

Molecular Diagnostics Laboratory at the Zoological Society of San Diego

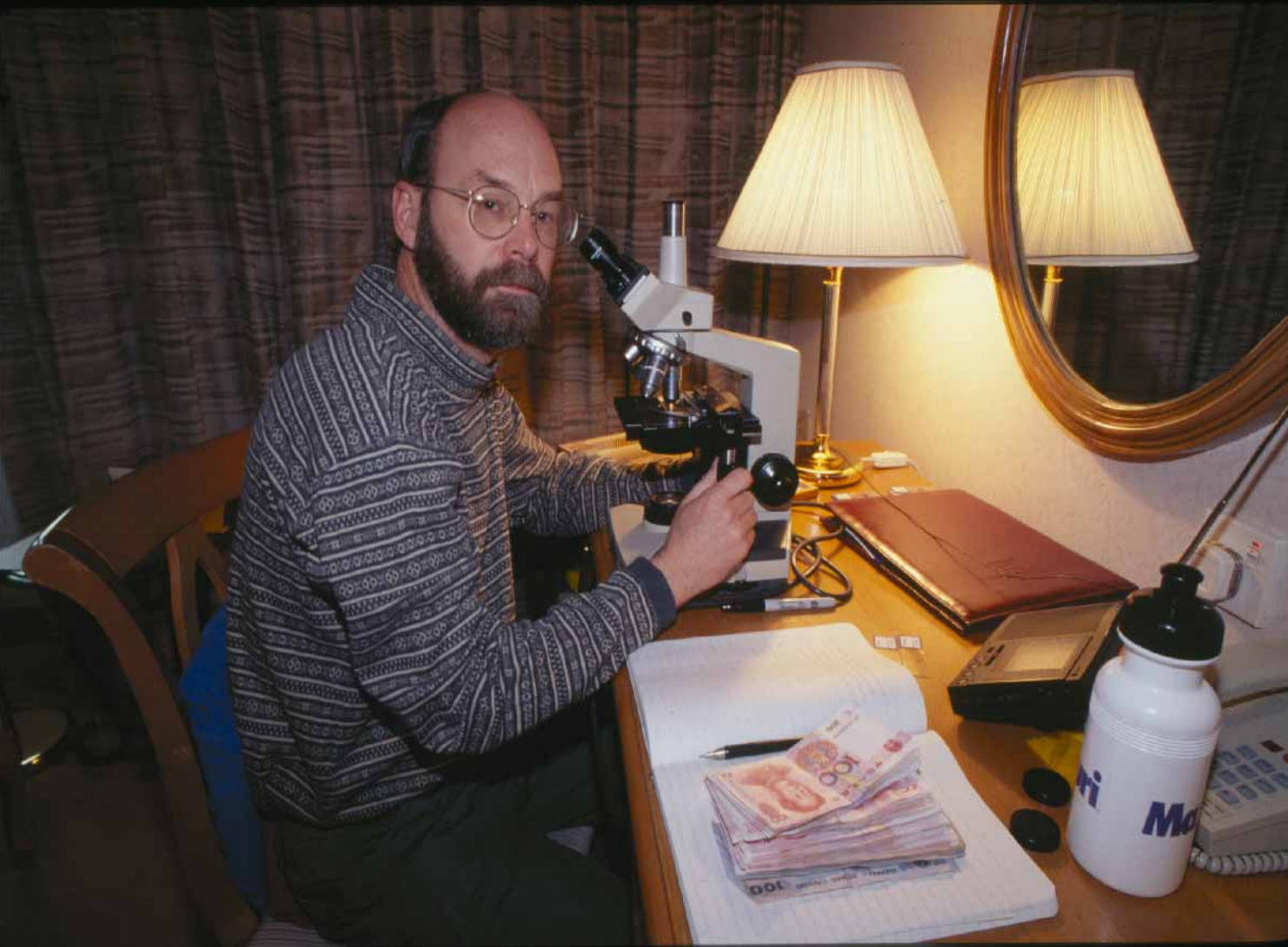
圣地亚哥动物园
分子生物学诊断实验室





Beckman Building Center for Research of Endangered Species





**Dr. Bruce Rideout
Head of Pathology**

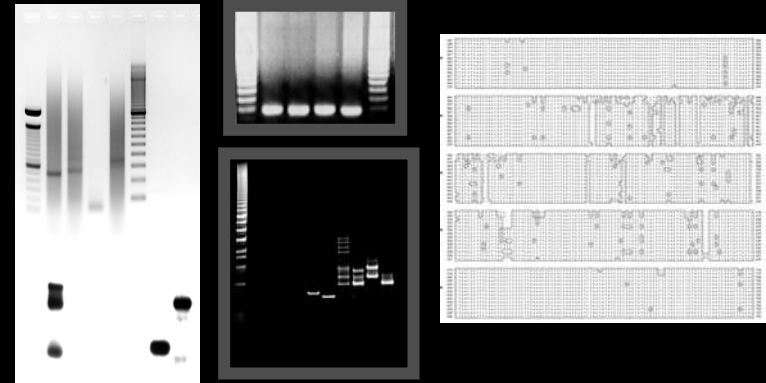
Characterize acute and chronic disease outbreaks

表示
急性和慢性疾病



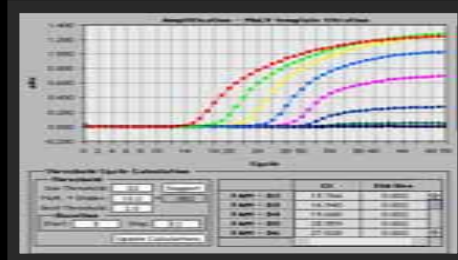
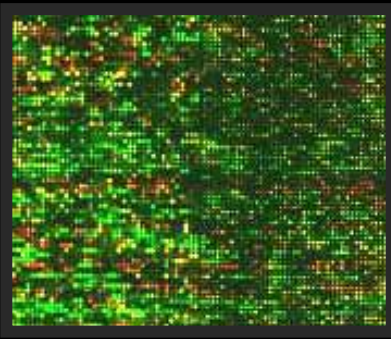
Molecular epidemiology of diseases

