RAPID TEST FOR SARS ANTIBODIES DEVELOPED

5 September (Reuters Health)—Researchers in Singapore said they have developed a new severe acute respiratory syndrome (SARS) test kit capable of detecting antibodies to the respiratory virus in 15 minutes.

In some cases, the result is known in just 2 minutes.

The kit uses a blood droplet and requires no special training.

Presence of antibodies to the SARS virus signals that a patient is infected with SARS, said Genelabs Diagnostics Pte. Ltd., which developed the kit with the Singapore government–run Institute of Molecular and Cell Biology.

The kit will be available to hospitals in the next 2 months, Genelabs said. It will not be sold to the public.

The Singapore researchers also developed a SARS test that can produce results for a large number of samples in 90 minutes.

Guan Ming, product development manager at Genelabs, said test samples from more than 70 SARS patients were used and compared with those of healthy bodies to the respiratory virus in 15 minutes.

Both tests, which are now being evaluated in China and Hong Kong, where SARS hit hard, can only detect the virus after the 16th day of infection, but the researchers hope to develop a test for the virus in the first 7 days.

© 2003 Reuters Limited. All rights reserved.

Editor’s comment. It is of interest that, just a few days after this news release, a patient had infection with the SARS-associated coronavirus diagnosed at a Singapore hospital. This diagnosis was confirmed by the US Centers for Disease Control and Prevention (see PROMED-mail archive number 20030914.2320, 14 September 2003 [http://www.promedmail.org]). This patient’s case did not meet the World Health Organization’s clinical/epidemiologic case definition for SARS because the infection was mild, with no pulmonary infiltrate, and there was no known contact with other possible or probable cases. At the present time, the working hypothesis is that the infection was laboratory acquired.

CHINA THINKS SARS MAY RETURN IN WINTER

5 September (Reuters Health)—China has called on doctors and citizens to take precautions this winter when the severe acute respiratory syndrome (SARS) virus could return, the China Daily said.

Some medical experts have said SARS, which originated in south China in November and faded in July, may only be dormant, while others fear there are milder, mutated versions that may still be circulating.

People should take “all possible measures to prevent influenza this autumn and winter which may also see the return of SARS,” the newspaper said, quoting health authorities.

It quoted the authorities as saying they were concerned that future flu cases and other respiratory diseases could be mistaken for SARS, which killed more than 800 people in 30 countries and infected thousands.

Hong Kong scientists said... genetic testing of animals sold as delicacies in a southern Chinese market had confirmed suspicions that SARS jumped to humans from animals.

The researchers found clear differences between the animal and human strains of the virus but said they were minor enough to show SARS came from animals, as influenza and other viruses had done.

The World Health Organization said in August that China’s decision to lift the ban on the sale of 54 exotic animals for food was premature.

China banned the sale of such animals in May, when it declared war on SARS after being criticized for covering up the initial outbreak.

Many species of wild animals are kept, sold, and butchered in unsanitary markets in southern China, where residents with famously omnivorous appetites pay high prices to eat such delicacies.

© 2003 Reuters Limited. All rights reserved.

Editor’s comment. China’s decision to lift the ban on the sale of exotic animals for food is more than just premature—it is also very unfortunate. SARS may have persisted in the human population, with occasional or mild cases. Time will tell. However, if it has not persisted, the Chinese decision to perpetuate the exotic animal–food cycle makes reemergence of SARS from the animal kingdom much more likely, if, as suspected, SARS is related to a species jump. Furthermore, there may be worse infectious diseases than SARS waiting to emerge from that exotic animal–food grouping.

As mentioned in the editorial comment that followed the preceding article, a case of laboratory-diagnosed SARS-associated coronavirus infection was recently reported from Singapore. This mild case, for which there was no known SARS contact, was probably acquired in a research laboratory. The lack of virulence could be related to the season, to the lack of any coinfections occurring during this season, or even to the infecting strain’s loss of virulence during laboratory passage. However, it also provides evidence for the potential existence of mild cases in the community. Such cases, which would be of very low infectivity, could conceivably
allow the virus to emerge in the human population during the fall or winter.

