

Request Form Viral Family PCR and panel detection

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Name.....Age.....HN.....AN.....Ward/OPD/Hospital.....

Diagnosis.....SPECIMEN: 1. CSF 2. EDTA blood 3. Clot blood 4. Serum 5. Urine 6. Other.....

Request by.....โทร.....โทรสาร.....email:.....

รายการตรวจ Family PCR	Associated syndrome	ชนิดตัวอย่างส่งตรวจ เรียงตามลำดับของกลุ่มอาการ	รายงานผล	ราคา (บาท)	Request (√)
Astroviruses RT-PCR+Seq	<i>Gastrointestinal</i>	Stool	3 วันทำการ*	2200	
Arenaviruses Nested PCR+Seq	Encephalitis/ Acute Febrile/ Hemorrhagic fever	CSF/EDTA blood/EDTA blood	3 วันทำการ*	2200	
Coronaviruses Nested PCR+Seq (2Rx)	Febrile respiratory/ Gastrointestinal	Nasal wash/Stool	3 วันทำการ*	3500	
Flaviviruses Nested PCR+Seq	Encephalitis/ Acute Febrile/ Hemorrhagic fever	CSF/EDTA blood/EDTA blood	3 วันทำการ*	2200	
Enteroviruses Nested PCR+Seq	Acute Febrile/ Gastrointestinal/ Meningitis/Common cold (Rhino)	EDTA blood/Stool/CSF/ Nasal waah	3 วันทำการ*	2200	
Paramyxoviruses Nested PCR+Seq	Encephalitis/ Acute Febrile/ Hemorrhagic fever	CSF/EDTA blood/ EDTA blood	3 วันทำการ*	2200	
Rhabdoviruses Nested PCR+Seq	Encephalitis/ Acute Febrile/ Hemorrhagic fever	CSF/EDTA blood/ EDTA blood	3 วันทำการ*	2200	
Lyssaviruses Nested PCR+Seq	Encephalitis/ Acute Febrile/ Hemorrhagic fever	CSF/EDTA blood/ EDTA blood	3 วันทำการ*	2200	

รายการตรวจ Family PCR	Associated syndrome	ชนิดตัวอย่างส่งตรวจ เรียงตามลำดับของกลุ่มอาการ	รายงานผล	ราคา (บาท)	Request (√)
Seadornaviruses Nested PCR+Seq	Encephalitis/ Acute Febrile	CSF/EDTA blood	3 วันทำการ*	2200	
Hantaviruses Nested PCR+Seq	Encephalitis/ Acute Febrile/ Hemorrhagic fever/ Febrile respiratory	CSF/EDTA blood/ EDTA blood/ Nasal wash	3 วันทำการ*	2200	
Alphaviruses Nested PCR+Seq	Encephalitis/ Acute Febrile	CSF/EDTA blood	3 วันทำการ*	2200	
Phleboviruses Nested PCR+Seq	Encephalitis/ Acute Febrile/ Hemorrhagic fever	CSF/EDTA blood/ EDTA blood	3 วันทำการ*	2200	
Henipaviruses Nested PCR+Seq	Encephalitis/ Acute Febrile/ Febrile respiratory	CSF/EDTA blood/ Nasal wash	3 วันทำการ*	2200	
Retroviruses Nested PCR+Seq	AIDS	EDTA blood	3 วันทำการ*	2200	
Influenzas A RT-PCR + Seq	Febrile respiratory	Nasal Wash	3 วันทำการ*	2200	
Herpesviruses 1-8 Nested PCR+Seq (2Rx)	Encephalitis/	CSF	3 วันทำการ*	3500	
Bocaviruses Nested PCR+Seq	Acute Febrile/ Gastrointestinal/Febrile respiratory	EDTA blood/ Stool/Nasal wash	3 วันทำการ*	2200	
Orthopoxviruses RT-PCR + Seq	<i>Encephalitis</i>	CSF	3 วันทำการ*	2200	
Parapoxviruses Nested PCR+Seq	Skin lesions	wound	3 วันทำการ*	2200	
Adenoviruses Nested PCR+Seq	Gastrointestinal/ Encephalitis/Febrile respiratory	Stool/ CSF/Nasal wash	3 วันทำการ*	2200	