分子疫病学



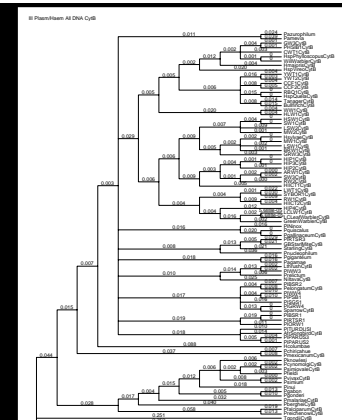
Develop diagnostic assays

发展诊断考验



Ecology of infectious disease

传染病生态学



Outbreaks of Disease

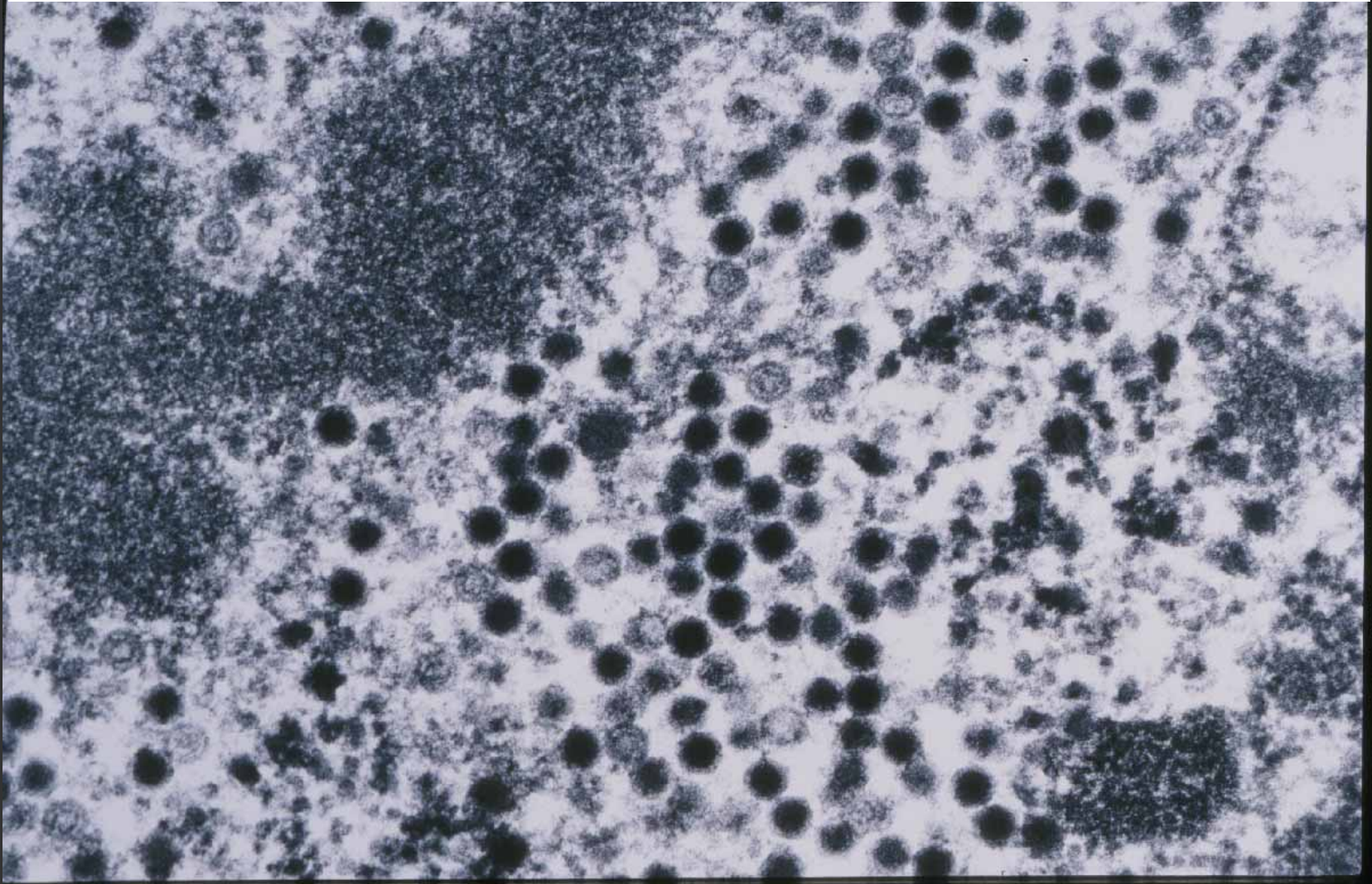
疾病爆发

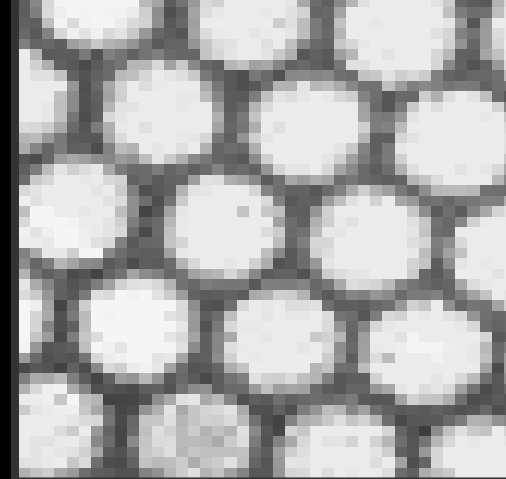
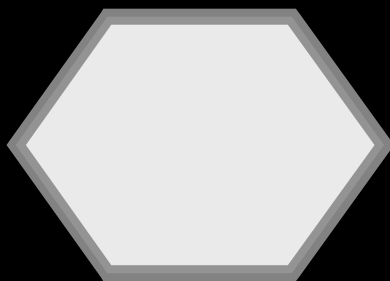
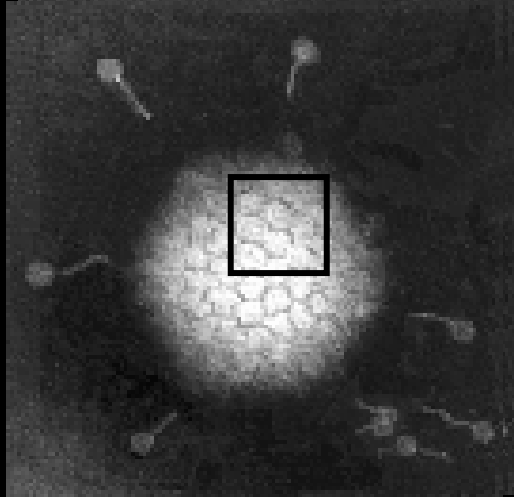




