

Third session  
Geneva, 27 November-8 December 1995

## JAPAN WORKING PAPER

### BWC DEFINITION: LIST OF BIOLOGICAL AGENTS

#### Introduction

The purpose of this paper is to promote discussion about the list of biological agents. Data are mainly derived from open scientific papers. Because of the different origin of each datum, there may exist some debatable content.

#### Terminology

Medical terms are used from original scientific papers. There are some terms which mean the almost same condition (i.e. CNS damage, encephalitis). We followed the original scientific paper.

#### Notes

Abbreviations are:

|            |   |                 |
|------------|---|-----------------|
| dysfunct.  | : | dysfunction     |
| encephal.  | : | encephalitis    |
| parapreg.  | : | paraplegia      |
| convuls.   | : | convulsions     |
| serolog.   | : | serological     |
| splenomeg. | : | splenomegaly    |
| myocard.   | : | myocardium      |
| septicem.  | : | septicemia      |
| mesentr.   | : | mesenteric      |
| tetracycl. | : | tetracyclin     |
| antibioti. | : | antibiotics     |
| streptomy. | : | streptomycin    |
| erythromy. | : | erythromycin    |
| rifampici. | : | rifampicin      |
| chloramph. | : | chloramphenicol |
| penicilli. | : | penicillin      |

## Characteristics of Biological Agents

| VIRUSES        | weapon | toxicity                    | morbidity       | contag.                 | respirat. | mortality                    | proph/tx             | stability | detection             | production       |
|----------------|--------|-----------------------------|-----------------|-------------------------|-----------|------------------------------|----------------------|-----------|-----------------------|------------------|
| 1. Crimean     | +      | fever<br>hemorrhage         |                 | tick<br>human           |           | 16-19%                       | none                 | 60°C 30m  |                       | possible         |
| 2. Chikungu    | +      | fever<br>arthritis          |                 | mosquito                |           | not fatal                    | vaccine              | 60°C 30m  | antibody              | possible         |
| 3. Dengue      | +      | fever<br>hemorrhage         |                 | mosquito                |           | less than<br>1%<br>5-10%(HT) | vaccine              | 60°C 30m  | EM<br>ELISA           | possible         |
| 4. Eastern     | +      | brain<br>damage             |                 | mosquito                |           | 80% death                    | vaccine              | 60°C 30m  | ELISA                 | possible         |
| 5. Ebola       | +      | fever<br>hemorrhage         |                 | contact<br>inhalation   | (+)       | high<br>80%                  | none                 | 60°C 30m  | ELISA                 | possible         |
| 6. Guanarit    |        |                             |                 |                         |           |                              |                      |           |                       |                  |
| 7. Hanta       | +      | fever<br>kidney             |                 | rodent                  | (+)       | 1-60%                        | vaccine<br>ribavirin | 60°C 30m  | ELISA                 | possible         |
| 8. Hepa A      | +      | liver<br>dysfunct.          |                 | human<br>oral           |           | 0.1%                         | vaccine              | 60°C 30m  | ELISA                 | not<br>possible. |
| 9. Hepa B      |        | liver<br>dysfunct.          |                 | blood                   |           | 0.2-0.5%                     | vaccine              |           | ELISA                 | not<br>possible  |
| 10 .Herpes     |        | fever<br>retina             |                 | oral<br>contact         |           |                              | IDU                  |           | ELISA                 | possible         |
| 11. Influen.   | +      | fever                       |                 | inhalation              | +         | less than<br>1%              | vaccine              |           | ELISA<br>HI           | possible         |
| 12. Jap en     | +      | CNS<br>damage               | 3-5<br>/100,000 | mosquito                | -         | 20%                          | vaccine              | 60°C 30m  | ELISA<br>HI           | possible         |
| 13. Junin      | +      | encephal.                   |                 |                         |           |                              | vaccine              |           | ELISA                 |                  |
| 14. Kyasanu    |        | encephal.                   |                 | tick                    |           | 20%                          | vaccine              |           | agar gel<br>diffusion |                  |
| 15. Lassa f    | +      | 14-16 day<br>death<br>liver |                 | human<br>oral<br>rodent | (+)       | 1.5%                         | vaccine<br>ribavirin | 60°C 30m  | ELISA                 | possible         |
| 16. Louping    |        | meningo-<br>encephal.       |                 |                         |           |                              | vaccine              |           | sero test<br>of CSF   | possible         |
| 17. Lym cho    | +      | CNS                         | 10%             | rodent                  |           |                              | none                 |           | ELISA                 |                  |
| 18. Lyssa      |        | CNS                         | 10-50%          | mammal                  |           | 100%                         | vaccine              | 60°C 30m  | ELISA<br>IFA          | possible         |
| 19.<br>Machupo | +      | CNS<br>DIC                  |                 | rodent                  |           | 16-23%<br>admiss pt          | vaccine              |           |                       |                  |
| 20. Mayaro     |        | fever<br>arthritis          |                 | mosquito                |           | rare                         | none                 | 60°C 30m  | ELISA                 |                  |
| 21. Marburg    | +      | fever<br>hemorrhage         |                 | monkey                  |           | 28%                          | none                 | 60°C 30m  | ELISA                 | possible         |
| 22. Murray     |        | parapleg.                   |                 | bird<br>mosquito        |           | no t fatal                   |                      |           |                       |                  |
|                |        | fever                       |                 |                         |           |                              |                      |           |                       |                  |

