	S	0.3	Elisa	4 days	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
51	<b>Anti Pemphigus</b>	S	0.3	Elisa	4 days	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
52	<b>Anti Phospholipid (IgG)</b>	S,PH	0.3	Elisa	72 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
53	<b>Anti Phospholipid (IgM)</b>	S,PH	0.3	Elisa	72 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
54	<b>Anti Platelet Ab</b>	S	0.3	IFA	Weekly	5 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
55	<b>Anti PR3 (c-ANCA)</b>	S,PE	0.5	Elisa	72 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
56	<b>Anti RNP</b>	S	0.3	Elisa	72 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	

57	<b>Anti SCL- 70 Ab (Topoisomerase)</b>	S,PE	0.3	Elisa	72 hr.	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
58	<b>Anti Smith Ab</b>	S	0.3	Elisa	72 hr.	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
59	<b>Anti Sperm Ab</b>	S	0.3	IFA	Weekly	5 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
60	<b>Anti SSA (Ro) Ab</b>	S	0.3	Elisa	72 hr.	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
61	<b>Anti SSB (La) Ab</b>	S	0.3	Elisa	72 hr.	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
62	<b>Anti Thyroglobulin Ab (Anti-Tg)</b>	S,PE	0.3	CLIA	Daily	7 days at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
63	<b>Anti Mitochondrial Ab (AMA)</b>	S,PE	0.3	IFA	72 hr.	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
64	<b>Anti Thrombin III</b>	PC	0.5	Photometric	Daily	8 hr. at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	Avoid repeated freeze/thaw cycles Be separated quickly / Two times centrifugation is preferred.
65	<b>Anti MCV</b>	S	0.5	Elisa	2 weeks	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
66	<b>Anti MPO (p-ANCA)</b>	S,PE,PC	0.3	Elisa	72 hr.	7 days at 2-8°C 3 month at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	

67	<b>Anti MuSK</b>	S,PH,CSF	0.5	Elisa	40 days	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
68	<b>Anti MOG</b>	S,PH,CSF	0.5	Elisa	40 days	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
69	<b>Apo A1</b>	S,PE,PH	0.4	Imm.turb.	Weekly	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
70	<b>Apo B</b>	S,PE,PH	0.4	Imm.turb.	Weekly	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
71	<b>APTT</b>	PC	1	Coagulation	Daily	2 hr. at RT 4 hr. at 2-8°C 14 days at-20°C	at 2-8°C, -20°C	Notice use of argatroban, heparin, heroin,....	Hemolysis	Be separated quickly
72	<b>Arylsulfatase A</b>	WB (H&dextrane 6% in saline 9%) (Call with lab)	10	Chemical	Weekly	Be performed quickly	Be performed quickly	Not recommended	Hemolysis, Clotting, Incorrect anticoagulant	
73	<b>ASCA (IgG)</b>	S	0.3	Elisa	Weekly	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	Centrifuge 1000 rpm 10 min

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
74	<b>Ascitic fluid culture</b>	Ascitic fluid	10	Aerobic & Ana	Daily	The same time must be tested..	at 2-8°C	Avoid using antibiotic		
75	<b>ASO</b>	S	0.4	Imm.turb.	Daily	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
76	<b>Aspirin (salicylate)</b>	S	1	HPLC	4 days	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended		

77	<b>B2 Transferrin (CSF leakage)</b>	S & Discharge from the nose or ears	1&1	IEF	4 days	4 hr. at RT 3 days at 2-8°C	at 2-8°C	Avoid freezing / Both sample required for testing	Both sample are not sent, Frozen	
78	<b>B2 microglobuline</b>	S,PE, CSF, U(R&24hr) (see table5)	0.5	CLIA	4 days	3 days at 2-8°C 3 months at-20°C (U:2 months & CSF 2 weeks at -20)	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/thaw cycle
79	<b>BAP Ostase</b>	S	0.3	CLIA	5 days	4 days at 2-8°C 1 month at-20°C	at 2-8°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/thaw cycle
80	<b>BCR/ABL (P190) PCR- ALL</b>	WB(E), BMA(E)	5	PCR	7 days	1 day at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
81	<b>BCR/ABL (P210) PCR- CML</b>	WB(E), BMA(E)	5	PCR	7 days	1 day at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
82	<b>Beta crosslaps</b>	S,PE	0.5	ELISA	10 days	8 hrs. at 2-8°C 14 days at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
83	<b>Bence jones protein</b>	U(R&24hr) (see table5)	10	Chemical	Daily	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended		
84	<b>BhCG</b>	S,PE	0.5	CLIA	Daily	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Abstain using of chlorpromazine few days prior test (False positive)	Hemolysis, Icteric, Lipemic	avoid freeze/thaw cycle
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
85	<b>Bilirubin (T&amp;D)</b>	S,PE	0.5	Photometric	Daily	5 days at 2-8°C 3 month at-20°C (dark place)	at 2-8°C, -20°C (dark place)	Notice is using of hepatotoxic drugs	Hemolysis	avoid freeze/thaw cycle
86	<b>Biotinidase</b>	Dried Blood Sample	5 spots	Elisa	Weekly	at 2-8 °c after 4 hr. drying		At 2-8°c		

87	<b>Bleeding time (BT)</b>			Duce	Daily			Avoid using of anticoagulant drugs		
88	<b>Blood culture</b>	WB	10% of culture mediu	Aerobic	Daily + 14 days	The same time transported at37°C	at RT <1hr	Avoid using antibiotic		
89	<b>Blood group &amp; RH</b>	WB(E)	1	Hemagglut.	Daily	1 days at RT 1week at 2-8°C	at RT, 2-8°C	Not recommended	Hemolysis, Frozen, Clotting	
90	<b>Body Fluids</b>	BAL , Ear discharge ,vaginal discharge , pleural , eye , sputum , urine , tear , saliva , semen, CSF , synovial fluid	---	Chemistry , Direct & Culture	Direct : 24hr Culture : 1 months	RT	RT	Not recommended		
91	<b>Bone marrow aspiration culture</b>	WB(E)	1	Aerobic & Ana	Daily + 8 days	The same time must be tested	at 2-8°C	Avoid using antibiotic		
92	<b>Bone marrow aspiration (BMA) pathology</b>	WB(E)	1		7 days	3 months after fixation	at RT	Not recommended		
93	<b>Bone marrow biopsy culture</b>	BMB		Aerobic & Ana	Daily + 8 days	The same time must be tested		Avoid using antibiotic		
94	<b>Bone marrow biopsy (BMB) pathology</b>	BMB			7 days	1 months after fixation	at RT	Not recommended		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
95	<b>Borellia parasite</b>	WB(E)	1	Giemsa stain	4 days	1 day at RT 7 days at 2-8°C	at 2-8°C	Not recommended		



96	<b>Borrelia Ab (IgG)</b>	S,PE,CSF	0.5	CLIA	4 days	1 week at 2-8°C 3 month at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
97	<b>Borrelia Ab (IgM)</b>	S,PE,CSF	0.5	CLIA	4 days	1 week at 2-8°C 3 month at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
98	<b>Borrelia Burgdorferi</b>	S,PE	0.5	Western Blot	By contact	1 week at 2-8°C 3 month at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	
99	<b>Breast dis. culture</b>	Breast dis	5	Aerobic & Ana	Daily + 7 days	The same time must be tested	at RT	Avoid using antibiotic		
100	<b>Bronchia dis. culture</b>	Bronchia dis	5	Aerobic	Daily + 7 days	The same time must be tested	at RT	Avoid using antibiotic		
101	<b>Brucella Ab (IgG)</b>	S,PE,CSF	0.3	Elisa	4 days	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
102	<b>Brucella Ab (IgM)</b>	S,PE,CSF	0.3	Elisa	4 days	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
103	<b>Brucella culture</b>	WB	5	Aerobic	Daily + 28 days	at 37°C	at 37°C	Avoid using antibiotic		
104	<b>Brucella PCR</b>	See table 2	1	PCR	Sun & Wed + 4 days	See table 2	at 2-8°C	See table 2	See table 2	See table 2
105	<b>Buccal smear</b>	Mouth epi. Cells	4 Slides	Pap. staining	4 days	3 months after fixation	at RT	Not recommended		Fixation with ethanol
106	<b>BK Virus</b>	See table 2		PCR	Wed + 3 days	See table 2	at 2-8°C	See table 2	See table 2	See table 2
107	<b>C1 Inhibitor (C1 INH)</b>	S	0.3	Imm.turb.	Weekly	2 days at 2-8°C 2 months at-20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
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108	<b>C3</b>	S,PE,PH	0.3	Imm.turb.	Daily	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
109	<b>C4</b>	S,PE,PH	0.3	Imm.turb.	Daily	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
110	<b>CA 125</b>	S,PE,PH,BF	0.5	CLIA	Daily	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
111	<b>CA 15-3</b>	S,PE,PH,BF	0.5	CLIA	Daily	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
112	<b>CA 19-9</b>	S,PE,PC,BF	0.5	CLIA	Daily	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
113	<b>CA 242</b>	S,PE,BF	0.5	Elisa	Weekly	3 days at 2-8°C For longer time at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
114	<b>CA 72-4 (TAG-72)</b>	S	0.5	Elisa	Weekly	3 days at 2-8°C For longer time at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis (Mild,Gross)	
115	<b>Calcitonin</b>	S	0.5	CLIA	4 days	5 days at 2-8°C For longer time at-20°C	at 2-8°C, -20°C	Fasting is recommended		
116	<b>Calcium</b>	S,BF, U(R&24h)	0.5	Photometric	Daily	8 days at 2-8°C For longer time at-20°C	at 2-8°C, -20°C	Fasting is recommended. Avoid using of tourniquet.	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
117	<b>Calprotectin</b>	Stool	1 gram	Elisa	72 hr.	1 days at 2-8°C 1 month at-20°C	at -20°C	Not recommended		
118	<b>Cannabis (THC)</b>	U(R)	2	Enzymatic	Weekly	2 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended		
119	<b>Carbamazepine</b>	S	0.5	HPLC	daily	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		

	Test Name	Sample Type	Sample volume (ml)	Assay Method	Testing Date	Storage	Transport	Preparation Before sampling	Reject	Others
120	<b>CBC</b>	WB(E)	2	Flow cytometry	Daily	4 hr. at RT 1 days at 2-8°C	at RT , 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
121	<b>CD 10</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
122	<b>CD 103</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
123	<b>CD 117</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
124	<b>CD 11a</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
125	<b>CD 11b</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
126	<b>CD 11c</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
127	<b>CD HLA-DR</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
128	<b>CD MPO</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	

129	<b>CD13</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
130	<b>CD14</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
131	<b>CD15</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
132	<b>CD16</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
133	<b>CD18</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
134	<b>CD19 (B- cell)</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
135	<b>CD1a</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
136	<b>CD2</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
137	<b>CD20</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
138	<b>CD21</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect	

									anticoagulant	
139	<b>CD22</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
140	<b>CD23</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
141	<b>CD25</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
142	<b>CD27</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
143	<b>CD3(T- cell)</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
144	<b>CD33</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
145	<b>CD34</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
146	<b>CD38</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
147	<b>CD4</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect	

									anticoagulant	
148	<b>CD41</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
149	<b>CD43</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	

	Test Name	Sample Type	Sample volume (ml)	Assay Method	Testing Date	Storage	Transport	Preparation Before sampling	Reject	Others
150	<b>CD45</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
151	<b>CD45RO</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
152	<b>CD5</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
153	<b>CD54</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
154	<b>CD55</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
155	<b>CD59</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	

156	<b>CD64</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
157	<b>CD68</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
158	<b>CD7</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
159	<b>CD71</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
160	<b>CD79</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
161	<b>CD8</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
162	<b>CD IgD</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
163	<b>CD IgM</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
164	<b>CD TdT</b>	WB(E)	0.2	Flow cytometry	5 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	

165	<b>CEA</b>	S,PE,PH	0.5	CLIA	Daily	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
166	<b>Ceruloplasmin</b>	S,PE,PH	0.5	Chemical	72 hr.	7 days at 2-8°C For longer time at-20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	
167	<b>CH50</b>	S	1	Elisa	72 hrs	2 hrs at RT. 14 days at-20°C	at -20°C	Not recommended	Hemolysis	avoid freeze/ thaw cycle
168	<b>Chlamydia(IgG)</b>	S	1	Elisa	weekly	1 day at RT 7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
169	<b>Chlamydia(IgM)</b>	S	1	Elisa	weekly	1 day at RT 7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
170	<b>Chlamydia trachomatis PCR</b>	See table 2		PCR	weekly	See table 2		Not recommended		