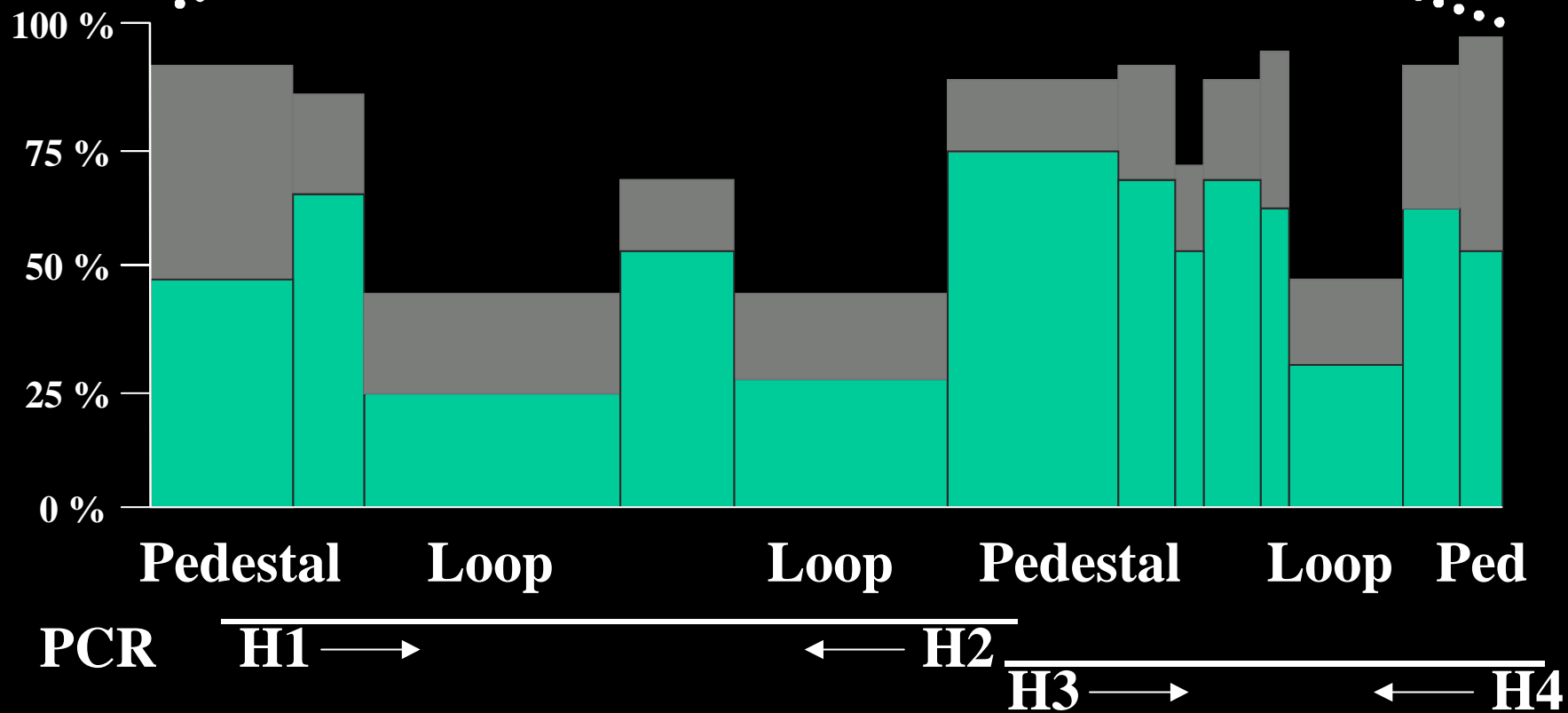
Virus Particles

病毒粒子



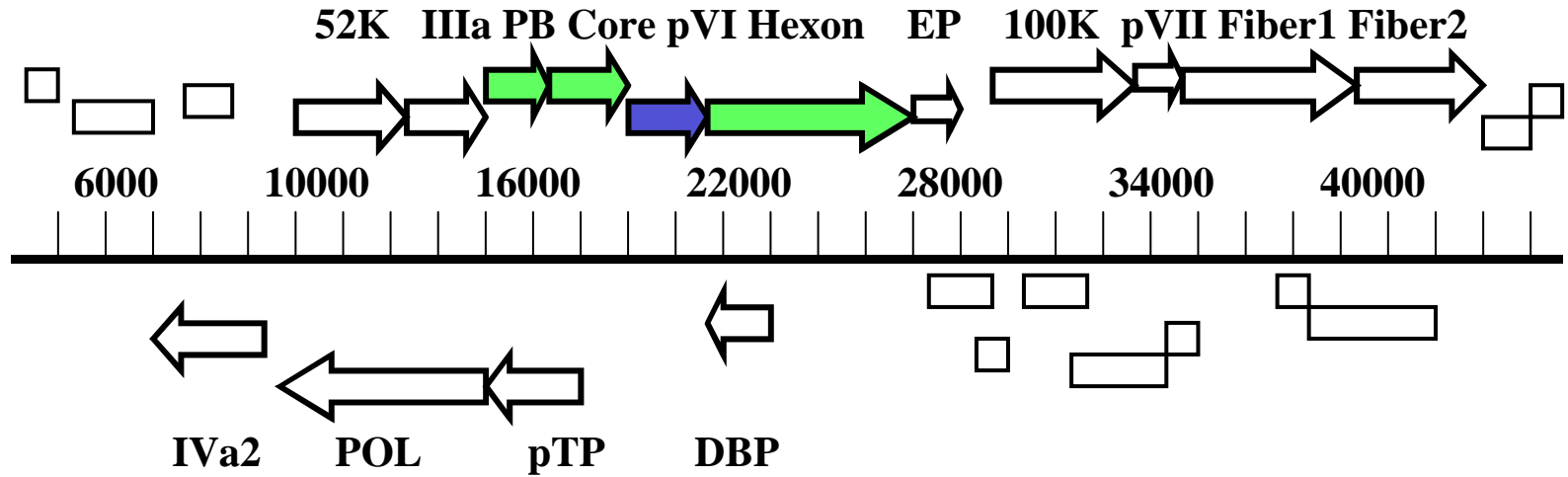


aa identity



94
aa

CELO: Avian Adenovirus 1



Homology with Mammalian Adenoviruses

Homology with Falcon Adenovirus



West Nile Virus

Poxvirus

Malaria





Protozoa: Entamoeba

Adenovirus







**Molecular epidemiology of
diseases**

分子疫病学



Barbary Red Deer

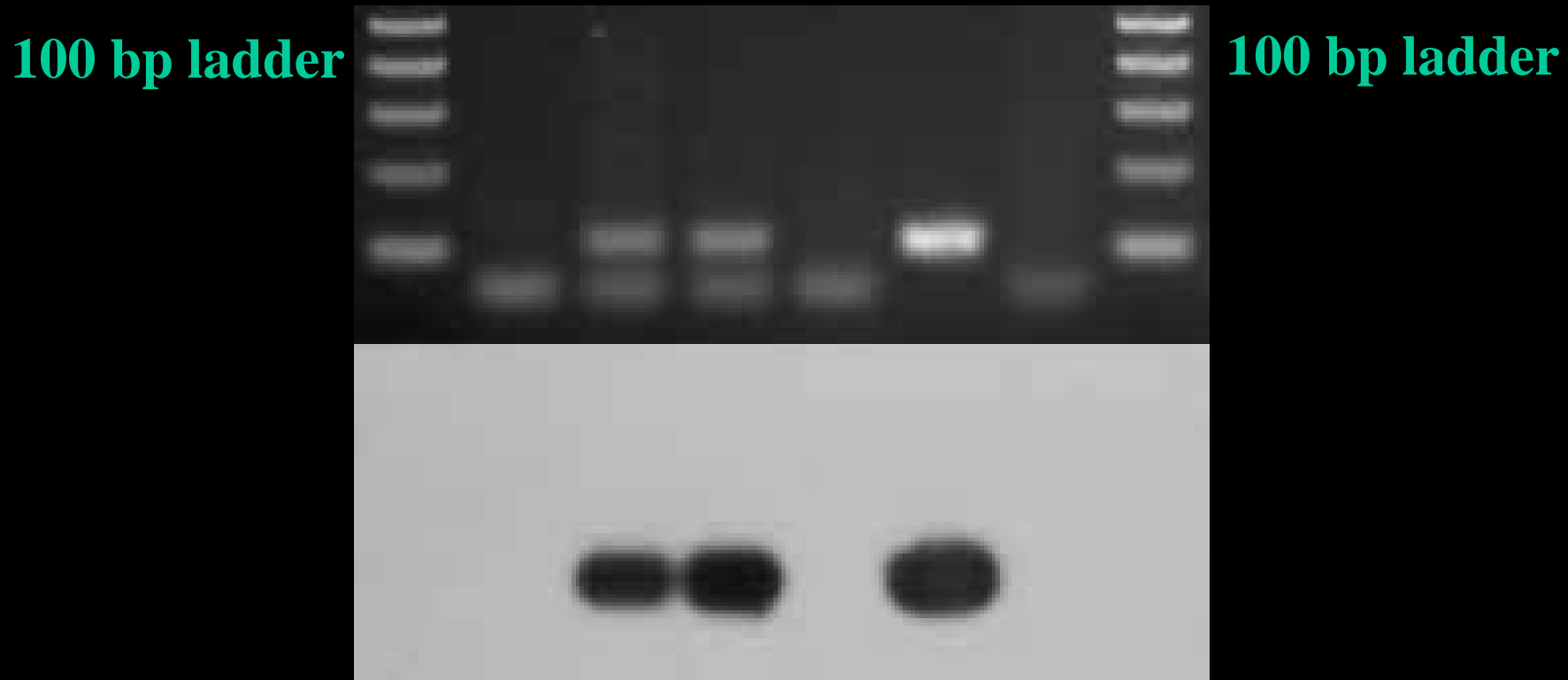
(Cervus elaphus barbarus)





