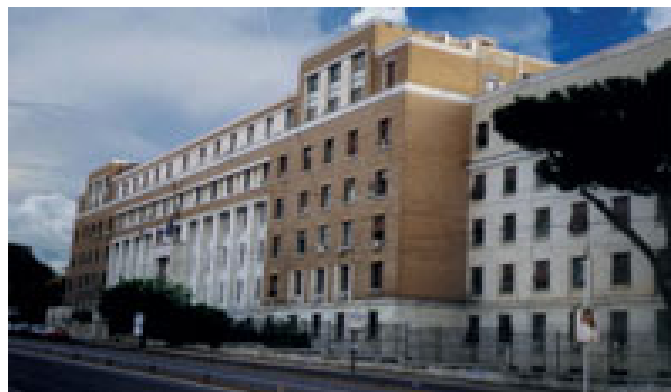


The Italian National Reference Laboratory for *E.coli*

Alfredo Caprioli

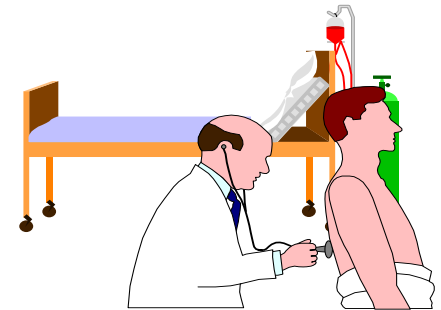
Dipartimento di Sanità Alimentare e Animale
Istituto Superiore di Sanità, Roma



www.iss.it

Istituto Superiore di Sanità (ISS)

- ISS is the national institute for public health in Italy
- It employs 1,900 staff personnel (700 scientists)
- It is constituted by 9 Departments:
 - Health Applied Tecnology
 - Environment
 - Cell biology and Neuroscience
 - Molecular Medicine
 - Drugs
 - Infectious and Parasitic Diseases
 - Food safety and Veterinary Public Health
 - Food Control
 - Epidemiology



Tasks and activities of ISS

- Public health-related research
- Technical and scientific advice to the Ministry of Health and other bodies of the National Public Health Service
- Provision of experts to EC and other international bodies and committees (EFSA, EMEA, Codex Alimentarius, WHO, OIE ...)
- Control activities (drugs, food, medical devices, ...)
- National and international Reference Laboratories



Unit of Foodborne Zoonoses and Veterinary Epidemiology

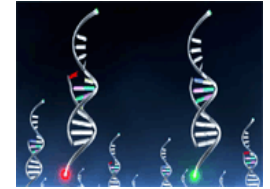
Director: Alfredo Caprioli



National Reference Laboratory for *E.coli*

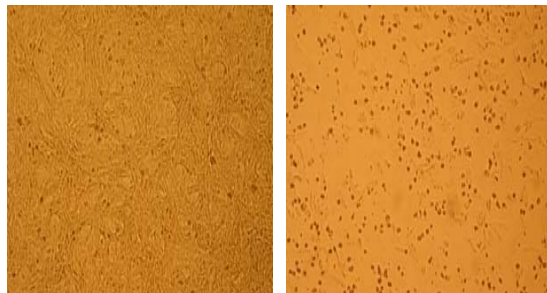


Microbiology and molecular biology



➤ **Diagnosis of VTEC infections in cases of hemolytic uremic syndrome (HUS)**

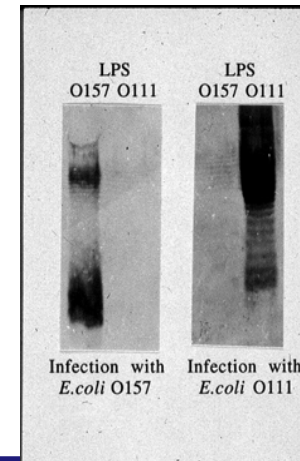
Vero cell assay



PCR amplification of virulence genes



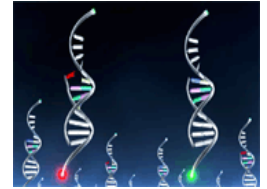
Serologic diagnosis



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Microbiology and molecular biology