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
171	<b>Chlordiazepoxide</b>	S	1	HPLC	4 days	7 days at 2-8°C 14 days at-20°C	at 2-8°C, -20°C	Not recommended		
172	<b>Chloride (Cl)</b>	S,PH,BF, U(R&24hr) (see table5)	1	Photometric	Daily	24 hrs. at RT 7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
173	<b>Cholesterol</b>	S,PE,PH	0.3	Photometric	Daily	24 hrs. at RT 7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
174	<b>Cholinesterase (CHE)</b>	S,WB(E)	0.3	Photometric	Daily	Serum: 7 days at 2-8°C 3 months at-20°C WB: 3 days at 2-8°C	Serum: at 2-8°C, -20°C WB: 2-8°C	Not recommended	Serum: Hemolysis, Lipemic WB: Hemolysis, Clotting,	



									Frozen, Incorrect anticoagulant	
175	<b>Circle Immune Complex (CIC)</b>	S	0.5	Imm.turb.	4 days	2 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Fasting is recommended		
176	<b>Citrate</b>	U(24hr&R) (see table5) PH=2	10	Enzyme Colorimetry	4 days	1 week at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended		
177	<b>Clonazepam</b>	S	1	HPLC	4 days	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
178	<b>Clostridium difficile toxins (Toxin A &amp; B)</b>	Stool	1gr	Elisa	Weekly	2 hr. at RT 3 days at 2-8°C	at 2-8°C	Not recommended		
179	<b>Clotting time (CT)</b>			Tube method	Daily			Abstain using of anti coagulant drugs		
180	<b>CMV Ab (IgG)</b>	S,PE,PH,PC, BF,CSF	0.5	CLIA	Daily	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
181	<b>CMV Ab (IgM)</b>	S,PE,PH,PC, BF,CSF	0.5	CLIA	Daily	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
182	<b>CMV Ag (pp65)</b>	WB(E)	3	DIF	72 hr.	6 hr. at RT 2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, Clotting, Incorrect anticoagulant	
183	<b>CMV PCR</b>	See table 2	2	PCR	72 hr.	See table 2	at 2-8°C, -20°C	Not recommended		
184	<b>CMV PCR (quantitative)</b>	See table 2	2	Real time	72 hr.	See table 2	at 2-8°C, -20°C	Not recommended		

185	<b>Cocaine</b>	U(R)	1	Photometric	24 hr.	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended		
186	<b>Cold Agglutinin</b>	S	0.5	Agglutination	24 hr.	7 days at 2-8°C 1 month at-20°C	at 2-8°C	Not recommended		
187	<b>Consult Slide &amp; Block pathology</b>	Slide , Block			7 days	Minimum 15 years after fixation		Not recommended		
188	<b>Coombs Wright</b>	S,BF,CSF	1	Agglutination	2 days	2 days at 2-8°C 7 days at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
189	<b>Coombs (Direct)</b>	WB( E )	0.5	Hemagglut	Daily	1 day at 2-8°C 5 days at-20°C	at 2-8°C	Not recommended	Hemolysis, Icteric, Lipemic	
190	<b>Coombs (Indirect)</b>	S,BF	0.5	Hemagglut	Daily	5 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
191	<b>Copper (Cu)</b>	S,PH,BF U(R&24hr) (see table5)	0.5 , 10	Atomic abs. & chemical	72 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C		Hemolysis, Icteric, Lipemic	
192	<b>Cortisol</b>	S,U(R&24hr) (see table5)	0.5 , 5	CLIA	24 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Avoid using of spironolacton,quinacrine,... and Abstain stress,...	Hemolysis, Icteric, Lipemic	For Dexamethasone suppression Test : Use two tablets Dexamethasone (1mg) at 11 PM and sampling time between 8-10 Am.
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
193	<b>C- peptide</b>	S	0.5	CLIA	72 hr.	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
194	<b>CPK</b>	S,PH,BF	0.3	Photometric	Daily	7 days at 2-8°C 1 month at-20°C (dark place)	at 2-8°C, -20°C	Avoid heavy physical activity prior test.	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle

195	<b>CPK - MB</b>	S,PH	0.3	Photometric	Daily	7 days at 2-8°C 1 month at-20°C (dark place)	at 2-8°C, -20°C	Avoid heavy physical activity prior test.	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
196	<b>Creatine</b>	U(R&24hr) (see table5)	10	Photometric	48 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
197	<b>Creatinine</b>	S,PE,PH, U(R&24hr) (see table5)	0.3	Photometric	Daily	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Avoid using of nephrotoxic drugs.	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
198	<b>Creatinine clearance</b>	S, U(R&24hr) (see table5)	0.2 , 3	Photometric	48 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Avoid using of nephrotoxic drugs.	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
199	<b>CRP</b>	S,BF	0.2	Imm.turb.	Daily	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
200	<b>CRP high sensitive</b>	S,BF	0.2	Imm.turb.	48 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
202	<b>Cryoglobulin</b>	S	2	Percipitation	5 days	Serum 2 days at RT	at RT	Fasting , Whole Blood drawn in a pre-warmed (37°C) tube and syringe.	Hemolysis, Icteric, Lipemic, Frozen, storage at 2-8°C	maintain whole blood at 37°C until Clotting is complete. If possible , Separate serum from cells using at 37°C centrifuge
203	<b>CSF electrophoresis (OCB)</b>	S & CSF	1 , 0.1	IEF	Weekly	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
204	<b>CSF</b>	CSF	1-2 ml	Chemistry Cell count Microbiology , Mycology	Daily + 7 days	The same time must be tested	at RT	Abstain using an antibiotic, Second tube sampling is appropriate		Sampling in three tube.

205	<b>Cyclosporine</b>	WB(E)	1	ECL	Daily	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
206	<b>Cyclosporine 2hrs.</b>	WB(E)	1	ECL	Daily	7 days at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
207	<b>Cystatine C</b>	S,PE	0.5	Photometric	Weekly	7 days at 2-8°C 2 months at-20°C	at 2-8°C, -20°C	Not recommended		avoid freeze/ thaw cycle
208	<b>Cystine</b>	U(R&24hr) (see table5)	5	TLC	4 days	1 month at-20°C CRITICAL FROZEN	at -20°C	Avoid using of penicillinamine few days prior to collection		
209										
210	<b>Cytology</b>	BF,U (formalin added)	10	Pap. staining	4 days	2 days at 2-8°C Prepared slide, 3 months at RT.	BF: at 2-8°C, Slide at RT	Not recommended		
211	<b>D-Dimer</b>	PC,PH	1	Imm.turb.	Daily	8hrs at 2-8°C 1 month at-20°C	at 2-8°C, -20°C	Not recommended		Centrifuge at 1500 rpm 15 min
212	<b>Delta aminolevulinic acid (D-ALA)</b>	U(R&24hr) (see table3)	10	Chemical	4 days	4 days at 2-8°C 1 month at-20°C (Dark place)	at 2-8°C, -20°C	Not recommended		Increased ALA concentration is associated with exposure to alcohol, lead, and a variety of other agents. Massive elevation of ALA occurs in the acute porphyrias and hereditary thyrosinemia.
213	<b>DHEA SO4</b>	S,PE,PH	0.5	CLIA	Daily	7 days at 2-8°C 2 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	Avoid freeze/ thaw cycles. This test must be performed immediately

	Test Name	Sample Type	Sample volume (ml)	Assay Method	Testing Date	Storage	Transport	Preparation Before sampling	Reject	Others
214	<b>Diazepam</b>	S	1	HPLC	4 days	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
215	<b>Dihydrotestosterone (DHT)</b>	S	0.5	Elisa	Weekly	3 hr. at 2-8°C 1 month at -20°C	at 2-8°C, -20°C			
216	<b>Digoxin</b>	S	0.3	Elisa	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Avoid using of neomycin,spironolactone,... 7 days prior to collection	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
217	<b>Diphtheria Ab (IgG)</b>	S	0.3	Elisa	By contact	7 days at 2-8°C, For longer time at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
218	<b>Direct Immuno fluorescence (DIF)</b>	Tissue Biopsy		IFA	Weekly	6 hrs. on ice, prepared slide, 3 months at -20°C	at -20°C	Not recommended		<b>Biopsy in normal saline on ice</b>
219	<b>Dopamine</b>	U(R&24hr) (see table5)	5	HPLC	Weekly	7 days at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Abstain from medications for 72 hours prior to collection		
220	<b>Du factor</b>	WB (E)	1	Hemagglut.	72 hr.	1 days at RT 7 days at 2-8°C	at 2-8°C	Not recommended		
221	<b>Dysmorphic RBC</b>	U(R) x3 samples interval half to one hour	10	Phase contrast microscope	Daily	Rapidly must be analyzed		Not recommended		
222	<b>Ear dis. Culture</b>	Ear dis.		Aerobic	Daily + 7 days	The same time must be tested	at RT	Avoid using antibiotic		
223	<b>EBV Ab (IgG)</b>	S,PE,PH,PC, BF,CSF	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
224	<b>EBV Ab (IgM)</b>	S,PE,PH,PC, BF,CSF	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle

225	<b>EBV PCR</b>	See table 2		PCR	5 days	See table 2	See table 2	Not recommended		
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	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
226	<b>ENA</b>	S,PE,PC,PH	0.2	CLIA	Daily	7 days at 2-8°C 1 months at -20°C	at 2-8°C, -20°C		Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
227	<b>Entamoeba histolytica Ab (IgG)</b>	S	0.3	Elisa	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
228	<b>Enterovirus PCR</b>	See table 2	1	PCR	Weekly	See table 2	See table 2	Not recommended		
229	<b>Eosinophil count</b>	WB,BF,U(R)	1	Direct smear Giemsa staining	Daily	The same day must be tested	at RT	Not recommended		
230	<b>Epinephrine</b>	U(R&24hr) (see table5)	5	HPLC	5 days	7 days at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Abstain from emotional and mental stress, medications for 3 days prior to collection.		
231	<b>Erythropoietin (EPO)</b>	S	0.5	Elisa	By contact	7 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
232	<b>ESR</b>	WB(C)	2	Automatic	Daily	4 hrs. at RT 12 hr. at 2-8°C	at RT, 2-8°C	Not recommended	Hemolysis, Icteric, Lipemic	
233	<b>Estradiol (E2)</b>	S,PE	0.5	CLIA	Daily	2 Days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
234	<b>Ethosuximide</b>	S	0.3	HPLC	4 days	7 Days at 2-8°C, 1 month at -20°	at 2-8°C, -20°C	Not recommended		

235	<b>Eye dis. culture</b>	Eye dis.		Aerobic	Daily+ 7 days	The same time must be tested	at RT	Avoid using antibiotic		
236	<b>Fasciola Ab (IgG)</b>	S	0.3	Elisa	weekly	2 Days at 2-8°C, 1 month at -20°	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
237	<b>Factor V Leiden (APCR)</b>	PC	1	Coagulation	Sat & Tue	2 hrs at RT 14 Days at -20°C 6 months at -80°C	at-20°C	Not recommended	Hemolysis	Avoid freeze/ thaw cycle. Be separated quickly / two times centrifugation is preferred
238	<b>Factor V Leiden mutation</b>	WB(E)	5	PCR	10 days	3 Days at RT, 1 week at 2-8°C	at RT, at 2-8°C	Not recommended	Hemolysis, Frozen , Cloting , Incorrect anticoagulant	
239	<b>Factor 2 , 5 , 7 , 8 , 9 , 10 , 11 , 12 , 13</b>	PC	1	Coagulation	Mondays (Weekly)	2 hr. at RT 14 Days at -20°C 6 months at -80°C	at-20°C	Abstain warfarin , Coumadin , estrogen,...10 days before test	Hemolysis	Avoid freeze/ thaw cycle. Be separated quickly / two times centrifugation is preferred
240	<b>FDP</b>	PC	1	Latex Agglut.	Daily	3 days at 2-8°C, 1 month at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	Centrifuge 2000– 2500 rpm at 15 min
241	<b>Ferritin</b>	S	0.3	CLIA	Daily	4 hr. at RT, 1 day at 2-8°C, 1 month at -20°C	at 2-8°C, -20°C	Avoid using of iron 7 days prior to collection	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle

242	<b>Fibrinogen</b>	PC	0.5	Coagulation	Daily	2 hr. at RT, 1 day at 2-8°C, 1 month at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	Be separated quickly
243	<b>Flurazepam</b>	S	1	HPLC	4 days	4 days at 2-8°C, 3 month at -20°C	at 2-8°C, -20°C	Not recommended		
244	<b>FNA (fine needle aspiration)</b>	Asp, Fluid	1ml Fluid or 3 slides	Pap. staining	Weekly	After fixation 3 months for prepared slides at RT.	at RT	Not recommended		Slides should be prepared at the same time and dried in air and fixed
245	<b>Folic Acid</b>	S	0.5	ECL	Daily	4 hr. at RT 2 days at 2-8°C 3 months at -20°C (out of light)	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
246	<b>Free BhCG</b>	S	0.4	ECL	4 days	4hr. at RT 2 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	Cold chain compliance during transport. avoid frozen samples after thawing.
247	<b>Free Cortisol</b>	U(R&24hr) (See table5)	5	RIA	48 hr.	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
248	<b>Free Estriol (Free E3)</b>	S	0.3	Elisa	48 hr.	8 hr. at RT 1 week at 2-8°C 1 month at -20 °C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
249	<b>Free Kappa</b>	S,U(R)	0.5 , 1	Imm.turb	Weekly	7 days at 2-8 °C	at 2-8°C, -20°C	Not recommended		avoid freeze/ thaw cycle
250	<b>Free Lambda</b>	S,U(R)	0.5 , 1	Imm.turb	Weekly	7 days at 2-8 °C 1 month at -20 °C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
251	<b>Free PSA</b>	S,PE,PH	0.5	CLIA	Daily	2 days at 2-8°C 3 months at -20 °C	at 2-8°C, -20°C	12hr fasting is recommended sampling 8-10 AM	Hemolysis, Icteric, Lipemic	Avoid exercise , stress and ejaculation in last night



252	<b>Free T3</b>	S,PE,PH,PC	0.5	ECL	Daily	7 days at 2-8 °c 1 month at -20°C	at 2-8°C, -20°C	Notice to drug interference such as Salicylates	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
253	<b>Free T4</b>	S,PE,PH,PC	0.5	ECL	Daily	7 days at 2-8 °c 1 month at -20°C	at 2-8°C, -20°C	Notice to drug interference such as Salicylates	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
254	<b>Free Testosterone</b>	S	0.5	Elisa	Daily	8 hr. at RT 7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
255	<b>FSH</b>	S,PC	0.5	CLIA	Daily	7 days at 2-8 °c 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
256	<b>FTA Ab</b>	S,CSF	0.5	CLIA	Weekly	1 day at RT 7 days at 2-8°C 6 months at -20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
257	<b>Fungi Direct smear &amp; culture</b>	Skin, Scalp, BF, ...			Daily/ monthly	The same day must be tested		Avoid using antibiotic & washing		
258	<b>GA 20210 mutation</b>	WB(E)	5	PCR	Weekly	1 day at RT 7 day at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, clotting, Incorrect anticoagulant	
259	<b>G6PD (Quan.)</b>	WB(E)	1	Chemical	Daily	1 day at RT 7 day at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Frozen, clotting, Incorrect anticoagulant	
260	<b>Gabapentin</b>	S	1	HPLC	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
261	<b>Galactomannan (Aspergillus Ag)</b>	S,BAL	0.5	Elisa	7 days	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	gross hemolysis , gross Lipemic	

262	<b>Gamma GT (GGT)</b>	S	0.3	Photometric	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting is recommended avoid using OCP	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
263	<b>Gastrin</b>	S,PE,PH	0.3	Elisa & RIA	Weekly	5 hr. at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Fasting . patient is not exposed to radioactive material few days before test.	Hemolysis, Icteric	avoid freeze/ thaw cycle
264	<b>GCT (glucose challenge test)</b>	S	0.5	Photometric	Daily	5 days at 2-8°C 6 months at -20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	1 fasting blood sample and 1 blood sample after 1 hr. ingestion 50 gr. Oral glucose
265	<b>GTT (glucose tolerance test)</b>	S	0.5	Photometric	Daily	5 days at 2-8°C 6 months at -20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	1 fasting blood sample and 4-5 blood sample after ingestion oral glucose (adults : 75gr , children 1 gr/kg body weight , maximum 75 gr) at 30,60,90, 120,180 min
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
266	<b>Glucose</b>	S,PE,BF, U(R&24hr) (See table5)	0.2	Photometric	Daily	5 days at 2-8 °c 6 months at -20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
267	<b>Growth hormone (GH)</b>	S	0.2	Elisa	Daily	2 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Fasting and avoid using clonidine , L-Dopa , glucose , exercise	Hemolysis	
268	<b>H.Pylori Ab (IgA)</b>	S,PE	0.5	Elisa	4 days	1 day at RT 7 Days at 2-8°C 6 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
269	<b>H.Pylori Ab (IgG)</b>	S,PE	0.5	Elisa	4 days	1 day at RT 7 Days at 2-8°C 6 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle

270	<b>H.Pylori Ab (IgM)</b>	S,PE	0.5	Elisa	Weekly	1 day at RT 7 Days at 2-8°C 6 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
271	<b>H.Pylori culture</b>	Tissue, biopsy		Aerobic	Daily + 2 weeks	The same time must be tested	In PBS at RT			
272	<b>H.Pylori PCR</b>	See table 2		PCR	8 days	See table 2	See table 2	Not recommended		
273	<b>H.Pylori Ag</b>	Stool	1 gr	Elisa	3 days	2 days at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Not recommended		
274	<b>HAMS Test</b>	S,WB(E)	5,5	Hemolysis	Daily	1 day at RT	at RT	Not recommended	Hemolysis, Icteric, Lipemic	
275	<b>Haptoglobin</b>	S,PE,PH	0.5	Nephelo metry	Weekly	1 Day at RT 7 Days at 2-8 °c 3 months at -20°C	at 2-8°C, -20°C	Notice use of androgen & sulfasalazine drug	Hemolysis	
276	<b>HAV Ab (IgM)</b>	S	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
277	<b>HAV Ab (Total)</b>	S	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
278	<b>Hb A2</b>	WB(E)	2	Capillary	48 hr.	7 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	
279	<b>Hb electrophoresis</b>	WB(E)	4	Capillary	48 hr.	7 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	

280	<b>Hb F</b>	WB(E)	4	Chemical , Capillary	48 hr.	7 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	
281	<b>HbA1C</b>	WB(E)	1	Capillary and Cobas Integra400	Daily	7 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	
282	<b>HBc Ab (IgM)</b>	S,PE,PH,PC	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	
283	<b>HBc Ab (Total)</b>	S,PE,PH,PC	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	
284	<b>HBe Ab</b>	S,PE,PH,PC	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	
285	<b>HBe Ag</b>	S,PE,PH,PC	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	
286	<b>HBs Ab</b>	S,PE,PH,PC	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
287	<b>HBs Ag</b>	S,PE,PH	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	
288	<b>HBV PCR (Qualitative)</b>	See table 2	1	PCR	72 hr.	See table 2	See table 2	Not recommended		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
289	<b>HBV PCR (Quantitative)</b>	See table 2	1	Real time PCR	72 hr.	See table 2	See table 2	Not recommended		
290	<b>HCV genotype</b>	See table 2	1	PCR	72 hr.	See table 2	at 2-8°C, -20°C	Not recommended		

291	<b>HCV Ab</b>	S	0.5	Elisa	Daily	7 days at 2-8 °c 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
292	<b>HCV Ag (western Blot)</b>	S,PE,PH	0.5	Immunoblot	10 days	7 days at 2-8 °c 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
293	<b>HCV PCR (Qualitative)</b>	See table 2	1	PCR	4 days	See table2	at 2-8°C, -20°C	Not recommended		
294	<b>HCV PCR (Quantitative)</b>	See table 2	1	Real time	4 days	See table2	at 2-8°C, -20°C	Not recommended		
295	<b>HDL cholesterol</b>	S,PE,PH	0.3	Photometric	Daily	24 hr. at RT 7 days at 2-8 °c 3 months at -20°C (dark place)	at 2-8°C, -20°C	Fasting , Avoid using clofibrate7 days prior sample collection	Hemolysis, Icteric, Lipemic	
296	<b>HDV Ab</b>	S,PE,PH,BF	0.5	Elisa	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
297	<b>HDV PCR</b>	See table 2	1	PCR	Weekly	See table 2	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
298	<b>HE4</b>	S,PE,PH	0.5	ECL	5 days	3 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
299	<b>Hematocrit</b>	WB(E)	0.5	Cell counter	Daily	4 hr. at RT 24 hr. at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen	
300	<b>Hemosiderin</b>	U(R) (Formalin 10% added 1/10)	10	Slide staining	Weekly	3 days at 2-8°C Prepared slide 3 months at RT	at 2-8°C	First-morning collection is preferred		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
301	<b>Hemoglobin</b>	WB(E)	0.5	Cell counter	Daily	4 hr. at RT 24 hours at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen	

302	<b>HEV Ab</b>	S	0.5	Elisa	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric	
303	<b>HIV Ab (I&amp;II)</b>	S,BF	0.5	Elisa	Daily	5 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
304	<b>HIV Ag ( western Blot)</b>	S,PE,PH	0.5	Western blot	2 Weeks	5 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
305	<b>HIV P24 Ag</b>	S,BF	0.3	Elisa	Daily	5 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
306	<b>HIV PCR (Qualitative)</b>	See table 2	1	PCR	Weekly	See table 2	at 2-8°C, -20°C	Not recommended		
307	<b>HIV PCR (Quantitative)</b>	See table 2	1	Real time	Weekly	See table 2	at 2-8°C, -20°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	
308	<b>HLA B27</b>	WB(E)	3	Cytotoxicity	Tue	5 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	
309	<b>HLA B35</b>	WB(E)	3	Cytotoxicity	By contact	5 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	
310	<b>HLA B5</b>	WB(E)	3	Cytotoxicity	Tue	5 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
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311	<b>HLA B51</b>	WB(E)	3	Cytotoxicity	Tue	5 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant
312	<b>HLA B52</b>	WB(E)	3	Cytotoxicity	Tue	5 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant
313	<b>HLA B7</b>	WB(E)	3	Cytotoxicity	Tue	5 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant
314	<b>HLA B8</b>	WB(E)	3	PCR	Tue	5 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant
315	<b>HLA class I (ABC) (PCR)</b>	WB(E)	10	PCR	Weekly	5 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant
316	<b>HLA class II (DQ) (PCR)</b>	WB(E)	10	PCR	Weekly	5 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant
317	<b>HLA class II (DR) (PCR)</b>	WB(E)	10	PCR	Weekly	5 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant
318	<b>Homocysteine</b>	S,PE,U(R)	0.5 ,10	Enzyme colorimetry	4 days	3 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Lipemic
319	<b>HPV PCR &amp; Typing (Genotyping)</b>	See table 2		PCR,REBA	Weekly	See table 2	at 2-8 °c	Not recommended	

	Test Name	Sample Type	Sample volume (ml)	Assay Method	Testing Date	Storage	Transport	Preparation Before sampling	Reject	Others
320	<b>Hydroxy Indole Acetic Acid (SHIAA)</b>	U(R&24hr) (See table5)	10	Elisa	Weekly	7 days at 2-8°C 2 weeks at -20°C ( dark place)	at 2-8°C, -20°C	<p>Foods rich in serotonin (avocados, bananas, eggplant, pineapple, plums, tomatoes, walnuts) , chocolate, mango ,date , grapefruit, melon, watermelon ,kiwi ,nuts ,plantain and medications that may affect metabolism of serotonin for example: Imipramine , isoniazid, methyl dopa, ... must be avoided at least 72 hr. before and during collection of urine.</p> <p>Increased HIAA: Acetaminophen , acetanilide, caffeine, coumaric acid, diazepam, (Valium® ), ephedrine , fluorouracil , glycerol, guaiacolate ,melphalan(alkeran®) , neparoxen, nicotine,phenacetin,phenmetrazine, phenobarbital , phentolamine, rauwolfia, reserpine .</p> <p>Decreased HIAA: Aspirin , chlopromazin (Thorazine), corticotrophin,dehydroxyphenylacetic acid, ethanol,gentisic acid, homogentisic acid,hydrazine derivatives, imipramine(Tofranil®), isocarboxazid(Marplan), keto acids,levodopa,MAO inhibitors,metheenamine,methyl dopa perchloreprazine,phenothiazines,pro mazine,promethazine(Mepergan®).</p>		If possible , patients should abstain from medications , over-the-counter drugs, and herbal remedies for at least 72 hours prior to the test.
321	<b>HSV Ab (IgG)</b>	S,PE,PH, BF,CSF	0.5	CLIA	Daily	24 hr. at RT 7 days at 2-8 °c 3 months at -20 °c	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric	avoid freeze/ thaw cycle
322	<b>HSV Ab (IgM)</b>	S,PE,PH, BF,CSF	0.5	CLIA	Daily	24 hr. at RT 7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric	avoid freeze/ thaw cycle
323	<b>HSV PCR</b>	See table 2	1	PCR	Daily	See table 2	at 2-8°C, -20°C	Not recommended		