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Polyomaviruses Nested PCR+Seq	Encephalitis (JC)	CSF	3 วันทำการ*	2200	
Filovirus RT-PCR + Seq (5Rx)	Acute Febrile/ Hemorrhagic fever	EDTA blood	3 วันทำการ*	6600	
Orbivirus RT-PCR + Seq (4Rx)	Acute febrile	EDTA blood	3 วันทำการ*	4400	
Bunyavirus RT-PCR + Seq (3Rx)	Encephalitis/ Hemorrhagic fever	CSF/EDTA blood	3 วันทำการ*	4400	
Respiratory viruses Real-time PCR- Seegene	Respiratory illness 16 viruses	Nasopharyngeal swabs/wash	2 วันทำการ	3000	
Respiratory Panel Real-time PCR- Qiagen	Respiratory illness 18 viruses + 4 pathogenic bacterial	Nasopharyngeal swabs/wash	2 วันทำการ	4400	
Bacterial 16s rRNA	Bacterial infection (direct sequencing)**	EDTA blood/CSF/Nasal wash/ Stool/ other fluids	3 วันทำการ*	2200	
Microbiome (Bacteria)	Bacterial multiple infection	EDTA blood/ Nasal wash/Stool/ other fluids	4 สัปดาห์	22,000 (NGS) [#]	

* 7 วันทำการ-กรณียืนยันผลบวกและจำแนกชนิดไวรัสด้วยการถอดรหัสพันธุกรรม

** กรณีพบเชื้อมากกว่า 1 ชนิด (multiple infection) ไม่สามารถแยกชนิดแบคทีเรียได้ด้วยวิธี direct sequencing รายงานผลเป็น “พบเชื้อแบคทีเรีย” หากต้องการแยกชนิดสามารถตรวจสอบได้โดยวิธีการ clone เพิ่มค่าใช้จ่าย 3,500 บาท (5 clone)

[#] NGS= Next Generation Sequencing 454 เฉพาะกรณีพบ PCR positive หากผลการตรวจเป็นลบไม่ต้องทำ NGS ราคาค่าตรวจ 2,200 บาท

Note.....

รายการตรวจ Viral family/ genus With link viral zone	รายละเอียด Viral species	Associated diseases
Astrovirus	<i>Human astrovirus, Bovine astrovirus, Feline astrovirus, Mink astrovirus, Ovine astrovirus, Porcine astrovirus</i>	Gastroenteritis.
Arenavirus	Lymphocytic choriomeningitis virus (LCMV), Lassa virus (LASV), Tacaribe virus (TCRV) Pichinde virus (PICV)	Human: Encephalitis (LCMV), hemorrhagic fever (LASV)
Coronavirus	Alpha and Beta –coronavirus (CoV); HumanCoV-229E, HCoV-NL63, HCoV-OC43, HCoV-HKU1 SARS-CoV, MERS CoV, Novel CoV	Mainly respiratory diseases (pneumonia) and gastroenteritis. SARS-CoV: Severe acute respiratory syndrome
Flavivirus	<ul style="list-style-type: none"> - Dengue virus group: Dengue serotype 1-4, Kedougou (KEDV) - Japanese encephalitis virus group: Japanese encephalitis (JEV), St Louis encephalitis (SLEV), Usutu (USUV), West Nile (WNV), Murray Valley encephalitis (MVEV), Kunjin (KUNV), Kokobera (KOKV), Alfuy (ALFV), Bagaza (BAGV), Ilheus (ILHV), Rocio (ROCV), Israel Turkey meningoencephalomyelitis (ITV), Aroa (AROAV), Bussuquara (BSQV), Iguape (IGUV), Naranjal (NJLV), Cacipacore (CPCV), Koutango (KOUV) - Ntaya virus group: Ntaya (NTAV), Tembusu (TMUV), Sitiawan (SITV), Yaounde (YAOV) Zika (ZIKV), Spondweni (SPOV) - Yellow fever virus group: Banzi (BANV), Bouboui (BOUV), Edge Hill (EHV), Jugra (JUGV), Saboya (SABV), Potiskum (POTV), Sepik (SEPV), Uganda S (UGSV), Wesselsbron (WESSV) Yellow fever (YFV), NKV viruses - Mammalian tick-borne virus group: Gadgets Gully (GGYV), Kadam (KADV), Langat (LGTV) 	YFV: Hemorrhagic fever , encephalitis DENV: Dengue fever ZIKV: Zika fever