Malignant Catarrhal Fever Novel Gammaherpesvirus

PCR products on
Agarose Gel stained with Ethidium Bromide

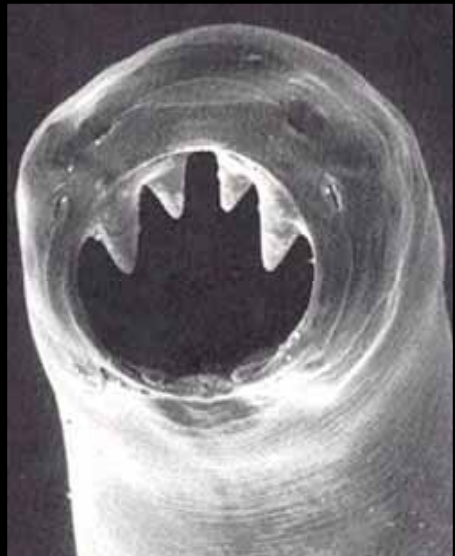
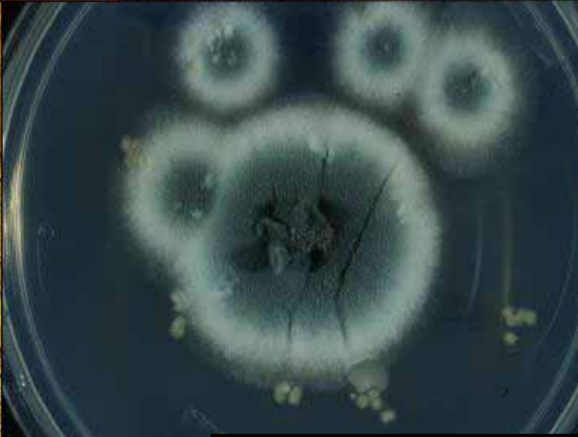
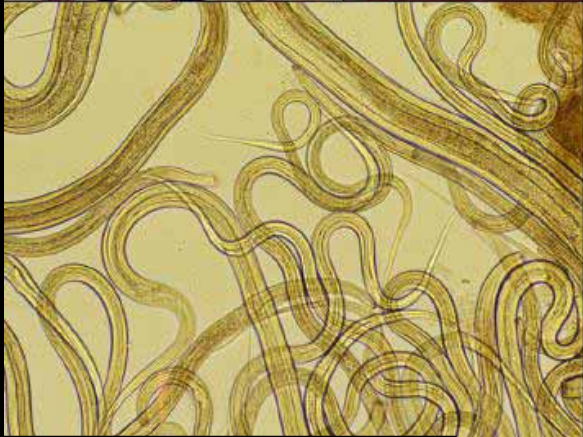
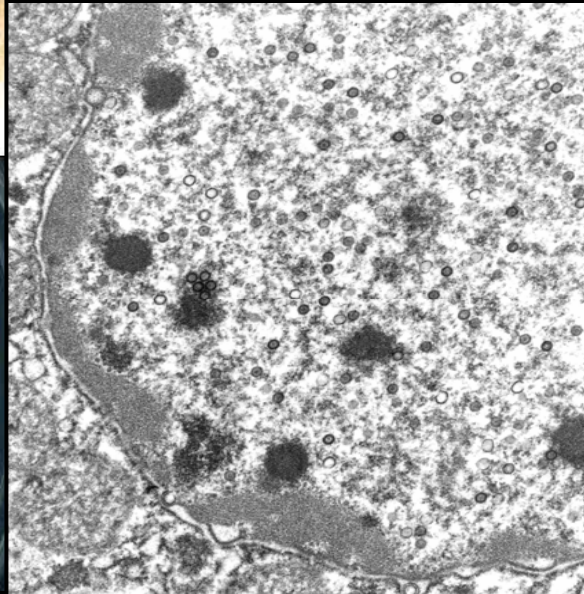
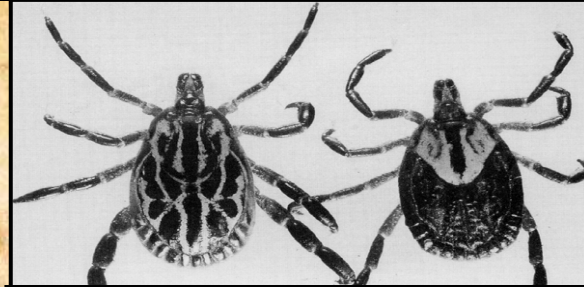
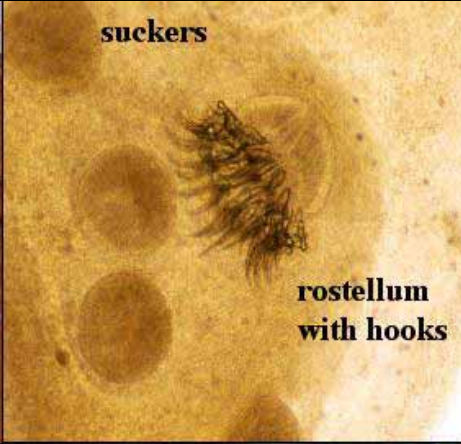
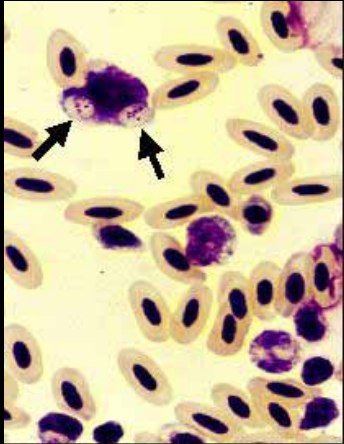