	Test Name	Sample Type	Sample volume (ml)	Assay Method	Testing Date	Storage	Transport	Preparation Before sampling	Reject	Others
324	<b>HTLV Ab (I&amp;II)</b>	S,PE,PH, BF,CSF	0.5	Elisa	4 days	Less than 5 days at 2-8°C for longer time at -20 °c	at 2-8°C, -20°C	Not recommended		
325	<b>HTLV PCR</b>	See table	1	PCR	10 days	See table 2	at 2-8°C, -20°C	Not recommended		
326	<b>Hydatid Ab (IgG) (Anti-Echino)</b>	S,PE	0-5	Elisa	Weekly	1 week at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
327	<b>HVA</b>	U(R&24hr) (See table5)	20	HPLC	By contact	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	abstain using of medication 3 days prior to collection		
328	<b>Ionized Calcium (Ca++)</b>	S,BF, U(R&24hr)	0.5	Photometric	Daily	8 days at 2-8°C For longer time at-20°C	at 2-8°C, -20°C	Fasting is recommended Avoid using of tourniquet.	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
329	<b>IgA</b>	S,PE,PH, Tear,Saliva	0.3	Imm.turb.	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
330	<b>IgE</b>	S,PE,PH	0.3	Imm.turb.	72 hr.	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
331	<b>IgG</b>	S,PE, CSF	0.3	Imm.turb.	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
332	<b>IgG index</b>	S & CSF	1,1	Imm.turb.	48 hr.	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
333	<b>IgG subclass 1</b>	S	0.3	Nephelometry	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle

334	<b>IgG subclass 2</b>	S	0.3	Nephelometry	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
335	<b>IgG subclass 3</b>	S	0.3	Nephelometry	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
336	<b>IgG subclass 4</b>	S	0.3	Nephelometry	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
337	<b>IgM</b>	S,PE,PH	0.3	Imm.turb.	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
338	<b>IGF-1</b>	S	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
339	<b>IGFBP3</b>	S	0.5	Elisa	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting is recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
340	<b>Immuno electrophoresis</b>	S,U(24hr) (See table5)	1,10	Capillary	S:Daily U:weekly	S: 7 days at 2-8°C, 1 month at -20°C U(24hr): 5 days at 2-8°C 1 month at -70°C	at 2-8°C, -20°C	Not recommended		No preservative
341	<b>Immuno histochemistry (IHC)</b>	Biopsy,Block			15 days	Minimum 1 year after fixation (tissue) or block preparation .	at RT	Not recommended		
342	<b>Inhibin B</b>	S	1	Elisa	By contact	2 days at 2-8°C, 1 month at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	
343	<b>Inhibin A</b>	S	0.5	Elisa	5 days	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	

344	<b>Insulin</b>	S	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting is recommended. Abstain using of Cimetidine , Ethanol , Chlorpropamide , ... few days prior sample collection.	Hemolysis, Icteric, Lipemic	Be separated quickly
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
345	<b>Iron</b>	S,PH	0.3	Photometric	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting , Abstain iron compound 7 days prior sample collection and OCP , sampling should be done preferably at 8-10 am.	Hemolysis, Icteric, Lipemic	Avoid repeated freeze/thaw cycles, patient's age and sex
346	<b>Jak-2 mutation PCR</b>	WB(E)	5	PCR	10 days	24 hr. at RT 5 days at 2-8°C	at 2-8°C	Not recommended		
347	<b>Kala azar Ab (IgM)</b>	S,BF	0.3	IFA	4 days	5 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
348	<b>Kala azar Ab (Total)</b>	S,BF	0.3	IFA	4 days	5 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
349	<b>Lactate</b>	PE,CSF	1	Chemical	Daily	1 day at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Blood sampling without tourniquet . Abstain using of cefotaxim.	Hemolysis, Icteric, Lipemic	Separated prior 20 min.
350	<b>Lamotrigin</b>	S	0.5	HPLC	5 days	7 day at 2-8°C 3 month at -20°C	at 2-8°C, -20°C	Not recommended		
351	<b>LDH</b>	S,BF,CSF	0.3	Photometric	Daily	2 days at RT 4 days at 2-8°C 1 month at -20°C	at 2-8°C	Abstain using of codeine,clofibrate,... prior few days sample collection.	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
352	<b>LDL cholesterol</b>	S,PH	0.3	Photometric	Daily	5 days at 2-8°C 1 month at -20°C (dark places)	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
353	<b>LE cell</b>	WB	10	Microscopic	48 hr.	The same time must be tested		Not recommended		

354	<b>Lead (Pb)</b>	WB(E)	2	Atomic Abs.	5 days	5 days at RT 7 days at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Not recommended	Incorrect anticoagulant, clotting	
355	<b>Leishman body</b>	Skin, BMA, wound dis.	4 Sides	Slide staining (Geimsa)	Daily	Unlimited after fixation at RT	at RT	Avoid using of tropical cream 3 days prior to collection		

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
356	<b>Leptin</b>	S,PE	0.5	Elisa	By Contact	2 days at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Fasting		
357	<b>LH</b>	S,PE	0.5	CLIA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	Avoid repeated freeze/thaw cycles
358	<b>Lipase</b>	S,PH	0.5	Photometric	Daily	5 day at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting		
359	<b>Lipoprotein electrophoresis</b>	S	0.5	Capillary	By contact	10 days at 2-8°C	at 2-8°C	Fasting	Hemolysis, Icteric, Lipemic	
360	<b>Listeria Ab (IgG)</b>	S	0.2	IFA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
361	<b>Listeria Ab (IgM)</b>	S	0.2	IFA	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
362	<b>Lithium</b>	S	1	ISE	Daily	1 day at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Specimen are commonly drawn approximately 12 hr. after last dose of lithium taken. Notice using of diuretics , metronidazole, flouxitine,....drugs .	Hemolysis	
363	<b>LKM Ab</b>	S	0.3	IFA	72 hr.	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
364	<b>Lorazepam</b>	S	1	HPLC	Weekly	7 day at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		

365	<b>LPA</b>	S	0-5	Immu. Turb.	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
366	<b>Lupus anti coagulant</b>	PC	1	DRVVT , APTT-LA	Daily	4 hr. 2-8°C 1 month at -20°C 18 mths at -70°C	at 2-8°C, -20°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	Avoid repeated freeze/thaw cycles. Be separated quickly . two times centrifugation is preferred./to test LAC(DRVVT & apt-la) is done
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
367	<b>Macroprolactin</b>	S	1	CLIA	48 hr.	2 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Sample collecting 3 hrs after awake . Abstain sexual activity and stress 2 days test .Avoid using estrogen , Insulin,... few days before test .	Hemolysis , Icteric , lipemic	
368	<b>Magnesium (Mg)</b>	S,PH,BH, U(R&24hr) (See table5)	0.5,1	Photometric	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis , Icteric , lipemic	Avoid repeated freeze/thaw cycles.
369	<b>Malaria parasite</b>	WB(E)	0.5	Slide staining (Geimsa)	Daily	Unlimited after fixation at RT	at RT	Not recommended		
370	<b>MCV</b>	WB(E)	0.5	Cell counter	Daily	4 hr. at RT 24 hr. at 2-8°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	
371	<b>MDA</b>	S	1	Chemical	By contact	5 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
372	<b>Measles Ab (IgG)</b>	S,BF,CSF	0.3	Elisa	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis , Icteric , lipemic	Avoid repeated freeze/thaw cycles.
373	<b>Measles Ab (IgM)</b>	S,BF,CSF	0.3	Elisa	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis , Icteric , lipemic	Avoid repeated freeze/thaw cycles.

374	<b>Measles PCR</b>	See table		PCR	10 days	See table 2	See table 2	See table 2	See table 2	See table 2
375	<b>Mercury (Hg)</b>	WB(E), U(24hr) (See table5)	2	Atomic abs.	Weekly	5 days at RT 7 days at 2-8°C 1 month at -20°C	at RT, at 2-8°C	Not recommended	Clotting, Incorrect anticoagulant	Urine Hg: By contact
376	<b>Metanephrines</b>	U(R&24hr) (See table5)	5	Elisa	5 days	7 days at 2-8°C 1 month at -20°C (dark place)	at 2-8°C, -20°C	Abstain from emotional and mental stress , medications for 3 days prior to collection.		Avoid repeated freeze/thaw cycles
377	<b>Mono test</b>	S	0.5	Agglutination	Daily	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
378	<b>Morphine</b>	U(R)	2	Photometric	Daily	7 days at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Notice using of codeine drugs,...		
379	<b>MSUD (DNPH)</b>	U(R)	10	Chemical & TLC	Weekly	1 day at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Not recommended		
380	<b>MTHFR A 1298 C mutation</b>	WB(E)	5	PCR	10 days	3 days at RT 7 days at -20°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	
381	<b>MTHFR A 677 T mutation</b>	WB(E)	5	PCR	10 days	3 days at RT 7 days at -20°C	at 2-8°C	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	
382	<b>Methotrexate (MTX)</b>	S	1	HPLC	10 days	1 days 2-8°C 3 months -20°C (dark place)	at 2-8°C, -20°C	Not recommended		
383	<b>Mucopolysaccharides (MPS)</b>	U(R)	10	Chemical	Weekly	1 month at -20°C CRITICAL FROZEN	at -20°C	Not recommended		

384	<b>Mumps Ab (IgG)</b>	S,CSF	0.5	Elisa	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	Avoid repeated freeze/thaw cycles
385	<b>Mumps Ab (IgM)</b>	S,CSF	0.5	Elisa	Weekly	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	Avoid repeated freeze/thaw cycles
386	<b>Mumps PCR</b>	See table 2	See table 2	PCR	Weekly	See table 2	See table 2	See table 2	See table 2	See table 2
387	<b>Mycology</b>	Hair , skin , nail , CSF , blood , urine , sputum , vaginal discharge , body fluids	---	Direct & culture	Direct : 24hr Culture : 1 months	RT	RT	1-Avoid of cleaning 2-Don't washing for three days 3-Don't use of ointment and gel		

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
388	<b>Mycobacterium Ab (IgA)</b>	S,BF, Sputum	0.5	Elisa	By contact	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
389	<b>Mycobacterium Ab (IgG)</b>	S,BF, Sputum	0.5	Elisa	By contact	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
390	<b>Mycobacterium Ab (IgM)</b>	S,BF, Sputum	0.5	Elisa	By contact	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
391	<b>Mycobacterium culture</b>	Sputum, tissue,BF,...		Petroff	Daily + 2 months	2 days at 2-8 °C	at 2-8°C	Not recommended		
392	<b>Mycobacterium Direct smear</b>	Sputum, tissue,BF,...		Ziehl Neelsen	Daily + 2 days	2 days at 2-8 °C	at 2-8°C	Not recommended		
393	<b>Mycobacterium PCR</b>	See table 2		PCR	6 days	See table 2	at 2-8°C	See table 2		

394	<b>Mycoplasma hominis culture</b>	Vaginal , uretral,urine, semen,...		PPLO broth	Daily + 5 months	6 hr. at RT 1 day at 2-8°C in transport media	At 2-8°C in transport media	Abstain using antibiotic		
395	<b>Mycoplasma Pneumonia Ab(IgG)</b>	S,PE,PH	0.3	Elisa	Weekly	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
396	<b>Mycoplasma Pneumonia Ab(IgM)</b>	S,PE,PH	0.3	Elisa	Weekly	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
397	<b>Mycoplasma Pneumonia PCR</b>	See table 2		PCR	10 days	See table 2	at 2-8°C, -20°C	Not recommended		
398	<b>Myoglobin</b>	U(R)	10	Chemical	72 hr.	3 days at 2-8 °c 1 month at -20°C	at 2-8°C, -20°C	Not recommended		
399	<b>Nasal dis. Culture</b>	Nasal dis.		aerobic	Daily + 48 hr.	The same time must be tested	at 2-8°C	Abstain using antibiotic		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
400	<b>Nitazepam</b>	S	1	HPLC	4 days	5 days at 2-8°C, 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
401	<b>Norepinephrine</b>	U(24hr) (See table5)	5	HPLC	Weekly	7 days at 2-8°C, 3 months at-20°C	at 2-8°C, -20°C	Abstain from emotional and mental stress , medications for 3 days prior to collection.		
402	<b>Normetanephrine</b>	U(24hr) (See table5) PH: 2-3	5	Elisa	Weekly	7 days at 2-8°C, 1 month at-20 °c (dark places)	at 2-8°C, -20°C	Abstain from emotional and mental stress , medications for 3 days prior to collection.		
403	<b>NGAL</b>	U(R),S,PE	2, 0-5	Elisa	Weekly	1 day at 2-8°C, 2 months at-20°C	at 2-8°C, -20°C	Not recommended		
404	<b>NMO (Anti aquaporin-4)</b>	S,PE,CSF	1	IFA	Weekly	7 days at 2-8°C, 1 month at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic, Icteric	Avoid repeated freeze/thaw cycles