	<p>Omsk haemorrhagic fever (OHFV), Powassan (POW), Deer Tick (DTV), Royal farm (RFV) Karshi (KSIV), Tick-borne encephalitis Eastern subtype (TBEV), Tick-borne encephalitis Western subtype (TBEV), Looping ill Negishi subtype (LIV), Looping ill British subtype (LIV) Looping ill Spanish subtype (LIV), Turkish sheep encephalitis (TSEV), Turkish sheep encephalitis Greek subtype (GGEV), Alkhurma (ALKV), Kyasanur Forest disease (KFDV)</p> <p>- Seabird tick-borne virus group: Meaban (MEAV), Saumarez reef (SREV), Tyuleniy (TYUV)</p> <p>- no known vector: Entebbe bat (ENTV), Sokoluk (SOKV), Yokose (YOKV), Apoi (APOIV) Jutiapa (JUTV), Modoc (MODV), Sal Vieja (SVV), Carey island (CIV), Montana myotis leukoencephalitis (MMLV), Phnom Penh bat (PPBV), Batu Cave (BCV), Rio Bravo (RBV) Dakar bat (DBV), Bukalasa bat (BBV), Cell fusing agent (CFAV), Ngoye (NGOV), Kamiti River (KRV)</p>	
<p>Enterovirus</p>	<p>All known human EV.</p> <p>Main: Poliovirus (Human enterovirus C serotypes (PV-1, PV-2, PV-3), Human coxsackievirus (CV), Human enterovirus 70 (EV-70), EV-71, Human rhinovirus A</p>	<p>Paralysis (non-polio and polio-type), summer cold, meningitis, diarrhea. (PV) Polyomyelitis Rhinovirus: Common cold</p>
<p>Paramyxovirus</p>	<p>Avulavirus: Newcastle disease virus, Avian paramyxovirus-2, Avian paramyxovirus-3</p> <p>Henipavirus: Hendra virus, Nipah virus</p> <p>Morbillivirus: Measle virus Canine distemper virus, Phocine distemper virus, Dolphin, morbillivirus, Porpoise morbillivirus</p> <p>Respirovirus: Bovine parainfluenza virus 1, Bovine parainfluenza virus 3, Human parainfluenza virus 1, Human parainfluenza virus 3, Sendai virus, Pacific salmon paramyxovirus, Guinea pig parainfluenza virus 3</p> <p>Rubulavirus: Mumps virus, Human parainfluenza virus 2, Canine parainfluenza virus 2 Simian</p>	<p>Measles, Mumps, Respiratory tract infections</p>

	virus 5, Simian virus 41 Unclassified Paramyxovirinae: Fer-de-Lance virus, Menangle virus, Salem virus	
Rhabdoviridae	Genus Cytorhabdovirus; type species: Lettuce necrotic yellows virus Genus Dichorhabdovirus; type species: Orchid fleck virus Genus Ephemerovirus; type species: Bovine ephemeral fever virus Genus Lyssavirus; type species: Rabies virus Genus Novirhabdovirus; type species: Infectious hematopoietic necrosis virus Genus Nucleorhabdovirus; type species: Potato yellow dwarf virus Genus Perhabdovirus; type species: Perch rhabdovirus Genus Sigmavirus; type species: Drosophila melanogaster sigmavirus Genus Tibrovirus; type species: Tibrogargan virus Genus Vesiculovirus; type species: Vesicular stomatitis Indiana virus	Rabies virus : Rabies fatal encephalitis Vesiculovirus : Vesicular diseases, encephalitis Flu-like symptoms in human.
Lyssavirus	All 7 lyssaviruses genotypes: Rabies virus, Lagos Bat virus (LBV), Mokola virus (MOKV), Duvenhage virus (DUVV), European Bat Lyssavirus 1 (EBLV1), European Bat Lyssavirus 2 (EBLV2), Australian Bat Lyssavirus (ABLV)	Rabies fatal encephalitis
Seadornavirus	Banna virus (BAV), Kadipiro virus (KDV) and Liao ning virus (LNV)	(BAV): Encephalitis in humans.
Hantavirus	Hantaan virus (HTNV), Dobrava-Belgrade virus (DOBV), Seoul virus (SEOV), New York virus (NYV), Puumala virus (PUUV), Sin nombre virus (SNV), Tula virus (TULV)	Human: hemorrhagic fever with renal syndrome , Hantavirus pulmonary syndrome
Alphavirus	Chikungunya (CHK), Venezuelan Equine Encephalitis (VEE), Eastern Equine Encephalitis (EEE), Western Equine Encephalitis (WEE), Semliki Forest (SF), Sindbis virus (SIN), Rose River (RR)	Encephalitis, fever, long lasting joint pain.