Southern blot hybridization

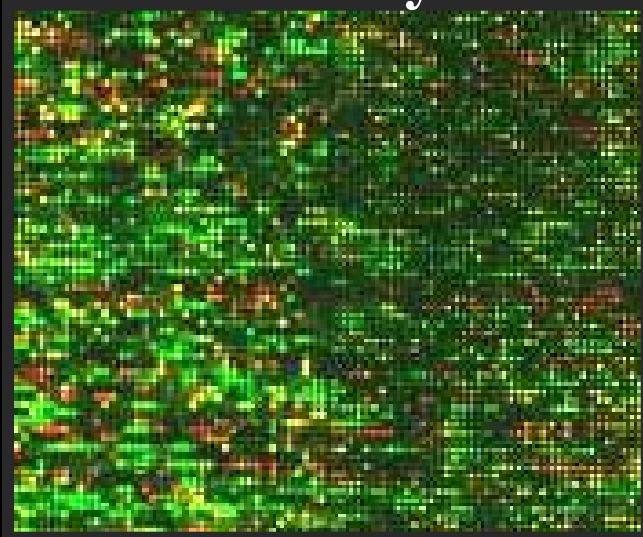


Diagnostic Assays

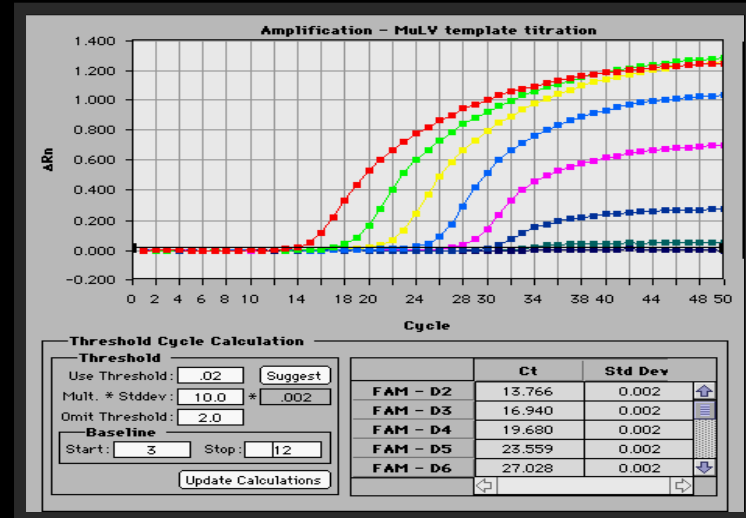
诊断考验



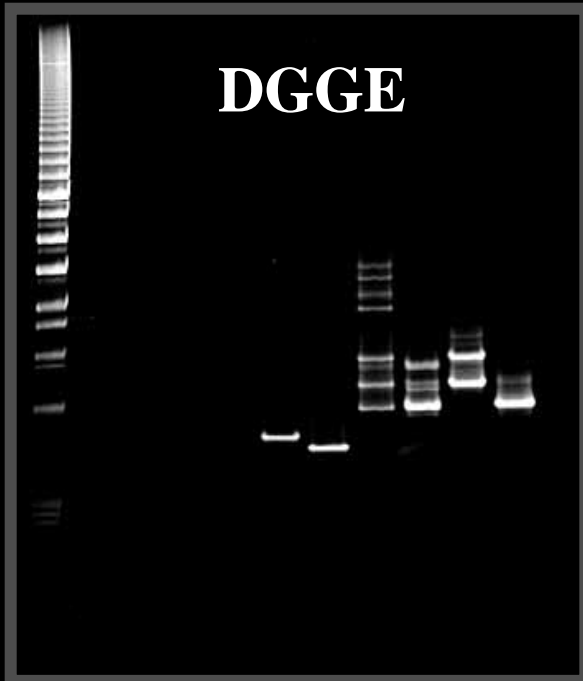
Microarray



Real-time PCR

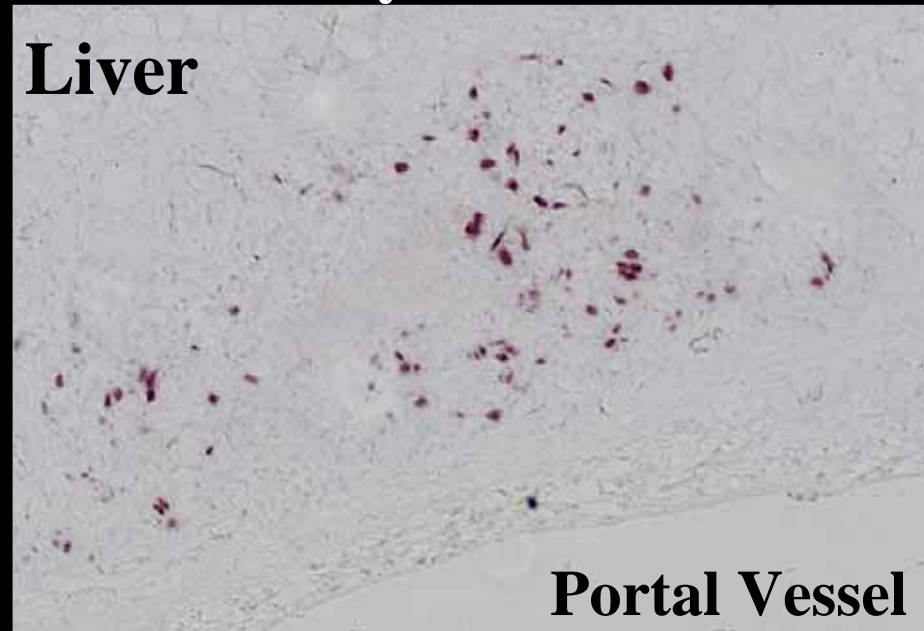


DGGE



In situ hybridization

Liver



Portal Vessel

**Test
Quarantine