405	<b>NMDA Panel</b>	S,PH,CSF	0.5	15 days		7 days at 2-8°C, 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic, Icteric	
406	<b>Osmolality</b>	S ,Stool , U(R&24hr) (see table5)	1 , 1gr , 5	Refrac.	3 days	7 days at 2-8°C, 2 months at-20°C	at 2-8°C, -20°C	Not recommended		Stool must be frozen at once
407	<b>Osmotic fragility</b>	WB(H)	2	Hemolysis	48 hr.	1 day at RT	at RT	Fasting	Hemolysis, frozen, clotting, incorrect anticoagulant	
408	<b>Osteocalcin</b>	S,PE	0.5	Elisa	10 days	3 days at 2-8°C, 2 months at-20°C	at 2-8°C, -20°C	Not recommended		
409	<b>Oxalate</b>	U(R&24hr) (see table5) pH:1.5-2	10	Photometric	4 days	1 week at 2-8°C 1 month at -20°C	at 2-8°C, -20°C	Abstain ingestion of vitamin C, orange , lemon , grapefruit,tomatoes, spinach,strawberry,...3 days prior to collection .		
410	<b>Oxazepam</b>	S	1	HPLC	72 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
411	<b>Oxidant / antioxidant</b>	S	0.5	Elisa	By contact	2 days at 2-8°C 2 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, frozen, clotting, incorrect anticoagulant	
412	<b>PAI mutation</b>	WB(E)	5	PCR	12 days	3 days at RT 7 months at-20°C	at 2-8°C	Not recommended		
413	<b>Pap smear (cytology)</b>	Liquid bases		LBC	3 days	7 days at RT	at RT	Abstain sexual intercourse before 3 days . Avoid using vaginal cream ,... before few days.		
414	<b>Pap smear (cytology)</b>	Prepared slides		Betsda	3 days	Unlimited after fixation , at RT	at RT	Abstain sexual intercourse before 3 days . Avoid using vaginal cream ,... before few days.	Hemolysis, Icteric, Lipemic	

415	<b>PAPP-A</b>	S	0.5	ECL	3 days	7 days at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
416	<b>Parvovirus B19 Ab (IgG)</b>	S,BF,CSF	0.5	Elisa	15 days	7 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
417	<b>Parvovirus B19 Ab (IgM)</b>	S,BF,CSF	0.5	Elisa	15 days	7 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
418	<b>Parvovirus PCR</b>	See table 2		PCR	10 days	See table 2	See table 2	Not recommended		
419	<b>Pathergy test</b>	Skin test			24 hr.			Not recommended		
420	<b>Paul Bunnell</b>	S	0.5	Agglutination	48 hr.	5 days at 2-8°C 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
421	<b>TSH</b>	Dried blood sample	5 spots	ELISA	Weekly	at 2-8°C after 4 hr. drying	at 2-8°C	Not recommended		
422	<b>Pericardial fluid culture</b>	Pericardial fluid	5	Aerobic & Ana	4 days	The same time must be tested	at RT	Avoid using antibiotic		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
423	<b>Phenobarbital</b>	S	1	HPLC	Daily	2 days at RT 7 days at 2-8°C 2 weeks at -20°C	at 2-8°C, -20°C	Not recommended		
424	<b>Phenylalanine</b>	PE,DBS	1	HPLC	3 days	Fresh plasma: 1 day at 2-8°C, 1 month at -20°C DBS with cover: 1 week at 2-8°C 3 months at -20°C	at 2-8°C, -20°C	Fasting	Hemolysis	DBS: see sampling guideline

425	<b>Phenytoin</b>	S	1	HPLC	2 days	4 hr. at RT, 4 days at 2-8 °c 1 months at-20°c	at 2-8°C, -20°C	Abstain using salicylates before few days		
426	<b>Phosphorus (Ph)</b>	S,PH, U(R&24hr)	0.5	Photometric	Daily	4 hr. at RT, 4 days at 2-8°c 3 months at-20°c	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	Avoid repeated freeze/thaw cycles
427	<b>PKU</b>	U(R)	10	Chemical & TLC	3 days	4 days at 2-8°c 1 months at-20°c	at 2-8°C, -20°C	Not recommended		
428	<b>Pleural Fluid culture</b>	Pleural fluid	5	Aerobic & Ana	Daily / 5 days	The same time must be tested	at 2-8°c	Avoid using antibiotic		
429	<b>Platelet aggregation study</b>	PC	3	Aggregometry	72 hr.	2 hr. at RT, 4 days at 2-8°c , 2 weeks at -20°c	at 2-8°C, -20°C	Not recommended		
430	<b>PML/RARA PCR AML-3</b>	WB(E), BMA(E)	5	PCR	10 days	1 day at 2-8°c	at 2-8°c	Not recommended	Hemolysis, clotting, frozen, incorrect anticoagulant	
431	<b>Pneumonia Ab (IgG)</b>	S	0.5	Elisa	15 days	7 days at 2-8°c 3 months at-20°c	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
432	<b>Pneumonia Ab (IgG2)</b>	S	0.5	Elisa	15 days	7 days at 2-8°c 3 months at-20°c	at 2-8°C, -20°C	Not recommended		
433	<b>Porphyries</b>	U(R&24hr) (See table5)	10	Chemical	72 hr.	2 days at 2-8°c 3 months at-20°c (dark places)	at 2-8°C, -20°C	Take and storage in dark container		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
434	<b>PCT (Post coital test)</b>	Vaginal dis.	0.5	Direct smear	Daily	Rapidly must be tested		Not sexual intercourse for 3 days		

435	<b>Potassium (K)</b>	S,BF, U(R&24hr) (see table5)	0.5	ISE	Daily	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Blood collecting without tourniquet	Hemolysis, Icteric, Lipemic	
436	<b>Pregnancy test</b>	U	10	Latex agglut.	Daily	2 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
437	<b>Primidone</b>	D	0.5	HPLC	72 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended		
438	<b>Progesterone</b>	S,PE	0.5	ECL	48 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	Avoid freeze/thaw cycle
439	<b>Prolactine (PRL)</b>	S,PE	0.5	CLIA	Daily	2 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Fasting is recommended. Sample collecting 3 hr. after awake and between 8-10 AM.	Hemolysis, Icteric, Lipemic	Abstain sexual activity and stress 2 days before test . Avoid using estrogen , insulin, ,..... few days before test
440	<b>Procalcitonin (PCT)</b>	S,PE,PH	0.5	ECL	48 hr.	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	gross Hemolysis, Icteric	
441	<b>Protein C</b>	PC	1	Coagulation	72 hr.	2 hr. at RT 1 month at-20°C CRITICAL FROZEN	at 2-8 °C	Abstain warfarin, Coumadin, estrogen,...10 days before test	Hemolysis, Icteric, Lipemic, Incorrect anticoagulant.	Avoid repeated freeze/thaw cycle , be separated quickly / Two times centrifugation is preferred.
442	<b>Protein S</b>	PC	1	Coagulation	72 hr.	2 hr. at RT 1 month at-20 °C CRITICAL FROZEN	at 2-8 °C	Abstain warfarin, Coumadin, estrogen,...10 days before test	Hemolysis, Icteric, Lipemic, Incorrect anticoagulant.	Avoid repeated freeze/thaw cycle , be separated quickly / Two times centrifugation is preferred
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>

443	<b>Prostatic dis . culture</b>	Prostatic dis.		Aerobic	Daily + 72 hr.	The same time must be tested		Avoid using antibiotic		
444	<b>Protein electrophoresis (SPEP)</b>	S, U(R&24hr) (see table5)	1,10	Capillary	5 days	7 days at 2-8°C 1 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
445	<b>Pro BNP-NT</b>	S	1	ECL	Daily	6 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
447	<b>Protein Total</b>	S,BF,U,CSF	0-3	Photometric	Daily	7 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
448	<b>PSA</b>	S,PE,PH	0-5	CLIA	Daily	2 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Fasting is recommended, Abstain prostate exam or biopsy , Heavy exercise , ejaculation 2 days before test	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
449	<b>PT (Prothrombin Time)</b>	PC	1	Coagulation	Daily	2 hr. at 2-8°C 2 weeks at-20°C	at RT , at 2-8 °C	Notice use warfarin, Coumadin, Heroine,...	Hemolysis	Be separated quickly
450	<b>PTH</b>	S,PE	0-5	CLIA, ECL	Daily	2 days at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	Be separated quickly
451	<b>Pyruvate</b>	WB on cold Perchloric acid (0.6 N)	1	Chemical	Daily	After preparation: 1 week at 2-8°C 3 months at-20°C	at 2-8°C, -20°C	Sample collecting with cold tube & syringe	Hemolysis	Be separated quickly
452	<b>RPR</b>	S	0.5	Agglutination	Daily	7 days at 2-8°C 3 months at-20°C	at RT	Not recommended		avoid freeze/ thaw cycle
453	<b>Reducing substance</b>	U(R) , Stool	10 , 2gr	Chemical	Daily	2 days at 2-8°C 3 weeks at -20°C	at 2-8°C, -20°C	Not recommended		
454	<b>Reticulocyte</b>	WB(E)	0.5	Supravital stain.	Daily	6 hrs. at RT, 3 days at 2-8°C	at RT , at 2-8°C	Not recommended	Hemolysis, Icteric, Lipemic, Clotting, Frozen, Incorrect anticoagulant	

	Test Name	Sample Type	Sample volume (ml)	Assay Method	Testing Date	Storage	Transport	Preparation Before sampling	Reject	Others
455	<b>Renin</b>	PE	1	CLIA	Daily	4 weeks at -20°C <b>CRITICAL FROZEN</b>	at -20°C	Fasting recommended, Notice use blood pressure drugs , diuretics and collecting sample position (upright & supine) . Normal sodium diet (100-200 mEq/day) for at least three days. Take no medications known to affect renin-aldosterone system.	Hemolysis, Icteric, Lipemic, Incorrect anticoagulant	avoid freeze/thaw cycle, sample collection in silicon tube and avoid refrigerated centrifuge. sample must be separated and performed quickly or frozen immediately
456	<b>RF (quantitative &amp; qualitative)</b>	S,PE,PH	0.5	Imm.turb.	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
457	<b>Rubella Ab (IgG)</b>	S,PE,BF,CSF	0.5	CLIA	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
458	<b>Rubella Ab (IgM)</b>	S,PE,BF,CSF	0.5	CLIA	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
459	<b>Rubella PCR</b>	See table 2		PCR	8 days	See table 2	at 2-8°C, -20°C	Not recommended		
460	<b>Scabies (Gal)</b>	Skin scratching sample		Direct smear	Daily	The same day must be tested.	at RT	Not recommended		
461	<b>Scotch test</b>	Perianal sample	2 slides	Direct smear	Daily	The same day must be tested.	at RT	Not recommended		
462	<b>Selenium</b>	S	1	Atomic abs.	Weekly	2 days at RT, 7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
463	<b>Semen Analysis</b>	Semen		CASA	Daily	The same time must be tested.	at RT	Not recommended	avoid prolonged time after ejaculation	

464	<b>Semen Culture</b>	Semen		Aerobic	72 hr.	The same time must be cultured	at RT	Avoid using antibiotic	avoid prolonged time after ejaculation	
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
465	<b>Semen Fructose</b>	Seminal plasma	0.5	Chemical	Daily	3 months at -20°C CRITICAL FROZEN	at -20°C	Not recommended		
466	<b>SGOT (AST)</b>	S,PE,PH,CSF	0.5	Photometric	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Notice use hepatotoxic drugs	Hemolysis, Incorrect anticoagulant, Lipemic	avoid freeze/thaw cycle
467	<b>SGOT (ALT)</b>	S,PE,PH,CSF	0.5	Photometric	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Notice use hepatotoxic drugs	Hemolysis, Incorrect anticoagulant, Lipemic	avoid freeze/thaw cycle
468	<b>SHBG</b>	S,PE	0.5	ECL / Elisa	Weekly	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/thaw cycle
469	<b>Sickle prep</b>	WB (E)	0.5	Physical observe	Daily	2 days at 2-8°C,	at 2-8°C	Not recommended	Frozen, clotting, Incorrect anticoagulant, Hemolysis	
470	<b>Sodium (Na)</b>	S,BF,Stool, U(R&24hr) (See table5)	0.5	ISE	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
471	<b>Special stain</b>	Slides or Block	1 slide	Slide staining	Weekly	at RT	at RT			
472	<b>Sputum culture</b>	Sputum		Aerobic	72 hr.	2 hrs. at RT, 1 days at 2-8°C	at 2-8°C	Avoid using antibiotic		