Phlebovirus	Rift Valley Fever virus (RVFV), Toscana (TOSV), Sandfly fever virus-Sicilian (SFSV),- Naples (SFNV), Punta Toro virus (PTV), Aguacate virus (AGUV)	RVFV: influenza-like illness, rarely hemorrhagic fever .
Henipavirus	Hendra virus, Nipah virus	Hendra: Respiratory illness Nipah: Fever and headache, Encephalitis, Respiratory illness
Retroviruses – Lentivirus genus	AIDS	HIV-1: Acquired Immunodeficiency Syndrome HTLV-1: Adult T-cell leukemia(ATL) and HTLV-1 associated myelopathy/tropical spastic paraparesis (HAM/TSP) .
Influenzavirus A	All Influenza A. The influenza A virus subtypes that have been confirmed in humans, ordered by the number of known human pandemic deaths, are: <ul style="list-style-type: none"> • H1N1 caused "Spanish flu" and the 2009 swine flu outbreak • H2N2 caused "Asian flu" in the late 1950s • H3N2 caused "Hong Kong flu" in the late 1960s • H5N1 considered a global influenza pandemic threat through its spread in the mid-2000s • H7N7 has unusual zoonotic potential • H1N2 is currently endemic in humans and pigs • H9N2, H7N2, H7N3, H5N2, and H10N7. 	Acute febrile respiratory tract infection
Herpesvirus – DNA 2 PCRs	Human herpesvirus 1-8: Herpes simplex virus 1 (HSV1), HSV2, Varicella-zoster virus (HHV-3, VZV), Epstein-Barr virus (HHV-4, EBV), Human cytomegalovirus (HHV-5, CMV), Human herpesvirus 6 (HHV-6), HHV7, HHV8 Other Herpesviruses: Herpesvirus aotus type I, Herpesvirus ateles, Herpesvirus sanguinus,	HHV-1 and HHV-2: skin vesicles or mucosal ulcers (oral and/or genital). Rarely, encephalitis and meningitis. HHV-3: chickenpox (Varicella) and shingles. Congenital varicella