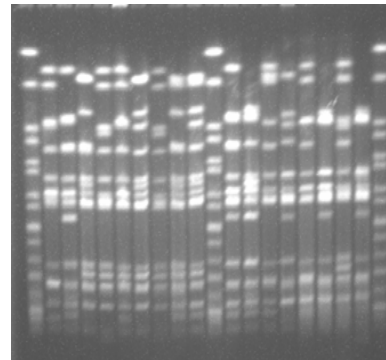


➤ Phenotypic and genotypic characterization of strains from human and animal infections and from foodstuffs

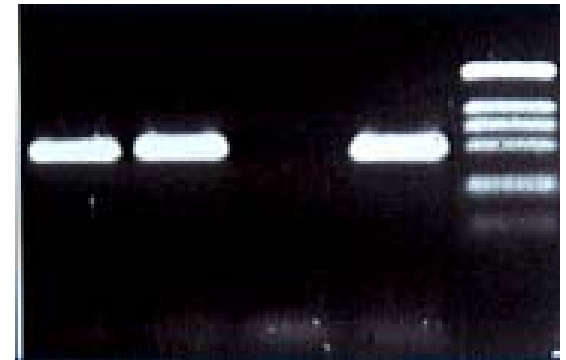
Serotyping



Molecular typing (PFGE)



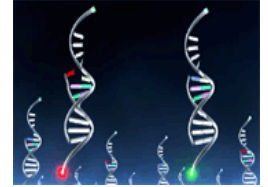
“Virulotyping”



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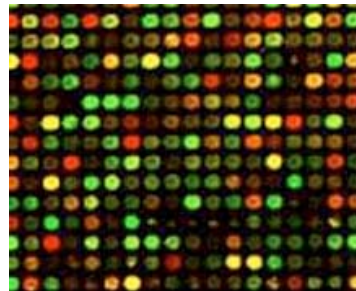
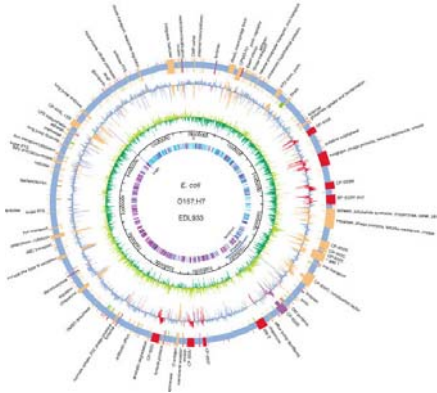


Microbiology and molecular biology

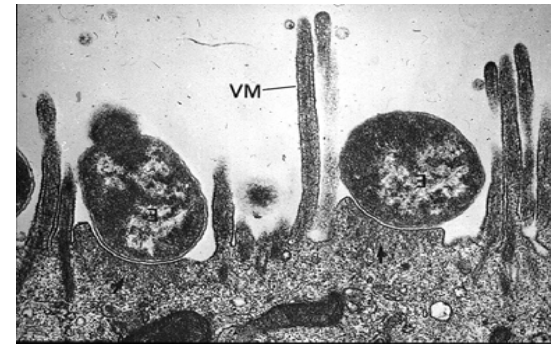


➤ Research on virulence factors in O157 and non-O157 VTEC

Comparative genomics by microarray



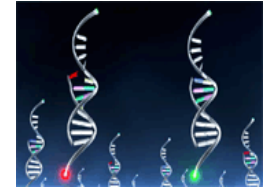
Characterization of Pathogenicity Islands