473	<b>Stone analysis (Calculi Analysis)</b>	Urinary tract stone		Chemical	48 hr.	at RT	at RT	Not recommended		
474	<b>Stool Culture</b>	Stool	1 gr.	Aerobic	Daily + 48 hr.	Unpreservative: 2 hr. at RT preservative: 2 days at RT	With preservative (carry blair media) : 2 days at RT	Avoid using antibiotic	Frozen sample	
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
475	<b>Stool exam</b>	Stool	1 gr	Formalin ether, Direct smear	Daily	Bloody & mucosal sample the same time must be tested. Others: 3 days at RT, 1 month at 2-8°C. Added formalin 10%, stable 3 yrs.	at RT , at 2-8°C	Not recommended	Frozen sample, Specimens containing barium, oil, or urine.	
476	<b>Stool Fat</b>	Stool	0.5 gr	Sudan Black III	Daily	1 hr. at RT, 4 days at 2-8°C, 2 weeks at -20°C,	at RT , at 2-8°C	Not recommended		
477	<b>Stool occult blood (OB)</b>	Stool	1 gr	Mayer	Daily	1 hr. at RT, 1 days at 2-8°C, 3 days at -20°C	at RT , at 2-8°C	Abstain ingestion of red meat, turnip, radish, kind of cabbages ,carrot, fruits (Melon, watermelon, cantaloupe,...), citrus, vitamin C, tart extracts and etc. <b>3 days prior sample</b> collection and Iron, Anti inflammatory non steroidal drugs such as brufen, naproxen, aspirin, colchicine, Indomethacin, corton,... <b>7 days prior sample</b> collection		For FIT (Fecal Immunochemical Test) dont needed preparation.
478	<b>Sucrose hemolysis test</b>	WB(E)&S and same samples with isoblood group.	WB: 2.0 S: 5.0	Hemolysis	Daily	1 day at RT	at RT	Not recommended	Hemolysis, Clotting, Frozen Incorrect anticoagulant,	Be separated quickly
479	<b>Sugar chromatography</b>	U(R)	10	TLC	Weekly	4 days at 2-8°C, 1 months at -20°C	at 2-8°C, -20°C	Not recommended		



480	<b>Sweat test</b>	Sweat	200 mg	Automation	Daily	1 day at 2-8°C	at 2-8°C	Not recommended		
481	<b>Synovial fluid culture</b>	Synovial fluid	2	Aerobic& An.	Daily + 72 hr.	The same time must be tested.	at RT	Avoid using antibiotic		
482	<b>T3</b>	S,PE,PH	0.3	ECL	Daily	1 day at RT, 7 days at 2-8°C, 1 months at -20°C	at 2-8°C, -20°C	Notice to hormonal treatment & gestation	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
483	<b>T3 up</b>	S,PE,PH	0.3	CLIA	Daily	1 day at RT, 7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	For FTI Test , T3up must be analyzed
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
484	<b>T4</b>	S,PE,PH	0.3	ECL	Daily	1 day at RT, 7 days at 2-8°C, 1 months at -20°C	at 2-8°C, -20°C	Notice to hormonal treatment & gestation	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
485	<b>Tacrolimus</b>	WB(E)	2	RIA	8 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Clotting, Frozen Incorrect anticoagulant	
846	<b>Testosterone</b>	S,PE,PH	0.5	CLIA	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	The best time for sampling is 6-10 am. Fasting is recommended.	Hemolysis, Icteric, Lipemic	
487	<b>Tetanus Ab (IgG)</b>	S	0.3	Elisa	By contact	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	Be separated quickly. Avoid freeze/thaw cycle
488	<b>Throat Culture</b>	Throat swab		Aerobic culture	Daily + 48 hr.	The same time must be tested.	at RT	Avoid using antibiotic		
489	<b>Thyroglobulin (Tg)</b>	S	0.5	CLIA	Daily	2 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Abstain from doing this test after FNA form thyroid, thyroid surgery and treatment with radioactive substance.	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
490	<b>Thyroglobulin Ab (Anti-Tg)</b>	S,PE,PC	0.5	CLIA	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	Be separated until 20-30 min. avoid freeze/thaw cycle

491	<b>Thyroid Microsomal Ab (Anti-TPO)</b>	S,PE,PC	0.5	ECL	72 hr.	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	Be separated until 20-30 min. avoid freeze/thaw cycle
492	<b>Thyroxin binding globulin (TBG)</b>	S	0.5	Elisa	By contact	1 days at 2-8°C, 1 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/thaw cycle
493	<b>TIBC</b>	S	1	Photometric	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric, Lipemic	avoid freeze/thaw cycle
494	<b>Tissue pathology</b>	Tissue			5 days	Unlimited after Fixation at RT	at RT	Not recommended		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
495	<b>Topamax (Topiramate)</b>	S	1	HPLC	Weekly	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
496	<b>Total Lipid</b>	S	1	Photometric	Daily	10 days at 2-8°C	at 2-8°C, -20°C	Fasting	Forzen sample	Be separated quickly
497	<b>Toxicology</b>	WB,BF	10,50	TLC&chemical	48 hr.	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
498	<b>Toxocara Ab (IgG)</b>	S,PE,PH,BF	0.3	Elisa	Weekly	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/thaw cycle
499	<b>Toxoplasma Ab (IgG)</b>	S,PE,BF,CSF	0.5	CLIA,IFA	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
500	<b>Toxoplasma Ab (IgM)</b>	S,PE,BF,CSF	0.5	CLIA,IFA	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	

501	<b>Toxoplasma IgG Avidity</b>	S,PE,PC	0.2	CLIA	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	Toxo (IgM) & Toxo (IgG) must be requested
502	<b>Toxoplasma PCR</b>	See table 2	0.5	PCR	3 days	See table 2	See table 2			
503	<b>Transferrin</b>	S,PE,PH	0.3	Imm.turb	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	avoid freeze/thaw cycle
504	<b>Transferrin saturation</b>	S,PE,PH	0.3	Photometric	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
505	<b>Triglycerides (TG)</b>	S, PH	0.3	Photometric	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Fasting 12 hrs. Abstain using alcohol before 3 days.	Hemolysis, Icteric	avoid freeze/thaw cycle

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
506	<b>Troponin I</b>	S,PE,PH	0.5	CLIA	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
507	<b>Trypsin Activity</b>	Stool	0.5 gr	Chemical	24 hr.	7 days at 2-8°C, CRITICAL FROZEN	at -20°C	Not recommended	Specimens containing barium.	
508	<b>TSH</b>	S,PE,PH	0.5	ECL	Daily	5 days at 2-8°C, 5 months at -20°C	at 2-8°C, -20°C	Notice to hormonal & chemotherapy drugs	Hemolysis, Icteric, Lipemic	
509	<b>TSH Receptor Ab</b>	S	0.5	ECL	Daily	3 days at 2-8°C, 1 month at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
510	<b>TTG Ab (IgA)</b>	S	0.3	Elisa	48 hr.	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	avoid freeze/ thaw cycle

511	<b>TTG Ab (IgG)</b>	S	0.3	Elisa	48 hr.	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Lipemic	avoid freeze/ thaw cycle
512	<b>Tuberculin test (PPD or Mantua)</b>	Skin test			72 hr.	48-72 hr. after injection must be reported		Not recommended		
513	<b>Tyrosine</b>	PE	1	HPLC	72 hr.	1 days at 2-8°C, 1 months at -20°C	at 2-8°C, -20°C	Fasting. Abstain using from androgen drugs, glucagon, vitamin C before few days.	Hemolysis	Be separated quickly
514	<b>Urea</b>	S,BF, U(R&24hr) (see table5)	0.3	Photometric	Daily	5 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Nephrotoxic drugs will change blood urea level.	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
515	<b>Ureaplasma Urealyticum culture</b>	BF		PPLO broth	48 hr. + 5 days	6 hrs. at RT, 1 day at 2-8°C in transport media, 1 month at -70°C	at 2-8°C	Avoid using antibiotic		
516	<b>Urethral dis. Culture</b>	Urethral dis.		Aerobic	48 hr. + 5 days	The same time should be tested		Avoid using antibiotic		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
517	<b>Uric acid</b>	S,PE,BF, U(R&24hr) (see table5)	0.5	Photometric	Daily	S: 7 days at 2-8°C, 3 months at -20°C U: 7 days at 2-8°C, 2 weeks at -20°C	at 2-8°C, -20°C	Abstain using salicylates before few days.	Hemolysis, Icteric, Lipemic	avoid freeze/ thaw cycle
518	<b>Urine Culture</b>	U(R)	10	Aerobic	48 hr.	1 days at 2-8°C	2 hr. at 2-8°C	Avoid using antibiotic		
519	<b>Urine analysis</b>	U(R)	10		Daily	2 hr. at RT, 1 days at 2-8°C	at 2-8°C	Not recommended		
520	<b>Vaginal culture</b>	Vaginal dis.		Aerobic & An.	Daily + 48 hr.	The same time should be tested.		Avoid using antibiotic		

521	<b>Valproic acid</b>	S,PE,PH	0.5	ECL	Daily	7 days at 2-8°C, 4 months at -20°C	at 2-8°C, -20°C	Not recommended		
522	<b>VMA</b>	U(R&24hr) (see table5)	10	Column chrom , GCMS	4 days	7 days at 2-8°C with pH:2-4, 7 days at -20°C	at 2-8°C	Abstain using coffee, cacao, chocolate, blood pressure drugs, guanidine analogue drugs, mono amine oxidase inhibitors and etc. 3 days prior to urine collection.		
523	<b>VZV Ab (IgG)</b>	S,BF,CSF	0.3	Elisa	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
524	<b>VZV Ab (IgM)</b>	S,BF,CSF	0.3	Elisa	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
525	<b>VZV PCR</b>	See table2		PCR	5 days	See table2	See table 2	Not recommended		
526	<b>VDRL</b>	S,BF,CSF	0.3	Flocculation	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis	
527	<b>Vitamin A</b>	S	0.5	HPLC	Weekly	7 days at 2-8°C, 3 months at -20°C (dark place)	at 2-8°C, -20°C	Fasting. Sample collecting is done in cold tube, syringe. Abstain using alcohol 24 hrs. before sampling	Hemolysis, Icteric	Be separated in refrigerated centrifuge.
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
528	<b>Vitamin B12 (Cobalamin)</b>	S	0.5	ECL	Daily	2 days at 2-8°C, 1 months at -20°C (dark place)	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric	avoid freeze/ thaw cycle
529	<b>Vitamin C</b>	S (Centrifuge immediately)	0.5	Chemical	Weekly	1 hr. at RT, 2 Weeks at 2-8°C with preservative (20 mg oxalic acid in 1 ml serum) 2 months at -20°C. (dark place)	at -20°C	Fasting preferred. Abstain using contraceptive drugs.	Hemolysis, Icteric	Be separated quickly. The oxalic acid preservative may interfere with other tests

530	<b>Vitamin D (25OH)</b>	S,PE,PH	0.5	CLIA	Daily	1 day at RT , 7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Fasting	Hemolysis, Icteric	avoid freeze/thaw cycle
531	<b>Vitamin E</b>	S	0.5	HPLC	weekly	7 days at 2-8°C, 3 months at -20°C (dark place)	at 2-8°C, -20°C	Fasting, abstain from alcohol for 24 hrs.		
532	<b>VLDL</b>	S,PH		Calculation	Daily					
533	<b>Von Willebrand Factor (VWF)</b>	PC	3	ELFA,Elisa	72 hr.	6 hr. at RT, 2 weeks at -20°C	at RT , at -20°C	Abstain warfarin, Coumadin, estrogen,...10 days before test	Hemolysis, Icteric, Lipemic, Incorrect anticoagulant.	Avoid repeated freeze/thaw cycle , be separated quickly
534	<b>VWF Activity (Ri-cof)</b>	PC	3	Aggregometry	72 hr.	2 hr. at RT, 4 days at 2-8°C , 2 weeks at -20°C	at RT , at -20°C	Abstain warfarin, Coumadin, estrogen,...10 days before test	Hemolysis, Icteric, Lipemic, Incorrect anticoagulant.	Avoid repeated freeze/thaw cycle , be separated quickly
535	<b>WBC</b>	WB(E)	1	Cell counter	Daily	1 day at RT , 3 days at 2-8°C	at RT , at -20°C	Not recommended	Hemolysis, Clotting, Frozen Incorrect anticoagulant,	
536	<b>Neonatal Galactosemia (GALT)</b>	Dried blood sample	5 spots	ELISA	Weekly	at 2-8°C after a 4 hr. drying	at 2-8°C			
537	<b>WBC crossmatch</b>	S	1	Cytotoxicity & Flow cytometry	Tue	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
538	<b>Widal Test</b>	S,BF	1	Agglutination	Daily	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended	Hemolysis, Icteric, Lipemic	
539	<b>Wound culture</b>	Wound dis.		Aerobic & An.	Daily + 48 hr.	The same time must be tested	at RT	Avoid using antibiotic		