animals**



**Test
Sick
animals**

Monitor healthy animals



Ecology of Infectious Disease

传染病生态学

Red and grey langur

Endangered Asian primate

叶猴





Social and Sensitive

群居的

和很敏感的

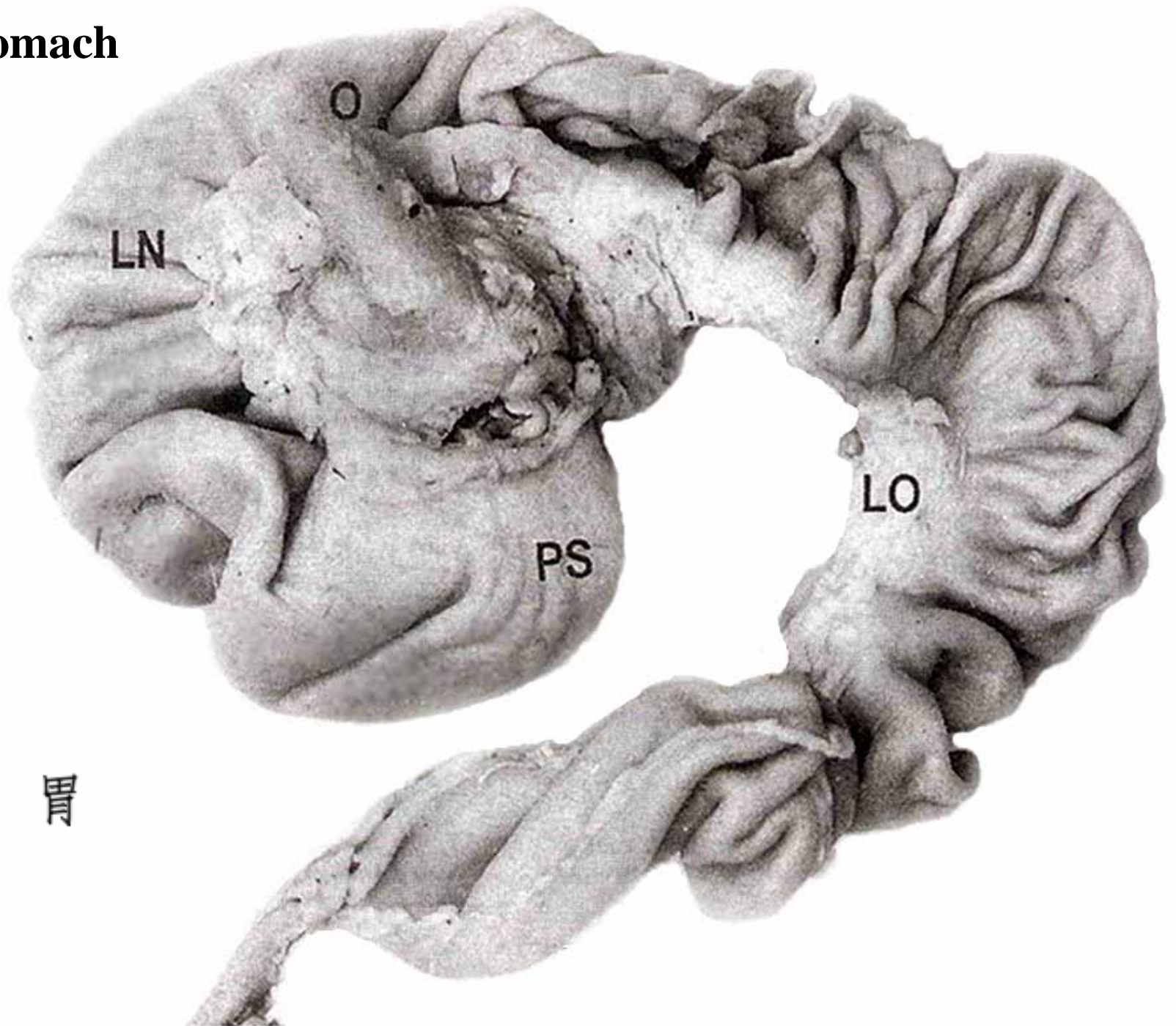


Good parents

很好的父母亲



Stomach



胃

Saccus

Tubus

LN

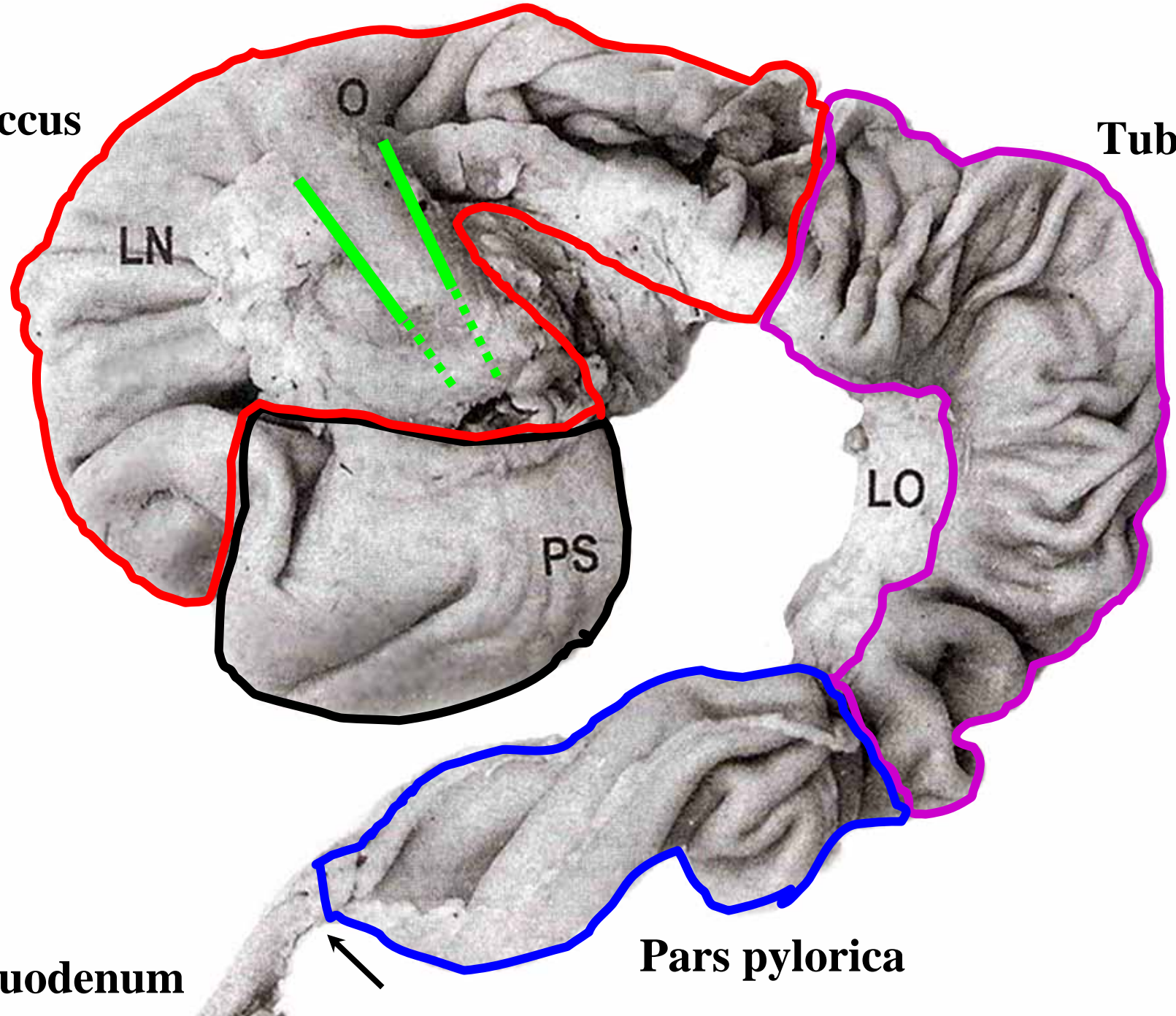