	Canine herpesvirus, African green monkey cytomegalovirus, Equine cytomegalovirus, Feline herpesvirus 1, feline rhinotracheitis herpesvirus, Infectious laryngotracheitis virus, Marek's disease herpesvirus type 2, Channel catfish herpesvirus, Rabbit herpesvirus; herpesvirus cuniculi, Parrot herpesvirus, Herpes platyrrhinae, Herpesvirus saimiri	syndrome may be caused by infection in utero during the first trimester. GaHV-2: Marek's disease. HHV-5: congenital CMV infection. HHV-6: "sixth disease" (roseola infantum, exanthem subitum). HHV-7: symptoms analog to the "sixth disease". HHV-4: B lymphocytes. HHV-8: B lymphocytes.
Bocaviruses - DNA	Four species of human bocaviruses (HBoV1 -4), Bovine parvoviruses, Canine minute viruses	Human: acute respiratory illness. Dog: mainly symptomless. Cattle: diarrhea and mild respiratory symptoms.
Orthopoxvirus - DNA	Vaccinia virus (VACV), Cowpox virus (CPXV), Horsepox virus (HPXV), Monkeypox virus (MPXV), Variola virus (VARV)	Variola virus: Smallpox Cowpox, Horsepox, Monkeypox: Asymptomatic in Human Encephalitis, Myelitis
Parapoxvirus - DNA	Bovine papular stomatitis virus (BPSV), Orf virus (ORFV), Pseudocowpox virus (PCPV), Parapox of red deer in New Zealand (PVNZ)	Skin lesions
Adenovirus - DNA	Human adenoviruses (HAdVs) [6 species from A to F with 51 serotypes], Human adenovirus A (HAdV-A), Human adenovirus B (HAdV-B), Human adenovirus C (HAdV-C), Human adenovirus D (HAdV-D), Human adenovirus E (HAdV-E), Human adenovirus F (HAdV-F)	Human adenoviruses: mainly respiratory diseases, croup, and bronchitis, pneumonia. Also keratoconjunctivitis, cystitis and gastroenteritis. Fowl adenovirus C: hydropericardium syndrome (HPS) also known as Angara disease.
Polyomavirus - DNA	JC virus (JCPyV), Human polyomavirus (HPyV), BK polyomavirus (BKPyV),	JCPyV: progressive multifocal leukoencephalopathy (PML)., Gastrointestinal,

		<p>Encephalitis</p> <p>BKPyV: mild respiratory infection.</p> <p>Some cancers may be associated with polyoma viruses</p> <p>In birds: Budgerigar Fledgling Disease</p> <p>Polyomaviruses have been extensively studied as tumor viruses in humans and animals, leading to fundamental insights into carcinogenesis, DNA replication and protein processing.</p>
<p>Filoviridae</p> <p>5 PCR</p>	<p>Genus Ebolavirus and Marburgvirus</p> <p>1) Genus Ebolavirus [Bundibugyo virus (BDBV; previously BEBOV), Reston virus (RESTV; previously REBOV), Sudan virus (SUDV; previously SEBOV), Tai Forest virus (TAFV; previously CIEBOV), Ebola virus (EBOV; previously ZEBOV)]</p> <p>2) Genus Marburgvirus [Marburg virus (MARV), Ravn virus (RAVV)]</p>	<p>Hemorrhagic fever, fatality ranges from 50% to 90%</p>
<p>Orbivirus</p>	<p>58 reference strains, including prototype Changuinola, Orungo, Eubenangee, Wongorr, Great Island, Corriparta, and Umatilla viruses, Bluetongue virus (BTV), Epizootic hemorrhagic disease virus (EHDV)</p>	<p>febrile disease, headache, myalgia.</p>
<p>Bunyaviridae</p>	<p>1) Orthobunyavirus: Potosi virus (POTV), Northway virus (NORV), Main Drain virus (MDV)</p> <p>Kairi virus (KRIV)</p> <p>2) Nairovirus</p> <p>3) Phlebovirus: Rift Valley fever virus (RVFV), Sandfly fever Naples virus (SFNV)</p> <p>4) Hantavirus</p>	<p>Human: encephalitis, hemorrhagic fever, Hantavirus pulmonary syndrome</p>

	5) Tospovirus Crimean-Congo hemorrhagic fever virus (CCHFV)	
Respiratory viruses 16 Real-time PCR Seegene	16 respiratory viruses: Influenza A, Influenza B, Human adenovirus, Human parainfluenza virus 1, Human parainfluenza virus 2, Human parainfluenza virus 3, Human parainfluenza virus 4, Human rhinovirus A/B/C, Human respiratory syncytial virus A, Human respiratory syncytial virus B, Human metapneumovirus, Human coronavirus 229E, Human coronavirus NL63, Human coronavirus OC43, Human bocavirus 1/2/3/4, Human enterovirus	Respiratory infection
Respiratory Panel 21 Real-time PCR	influenza A, influenza A (H1N1) swl, influenza B, rhinovirus, coronavirus NL63, coronavirus 229E, coronavirus OC43, coronavirus HKU1, parainfluenza 1, 2, 3, 4, human metapneumovirus A/B, bocavirus, respiratory syncytial virus A/B, adenovirus, enterovirus, parechovirus, Mycoplasma pneumoniae	Respiratory infection