540	<b>Wright Test</b>	S,BF,CSF	0.5	Agglutination	24 hr.	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Not recommended		
541	<b>Warfarin resistance gene mutation (CYP2C9,VKORC1)</b>	WB(E)	5	PCR	10 days	2 days at 2-8°C	at 2-8°C	Not recommended	Hemolysis, Clotting, Frozen, Incorrect anticoagulant	
543	<b>Zinc (Zn)</b>	S,BF U(R&24hr) (see table5)	0.5,20	Atomic abs.	48 hr.	7 days at 2-8°C, 3 months at -20°C	at 2-8°C, -20°C	Upon the advice of their physician, patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and nonessential over-the-counter medications for one week prior to sample draw.	Hemolysis, Icteric, Lipemic	
	<b>Drug abuse</b>									
544	<b>Acetaminophen</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
545	<b>Adalate</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
546	<b>Adriamycin</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
547	<b>Alprazolam</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
548	<b>Arsenic</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
549	<b>Amitriptyline</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
550	<b>Amphetamines</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
551	<b>Aspirin (salicylate)</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		

552	<b>Atropin</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
553	<b>Baclofen</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
554	<b>Barbiturates</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
555	<b>Biperiden</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
556	<b>Brufen</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
557	<b>Buprenorphine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
558	<b>Bupropion</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
559	<b>Buspirone</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
560	<b>Cafeine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
561	<b>Canabis (THC)</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
562	<b>Carbamates</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
563	<b>Carbamazepine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
564	<b>Chlopromazine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
565	<b>Chlordiazepoxide</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
566	<b>Cholorinated</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
567	<b>Clobazam</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		



	Test Name	Sample Type	Sample volume (ml)	Assay Method	Testing Date	Storage	Transport	Preparation Before sampling	Reject	Others
568	<b>Clomipramine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
569	<b>Clonazepam</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
570	<b>Co Hb</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
571	<b>Cocaine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
572	<b>Codeine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
573	<b>Coumarine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
574	<b>Crystal</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
575	<b>Cyanide</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
576	<b>Diphenhydramine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
577	<b>Desipramine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
578	<b>Diazepam</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
579	<b>Diclofenac</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
580	<b>Dicyclomine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
581	<b>Diphenoxylate</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
582	<b>Dipyridamole</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
583	<b>Diltiazem</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
584	<b>Doxine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
585	<b>Droperidol</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
586	<b>Enalapril</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		

587	<b>Ephedrine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
588	<b>Ecstasy (MDMA)</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
589	<b>Ethambutol</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
590	<b>Ethanol</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
591	<b>Ethosuximide</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
592	<b>Flufenazine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
593	<b>Fluoxetine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
594	<b>Flupenthixol</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
595	<b>Flurazepam</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
596	<b>Fluvoxamine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
597	<b>Furosemide</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
598	<b>Gabapentin</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
599	<b>Glibenclamide</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
600	<b>Haloperidol</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
601	<b>Heparine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
602	<b>Heroin</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
603	<b>Hydroxyzine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		

604	<b>Hyoscine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
605	<b>Imipramine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
606	<b>Indomethacine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
607	<b>Isocarboxazid</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
608	<b>Gelofen</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
609	<b>Keppra (Levetiracetam)</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
610	<b>Krack</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
611	<b>Lamotrigin</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
612	<b>Loratidine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
613	<b>Lorazepam</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
614	<b>Lovatidine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
615	<b>LSD</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
616	<b>Maprotiline</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
617	<b>Mefenamic acid</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
618	<b>Meprobamates</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
619	<b>Mercury</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		

620	<b>Metformin</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
621	<b>Meth amphetamines</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
622	<b>Methadone</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
623	<b>Methanol</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
624	<b>Metoclopramide</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
625	<b>Metoral</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
626	<b>Moclobemide</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
627	<b>Monoxide carbon (CO)</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
628	<b>Morphine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
629	<b>Nalorphine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
630	<b>Naltrexone</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
631	<b>Naproxen</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
632	<b>Neurogesic</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
633	<b>Nicotine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
634	<b>Nitrazepam</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
635	<b>Nortriptyline</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
636	<b>Olanzapine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		

637	<b>Opium</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
638	<b>Oxazepam</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
639	<b>Oxyphenbutazone</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
640	<b>Perphenazine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
641	<b>Pethidine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
642	<b>Phencyclidine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
643	<b>Phenobarbital</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
644	<b>Phenytoin</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
645	<b>Phosphide</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
646	<b>Phosphorus</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
647	<b>Pimozide</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
648	<b>Piroxicam</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
649	<b>Primidone</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
650	<b>Risperidone</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
651	<b>Promethazine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
652	<b>Pyrazinamide</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		

653	<b>Pyrethroid</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
654	<b>Temgesic</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
655	<b>Theophylline</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
656	<b>Thiethylprazine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
657	<b>Thioridazine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
658	<b>Trolamine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
659	<b>Tranlycypromine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		

	<b>Test Name</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Assay Method</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Preparation Before sampling</b>	<b>Reject</b>	<b>Others</b>
660	<b>Trazodone</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
661	<b>Tremadol</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
662	<b>Trifluoperazine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
663	<b>Trimipramine</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		
664	<b>Warfarin</b>	WB,BF, U(R&24hr.)	5,5	TLC	4 days	7 days at 2-8°C, 2 months at -20°C	at 2-8°C, -20°C	Not recommended		



**Table2: Molecular Genetic List**

Test Name	Method	Detection Procedure	Sample Type	Sample volume (ml)	Testing Date	Storage	Transport	Reject
<b>Adenovirus</b>	Qualitative	Conventional	Plasma (EDTA), Serum, Throat, Urine, eye swabs or Nasopharyngeal	1 , 2 swabs	Weekly	7 days at 2-8°C, 1 month at -20°C	at 2-8°C,-20°C	Incorrect anticoagulant (heparin), Calcium alginate swabs
<b>Alpha(<math>\alpha</math>) and Beta(<math>\beta</math>) thalassemia screening test</b>	PCR	Conventional & Sequencing	WB(EDTA)	3	Weekly	24hr. at 2-8°C	at 2-8°C,-20°C	
<b>AZF</b>	PCR	Conventional	WB(EDTA)	2	Weekly	2 days at 2-8°C, Long storage at -20°C	at 2-8°C	Tubes with heparin

<b>BK virus</b>	Qualitative Quantitative	Conventional/ Real-time	Plasma(EDTA), Serum ,CSF, Urine, ...	1	72 hr.	8 hr. at RT, 3 days at 2-8°C, 1 month at -20°C	at 2-8°C (preferred)	Incorrect anticoagulant (heparin), Formalized fluids, Clot sample, gross Hemolysis
<b>Brucella sp.</b>	Qualitative	Conventional	Whole blood (EDTA), CSF, BM, Lymph node aspiration, BF,....	1	8 days	1 day at RT, 3 days at 2-8°C, 1 month at -20°C	at 2-8°C (preferred)	Incorrect anticoagulant (heparin), Clot sample, Hemolysis
<b>Connexin26</b>	PCR	Sequencing	WB(EDTA)	1	Monthly	2 days at 2-8°C, Long storage at -20°C	at 2-8°C	Tubes with heparin
<b>CMV</b>	Qualitative Quantitative	Conventional/ Real-time	CSF, Whole blood(EDTA), Tissue, Respiratory samples, Amniotic fluid, Urine, Body fluids, Genital lesion or swab, Serum, PE, BM	Tissue 5 mm, others 1 ml Urine 10 ml For Quantitative assay only WB(EDTA) is accepted.	Weekly	8 hr. at RT, 3 days at 2-8°C, 1 year at -20°C	Tissue : Frozen Others : at 2-8°C (preferred)	Incorrect anticoagulant (heparin), Formalized fluids, Tissue (formalin fixes), Calcium alginate tipped , wood and gel media swab
<b>Test Name</b>	<b>Method</b>	<b>Detection Procedure</b>	<b>Sample Type</b>	<b>Sample volume (ml)</b>	<b>Testing Date</b>	<b>Storage</b>	<b>Transport</b>	<b>Reject</b>
<b>Chlamydia pneumonia</b>	Qualitative	Conventional	Respiratory samples, Pleural fluid	2	By contact	1 day at RT, 2 weeks at 2-8°C, 1 month at -20°C	at 2-8°C (preferred)	Calcium alginate tipped, wood and gel media swab
<b>Chlamydia trachomatis</b>	Qualitative	Conventional	Respiratory samples, Urine (first), urethra & Vaginal Swab, Ocular dis.	2	7 days	1 day at RT, 1 week at 2-8°C, 3 months at -20°C	at 2-8°C (preferred)	Calcium alginate tipped, wood and gel media swab
<b>EBV</b>	Qualitative Quantitative	Conventional/ Real-time	CSF, Serum, whole blood(EDTA), Tissue, Plasma(EDTA), Saliva, Body fluids, BM	Tissue 5mm , others 1ml	Weekly	8 hr. at RT, 3 days at 2-8°C, 1 year at -20°C	at 2-8°C (preferred)	Incorrect anticoagulant (heparin), Hemolysis, Clot sample (WB), Formalized sample



<b>Entrovirus</b>	Qualitative Quantitative	Conventional/ Real-time	Whole blood(E), Serum, Plasma (E), CSF, Respiratory samples, Stool, Swab sample, Body fluids, Urine	1	Weekly	8 hr. at RT, 3 days at 2-8°C, 3 months at -20°C	at 2-8°C (preferred) or -20°C	anticoagulant(heparin), Formalinized fluids, Calcium alginate tipped , wood and gel media swab, Clot sample
<b>H.Pylori</b>	Qualitative	Conventional	Tissue, Gastric juice, Dental bacterial plaque, sputum, stool,...	Tissue 5mm, stool 5 gr. Others 1 ml	Weekly	6 hr. at RT, 1 day at 2-8°C, 1 month at -20°C	at 2-8°C (preferred)	Formalinized sample
<b>HBV</b>	Qualitative Quantitative	Conventional/ Real-time	Plasma (EDTA), Serum	2 ml	7 days	3 day at RT, 1 week at 2-8°C, 6 weeks at -20°C	at 2-8°C (preferred) or -20°C	Incorrect anticoagulant (heparin)
<b>HCV</b>	Qualitative Quantitative Genotyping	Conventional/ Real-time	Plasma (EDTA), Serum	2 ml	7 days	4 hr. at RT, 2 days at 2-8°C, 3 days at -20°C, 4 months at -70°C	at 2-8°C (preferred)	Incorrect anticoagulant (heparin)
<b>HDV</b>	Qualitative	Conventional	Plasma (EDTA), Serum	1 ml	10 days	6 hr. at RT, 3 days at 2-8°C, 1 month at -20°C	at 2-8°C (preferred)	Incorrect anticoagulant (heparin)

Test Name	Method	Detection Procedure	Sample Type	Sample volume (ml)	Testing Date	Storage	Transport	Reject
<b>HIV</b>	Qualitative Quantitative	Conventional/ Real-time	Plasma (EDTA), Serum, CSF, Body fluid, Amniotic fluid...	1 ml	8 days	3 day at RT, 1 week at 2-8°C, 6 weeks at -20°C	at 2-8°C (preferred)	Incorrect anticoagulant (heparin)
<b>HPV</b>	Qualitative Genotyping	Conventional/ Real-time/REBA	Tissue, Cervical swab, Papule & Vesicle swab, Thin prep...	Tissue 5 mm Others: 1 ml	5 days	3 day at RT, 3 weeks at 2-8°C, 3 months at -20°C	at 2-8°C (preferred)	Frozen , Formalin fixed tissue, Using anti fungal vaginal cream & contraceptive gel, Douching