O

LO

PS

Duodenum

Pars pylorica



Vulnerable to Stress

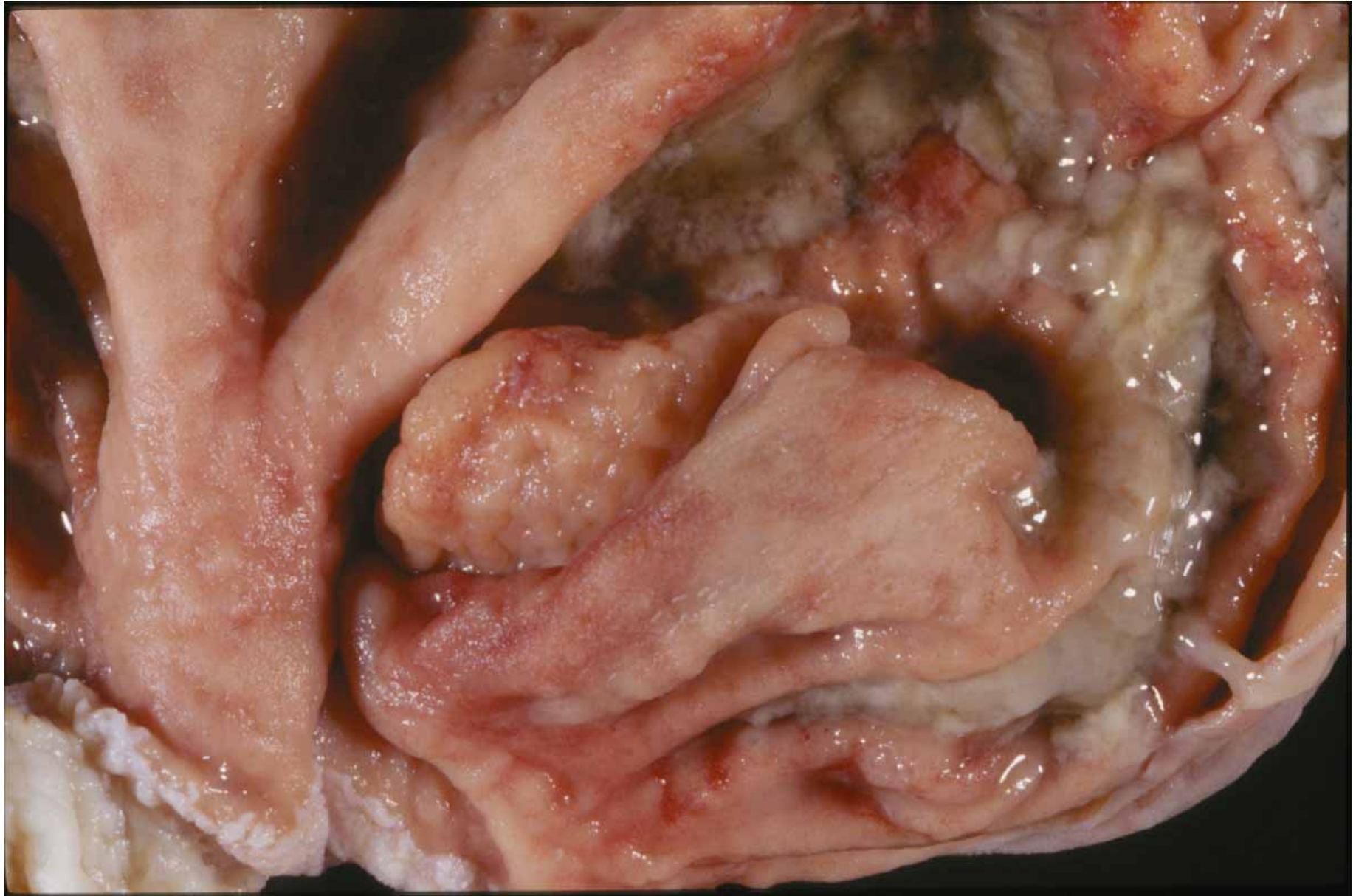
Emaciated from vomiting and diarrhea



易受攻击的
(压力)

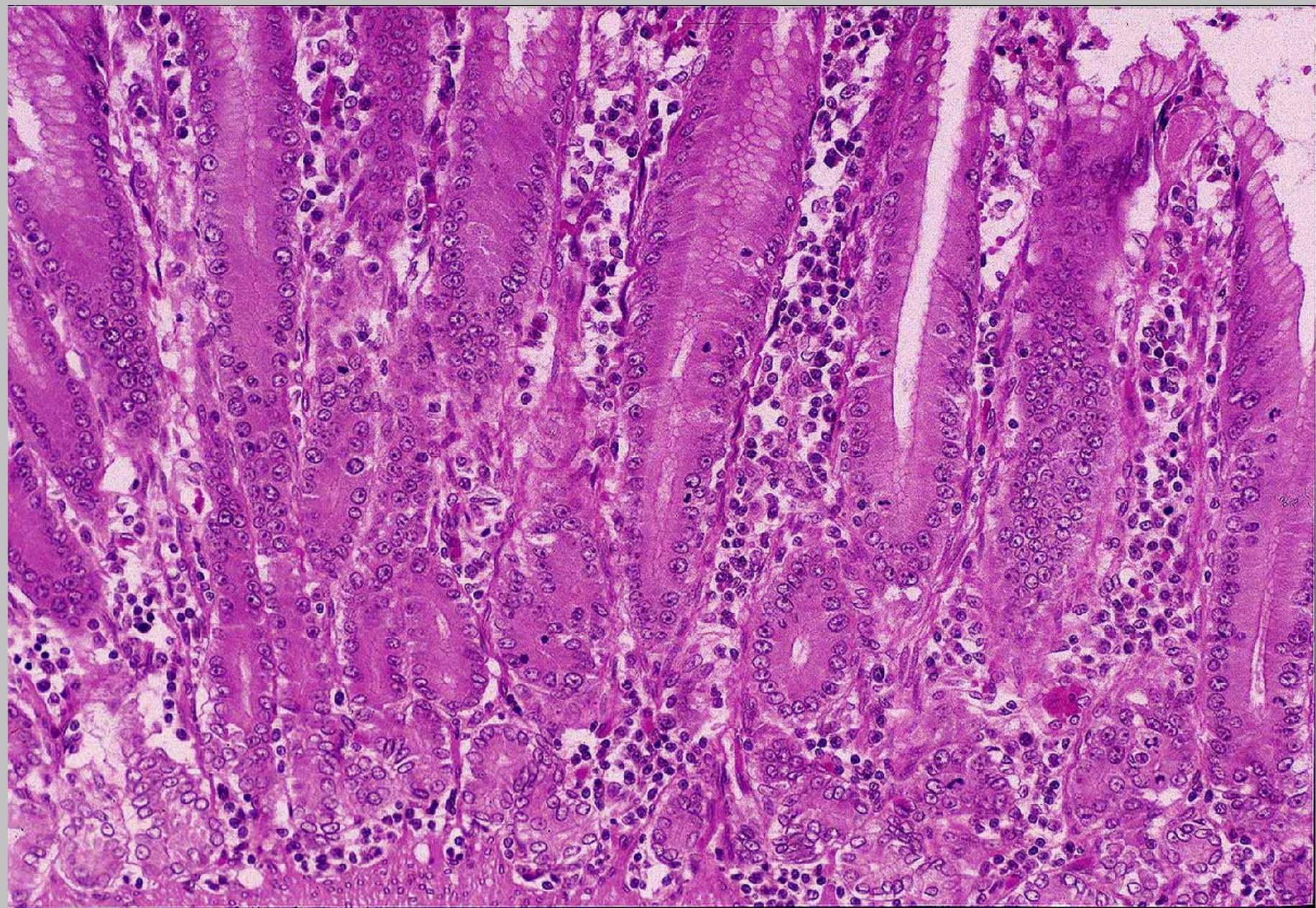
Ulcers

潰瘍



Inflammation

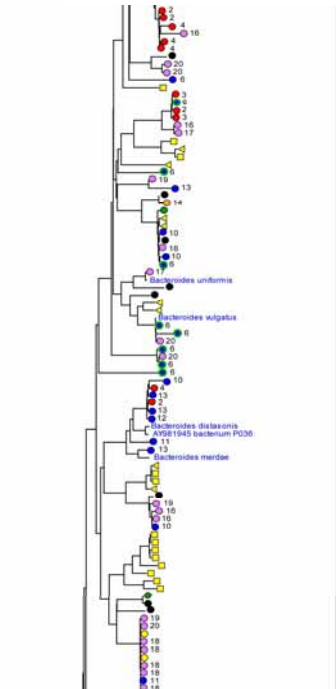
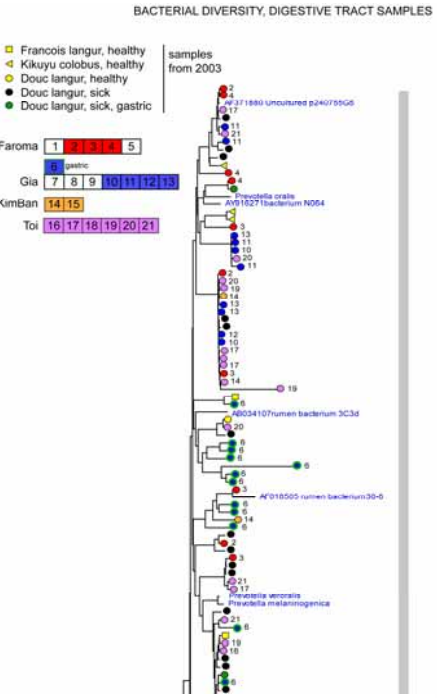
发炎