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Food Microbiology

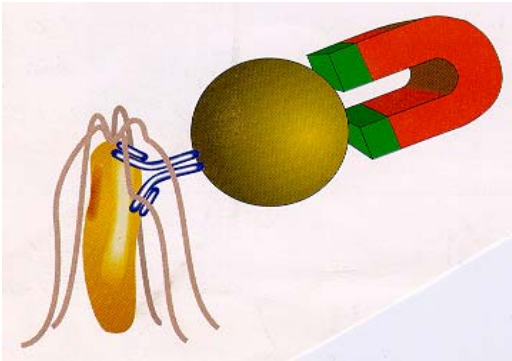


➤ Coordination of national inter-laboratory studies

E.coli O157 in food

PCR confirmation of suspected VTEC O157

Nationwide studies on VTEC in foodstuffs

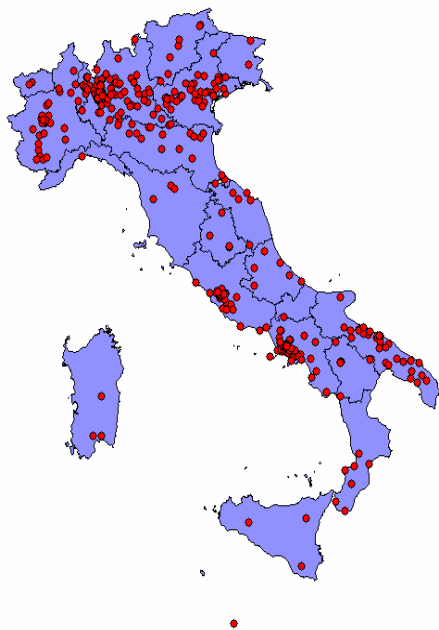


Conedera et al.
Int J Food Microbiol 2004;96:67-73

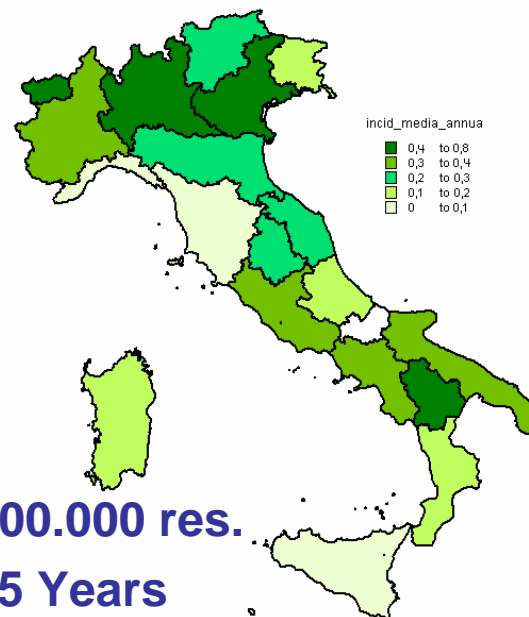
Epidemiology

➤ Surveillance of VTEC infections since 1988 and outbreak investigations

Cases of HUS in Italian children

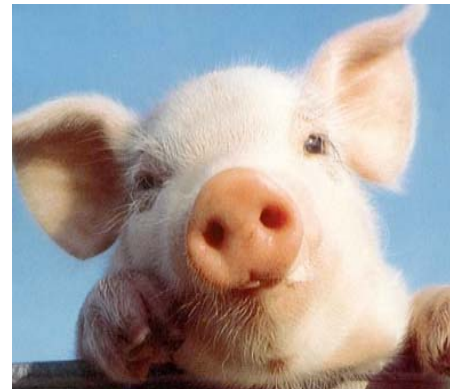


Incidence of HUS in Italian regions



Epidemiology

➤ Studies on VTEC in animal reservoirs



National Reference Laboratory for *E.coli*

- Participation in European Networks for surveillance and control of zoonoses



ENTER-NET: an International network for the surveillance of Enteric Infections



MED • VET • NET

A European Network of Excellence for the Prevention and Control of Zoonoses (coordinated by AFSSA)

Thank you for your attention !



Istituto Superiore di Sanità - Dipartimento Sanità Alimentare e Animale
Community Reference Laboratory for *E.coli*