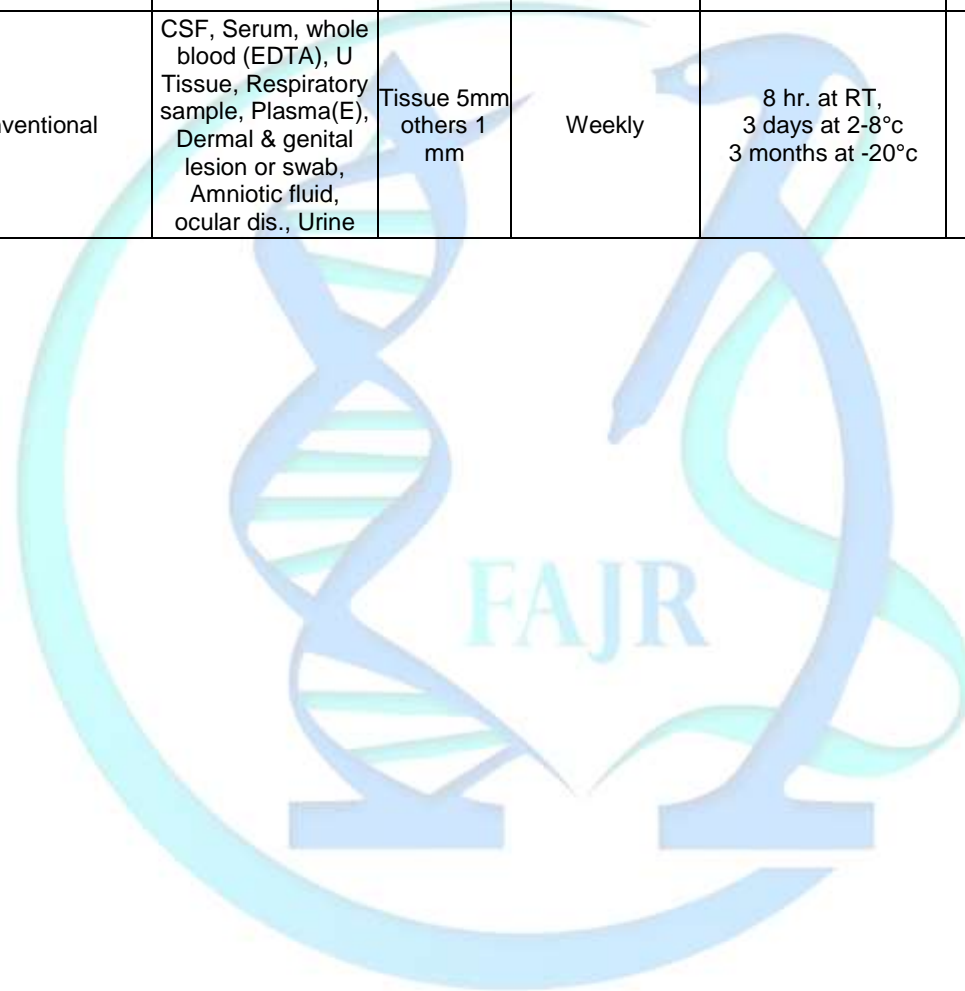
<b>HSV</b>	Qualitative Quantitative	Conventional/ Real-time	CSF, Serum, Whole blood (EDTA), Tissue, Respiratory sample, Plasma (E), Dermal & Genital (vaginal & cervix) lesion or swab, Amniotic fluid, Thin prep, Ocular dis.	1 ml	72 hr.	8hr. at RT, 3 days at 2-8°C, 3 months at -20°C	Tissue : Frozen Others : at 2-8°C (preferred)	Incorrect anticoagulant (heparin), Formalinized fluids Tissue (formalin fixes), Clot (WB) Calcium alginate tipped ,wood and gel media swab
<b>HTLV</b>	Qualitative	Conventional	WB(EDTA),CSF,...	1 ml	8 days	2 days at RT, 3 weeks at 2-8°C, 2 months at -20°C	at 2-8°C (preferred)	Incorrect anticoagulant (heparin), Frozen sample, Clotting
<b>JC virus</b>	Qualitative	Conventional	Plasma(EDTA), Serum, CSF, Urine,...	1 ml	8 days	8hr. at RT, 3 days at 2-8°C, 1 month at -20°C	at 2-8°C (preferred)	
<b>Measles</b>	Qualitative	Conventional	Throat & nasopharynx & nasal swab Cord blood (EDTA), Saliva, CSF, Amniotic fluid, Urine...	1 ml	6 days	3 days at 2-8°C, 1 months at -40°C (with transport media)	at 2-8°C (preferred) or -40°C	Incorrect anticoagulant (heparin), Formalinized fluids Calcium alginate tipped ,wood and gel media swab
<b>Mumps</b>	Qualitative	Conventional	Buccal & Oral swab, Saliva, Plasma(EDTA), CSF, Saliva, Urine, Amniotic fluid,...	2 swab (cotton), Fluids: 1 ml Urine 50 ml (4 days after symptom onset)	Weekly	1hr. at RT, 1 day at 2-8°C, 1 week at -70°C	at 2-8°C , swab & urine sediman (15 min at 2500 at 4°C) in VTM (phosphate buffer saline with 1% BSA, 0.5% gelatin, 2% serum)	Incorrect anticoagulant (heparin), Formalinized fluids Calcium alginate tipped ,wood and gel media swab

Test Name	Method	Detection Procedure	Sample Type	Sample volume (ml)	Testing Date	Storage	Transport	Reject
<b>Mycobacterium tuberculosis (TB)</b>	Qualitative	Conventional	Resoirstory sample, Tissue(Fresh & block), BF, Gastric juice, Urine, stool,...	1 ml, Tissue 5 mm, stool 5 gr	72 hr.	1 week at 2-8°C, 2 weeks at -20°C	2-8°C(preferred)	Blood samples, Formalin added sample

<b>Mycoplasma pneumonia</b>	Qualitative	Conventional	Respiratory samples, Throat and Nasopharynx swab, CSF, Pleural fluid	1 ml	By contact	1 day at RT, 3 days at 2-8°C, 1 month at -20°C	2-8°C(preferred)	Formalinized sample
<b>Neisseria gonorrhoea</b>	Qualitative	Conventional	Urethra, vaginal & Cervix swab, Urine (first),... Urethra , vaginal & Cervix with transport media	2 ml	By contact	1 day at RT, 1 week at 2-8°C, 1 month at -20°C	at 2-8°C (preferred)	Swab without transport media, Bloody grossly samples
<b>Paternity Test</b>	PCR	Fluorescent PCR	Blood or CVS (Chorionic villus)	2 cc / 25 mg	5 days	2 days at 2-8°C, Long storage at -20°C	at 2-8°C	Tubes with heparin
<b>Parvovirus B19</b>	Qualitative	Conventional	Plasma (EDTA), Serum, CSF, Tissue, BMA, Body fluids, Amniotic fluid, Vesicle fluid, WB (EDTA), Paraffin block	1 ml	Weekly	8 hr. at RT, 3 days at 2-8°C 6 months at -20°C	at 2-8°C (preferred)	Incorrect anticoagulant (heparin), Formalinized fluids. Lysed sample.
<b>QF test</b>	PCR	Fluorescent PCR	Amniotic fluid or CVS (Chorionic villus)	5 cc / 25 mg	4 days	2 days at 2-8°C, Long storage at -20°C	at 2-8°C (preferred)	Bloody and Tubes with heparin
<b>Rubella</b>	Qualitative	Conventional	Plasma (EDTA), Body fluids, CSF, Cord blood (EDTA), Saliva, Amniotic fluid, Throat swab, Urine, WB(EDTA)	1 ml	Weekly	8 hr. at RT, 1 day at 2-8°C 1 week at -20°C	at 2-8°C (preferred)	Incorrect anticoagulant (heparin), Formalinized fluids Calcium alginate tipped ,wood and gel media swab
<b>Sex determination (SRY detection)</b>	PCR	Real-Time PCR	WB(EDTA)	10	5 days	2 days at 2-8°C, Long storage at -20°C	at 2-8°C (preferred)	Bloody and Tubes with heparin

Test Name	Method	Detection Procedure	Sample Type	Sample volume (ml)	Testing Date	Storage	Transport	Reject
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<b>Toxoplasma</b>	Qualitative	Conventional	Serum, whole blood (EDTA), BF, Amniotic fluid, CSF, Tissue, Ocular fluid,...	Tissue 5mm others 1 ml	Weekly	8 hr. at RT, 3 days at 2-8°C 3 months at -20°C	at 2-8°C (preferred)	Incorrect anticoagulant (heparin), Hemolysis, Clot sample(WB), Formalinized sample
<b>VZV</b>	Qualitative	Conventional	CSF, Serum, whole blood (EDTA), U Tissue, Respiratory sample, Plasma(E), Dermal & genital lesion or swab, Amniotic fluid, ocular dis., Urine	Tissue 5mm others 1 mm	Weekly	8 hr. at RT, 3 days at 2-8°C 3 months at -20°C	Tissue : Frozen Others : at 2-8°C (preferred)	Incorrect anticoagulant (heparin), Formalinized fluids, Tissue (formalin fixes), Calcium alginate tipped ,wood and gel media swab, Clot WB



**Table3: Cytogenetic List**

Test Name	Method	Detection Procedure	Sample Type	Sample volume (ml)	Testing Date	Storage	Transport	Reject
<b>Karyotype</b>	Cell Culture	Microscopic	WB(H) , Amniotic Fluid	Blood : 3-5 Amnion : two syringe 10ml	14-20 days	at 2-8°C	at 2-8°C	Blood: Lysis , Clot Amnion: Turbid , Bloody
<b>FISH</b>	Cell Culture	Fluorescent Probe	WB(H) , Amniotic Fluid	at least 5 ml	7 days	at 2-8°C	at 2-8°C	Blood: Lysis , Clot Amnion: Turbid , Bloody
<b>SCMA</b>	Specific Staining	Fluorescent Probe	Seminal Fluid	at least 2 ml	10 days	at 37°C	at RT	avoid prolonged time after ejaculation
<b>SDFA</b>	Specific Staining	Fluorescent Probe	Seminal Fluid	at least 2 ml	10 days	at 37°C	at RT	avoid prolonged time after ejaculation



FAJR

**Table4: Metabolic Panel List**

Test Name	Method	Detection Procedure	Sample Type	Sample volume (ml)	Testing Date	Storage	Transport	Reject
<b>Acyl Carnitine Panel study</b>	Semi-quantitative	LC-MS/MS	Dried Blood Sample (DBS)	5 spots	Weekly	at 2-8 °c after 4 hr. drying	at 2-8°C	
<b>Acyl Carnitine Profile</b>	Quantitative	LC-MS/MS	Plasma Urine(R) Amniotic fluid	1	Weekly	1 days at 2-8°C, 1 month at -20°C, For a long time at -70°C	Freeze	avoid freeze/thaw cycle
<b>Amino Acid Profile</b>	Quantitative	LC-MS/MS	Plasma Urine(R) Amniotic fluid	1	Weekly	1 days at 2-8°C, 1 month at -20°C, For a long time at -70°C	Freeze	avoid freeze/thaw cycle
<b>Fatty acid disorders</b>	Quantitative	GCMS	Urine(R)	7	Weekly	1 days at 2-8°C, 1 month at -20°C, For a long time at -70°C	Freeze	avoid freeze/thaw cycle
<b>Organic acid disorders</b>	Quantitative	GCMS	Urine(R)	7	Weekly	1 days at 2-8°C, 1 month at -20°C, For a long time at -70°C	Freeze	avoid freeze/thaw cycle
<b>Succinyl Acetone</b>	Quantitative	LC-MS/MS	Plasma Urine(R) Amniotic fluid	1	Weekly	1 days at 2-8°C, 1 month at -20°C, For a long time at -70°C	Freeze	avoid freeze/thaw cycle
<b>Very Long Chain Fatty Acid (VLCFA)</b>	Quantitative	LC-MS/MS	Plasma Urine(R) Amniotic fluid	1	Weekly	1 days at 2-8°C, 1 month at -20°C, For a long time at -70°C	Freeze	avoid freeze/thaw cycle

**Table5: Urine 24hr preservative**

Analyte	refrigerate	Freeze	Hcl 6 mol/L	Boric acid	Acetic acid	Others additives
Albumin	√	√		√		
Aldosterone	√	√	√	√		
Amino acids	√	√	√	√		Toluene
δ Aminolevulonic acid		√	√		√	Protection from sunlight
Amylase	√					Adjustment of pH to > 7.0
B2 microglobuline	√	√				
Bence Jones Protein	√			√		
Calcium			√			
Ceruloplasmin	√			√		
Chloride	√			√		
Citrate	√	√	√	√		Toluene
Cortisol	√	√		√	√	
Copper			√			
Creatine	√	√		√		
Creatinine	√	√	√	√		
Cystine		√	√			Toluene
Epinephrine		√	√		√	
Na & K	√			√		
Glucose				√		
Homovanillic acid			√		√	
5 HIAA	√		√	√		Protection from sunlight
Immunoelectrophoresis	√	√				
17 Ketosteroids			√	√	√	
Mg	√		√			
Metanephrines			√		√	
Mercury						Nitric acid
Micro Albumin	√	√		√		

<b>Normetanephrines</b>		√	√		√	
<b>Norepinephrine</b>		√	√		√	
<b>Osmolality</b>		√				
<b>Oxalate</b>	√		√			
<b>Phosphorus</b>	√	√	√	√		
<b>Porphyrines</b>	√	√				Protection of sunlight
<b>Protein total</b>	√			√		
<b>Urea nitrogen</b>	√			√		