**NEW GENERATION PRION TEST MAY DETECT BSE IN LIVE ANIMALS**

8 September (Reuters Health [Megan Rauscher])—Two researchers from the University of California–San Francisco have developed a rapid, specific, and highly sensitive test for identifying the pathologic infectious prion protein isoform (PrPSc) responsible for bovine spongiform encephalopathy (BSE), which may be applied to living animals.

Current immunoassays used to detect PrPSc in cattle are inadequate for large-scale screening. They can only detect PrPSc after the animal dies, they often produce false-positives, and they are slow to yield results.

“The conformation-dependent immunoassay (CDI) represents a new generation test for prions,” Dr. Jiri G. Safar said in a telephone interview with Reuters Health. He described the test…at the 226th national meeting of the American Chemical Society in New York City.

The CDI is based on a “totally new principle,” according to Dr. Safar. “With the old test, to be able to detect abnormal PrPSc, you have to first destroy the normal counterpart, PrP, which is present in practically every tissue. During the process, you lose a large percentage of the abnormal protein, so you are left with very little to detect,” he explained.

The CDI does not require this degradation process. “It employs antibodies that are able to specifically distinguish the normal protein, which is ubiquitous, and the abnormal protein, which is infectious,” the researcher said.

In a field trial comparing CDI with existing immunoassays, CDI was 100% accurate in detecting PrPSc in the brains of 11,000 slaughtered cows in Spain, the United Kingdom, and Germany.

In transgenic mice that overexpress bovine prion protein and are very susceptible to BSE, the CDI was able to detect infectious prions in muscle tissue as early as 2 or 3 weeks after PrPSc inoculation.

Using the CDI, the San Francisco investigators have also consistently detected PrPSc in the blood of rodents experimentally infected with prions.

“The concentration of prions in muscle and blood is 1000-fold lower than in the brain, so you need an extremely sensitive test to be able to detect such a low concentration—and that’s what we think we have,” Dr. Safar told Reuters Health.

“Originally BSE was a European problem, but with the appearance of the first BSE case in Canada, it has reached North America, and it is now a worldwide problem,” Dr. Safar said.

He predicted that a tissue or blood test for BSE in live animals could be available in a year.

The CDI may eventually be used to screen patients for the human form of BSE, variant Creutzfeldt-Jakob disease (vCJD), thought to be acquired from the consumption of BSE-infected beef products.

The CDI technology is licensed to InPro Biotechnology, Inc., of San Francisco, a company founded by Dr. Safar’s coinvestigator, Dr. Stanley Prusiner, who first discovered that abnormal prion proteins can cause disease, an accomplishment that won him a Nobel Prize in 1997.

© 2003 Reuters Limited. All rights reserved.

**US TRIES NEW TREATMENT FOR WEST NILE INFECTION**

9 September (Reuters Health)—US researchers said they were trying out a new treatment for West Nile virus infection, using immune globulin from Israelis who have survived infection.

The passive immunization is experimental but may offer short-term protection to people most at risk of serious complications of the virus, which include encephalitis brain inflammation.

West Nile virus, first reported in the United States in 1999, has infected more than 2500 people and killed 47 this year, according to the US Centers for Disease Control and Prevention.

“West Nile virus has emerged as a problem in the United States again this year, and public health officials are particularly concerned because the disease appears to be spreading more quickly and more widely than last year,” National Institute of Allergy and Infectious Diseases (NIAID) Director Dr. Anthony Fauci said in a statement.

“Currently, clinicians can provide only supportive care for patients infected with West Nile virus,” he added. “We hope that the results from this study will ultimately give physicians and their patients a useful treatment option.”

West Nile virus has been reported for half a century in Africa and more recently in southern Europe. The NIAID-led researchers will use immune globulin prepared from blood serum of Israeli volunteers who have been exposed to the virus for decades.

Israeli biopharmaceuticals company Omrix has developed the product.

The researchers will be looking for 100 patients at 35 hospitals being treated for life-threatening West Nile virus infections.

© 2003 Reuters Limited. All rights reserved.