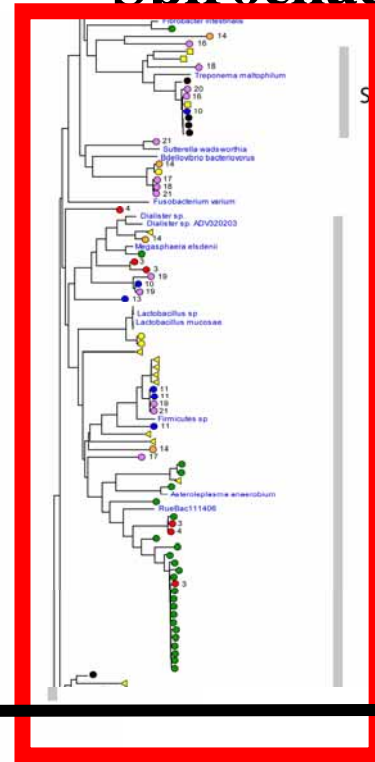
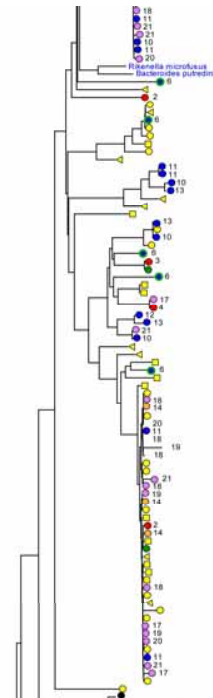
Characterize intestinal microflora

表示肠微生物群

Bacteroides

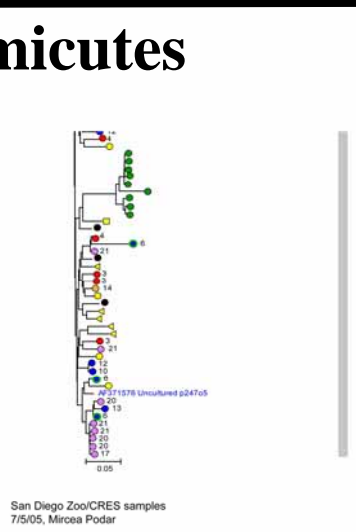
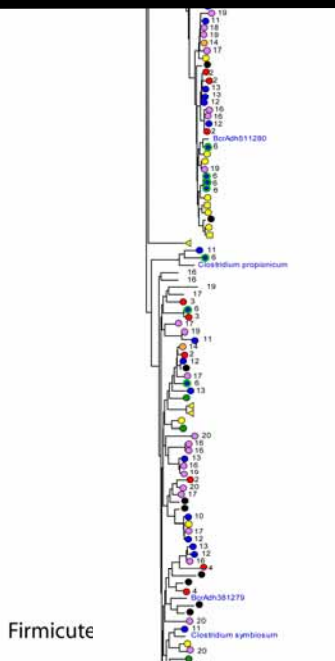
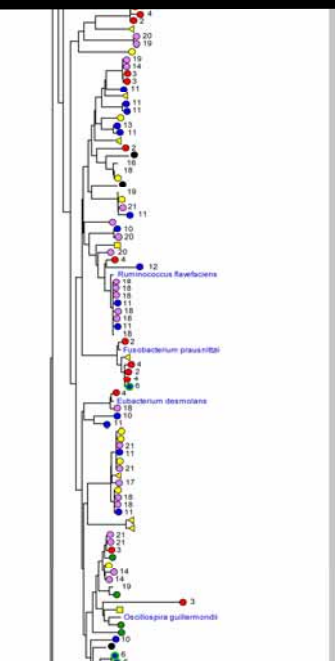


Spirochaetes



Spirochetes

Firmicutes



Firmicute

Dysbiosis Intestinal Flora

212 new genotypes

78 new species bacteria

Increased numbers of Spirochetes in Douc Langurs

Allow colonization Helicobacter, Entamoeba, Megabacteria

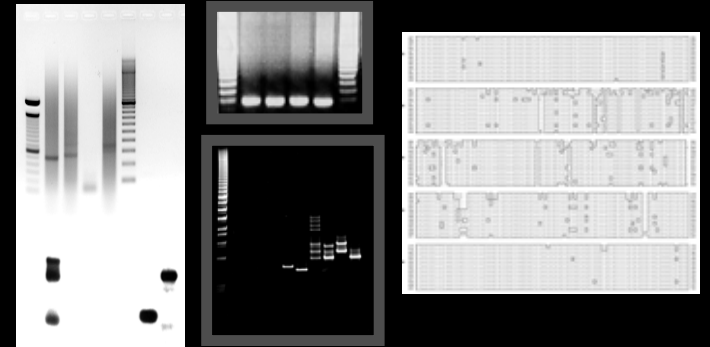
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表示
急性和慢性疾病



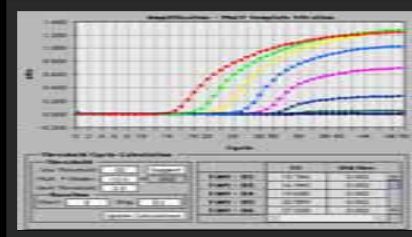
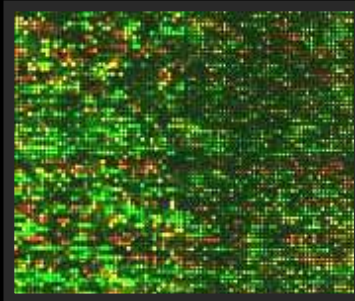
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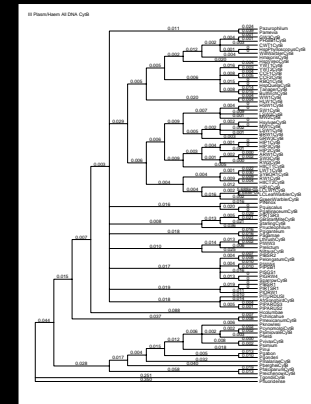
Develop diagnostic assays

发展诊断考验



Ecology of infectious disease

传染病生态学



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Zoological Society of San Diego

Inter-species

Intra-species

Zoonotic

Non-invasive sampling

Archiving samples

Quarantine evaluations

Disease surveillance

Testing sick animals

Rapid analyses disease outbreaks

我们的工作中的最
大的高兴：
看我们帮助的动物



谢谢你们

ZOOLOGICAL SOCIETY
OF
SAN DIEGO



SAN DIEGO WILD ANIMAL
PARK

请在圣地亚哥
好玩!

Special Thanks to Pascal Gagneux (interpreter)