|             |        |                 |               |                         |           |               |                      |           |                |            |
|-------------|--------|-----------------|---------------|-------------------------|-----------|---------------|----------------------|-----------|----------------|------------|
| 23. Omusk h |        | hemorrhage      |               | rat                     |           | 0.5-3%        | vaccine              |           | ELISA          |            |
| VIRUSES     | weapon | toxicity        | morbidity     | contag.                 | respirat. | mortality     | proph/tx             | stability | detection      | production |
| 24. Oropauc |        | fever           | 13.6%         | mosquito                |           | not fatal     | none                 |           | ELISA          |            |
| 25. Porvo   |        | skin blood      |               | respiratory transfusion | +         |               | none                 |           | ELISA          | possible   |
| 26. Powassa |        | CNS             | rare          | milk tick               |           |               |                      |           |                | possible   |
| 27. Rift va | +      | encephal. liver |               | mosquito aerosol        | +         | 14%           | vaccine              |           | ELISA          |            |
| 28. Rocio   | +      | CNS             | 38 /1000      | mosquito bird           |           | 15-20%        | no vaccine           |           |                | possible   |
| 29. Sabia   |        |                 |               |                         |           |               | none                 |           |                |            |
| 30. St.Loui | +      | CNS             | 1-800 /100000 | mosquito                |           | 5-30%         | no vaccine           |           | ELISA          | possible   |
| 31. Tick-bo |        | CNS             | 5-20 /100000  | tick                    |           | 20%           | vaccine              | pH resist | ELISA          | possible   |
| 32. Variola | +      | systemic        | 25-40%        | skin inhalation oral    | +         | 5-8%<br>Tx 1% | vaccine<br>methisazo | stable    |                |            |
| 33. Venezue | +      | encephal.       | 90-100%       | mosquito bird           |           | 20%           | vaccine              | 60°C 30m  | ELISA          | possible   |
| 34. Ves sto |        | Influenza like  |               | arthropod               | +         | 0%            |                      | 60°C 30m  | ELISA serolog. | possible   |
| 35. Ves exa |        | enteritis       |               |                         |           |               |                      |           |                |            |
| 36. West en | +      | fever convuls.  | 36 /100000    | mosquito bird           |           | 7-20%         | vaccine              |           |                |            |
| 37. Yellow  | +      | fever liver     |               | mosquito                |           | 30-50%        | vaccine              |           | ELISA          | possible   |

| BACTERIA    | weapon | toxicity              | mobidity | contag.                 | respirat. | mortality | proph/tx              | stability             | detection                    | production |
|-------------|--------|-----------------------|----------|-------------------------|-----------|-----------|-----------------------|-----------------------|------------------------------|------------|
| 1. Baci ant | +      | splenomeg<br>CNS,,GI  |          | skin<br>oral            | +         | 5-100%    | penicillin            | 100°C 30m             | serolog.<br>stain<br>culture | possible   |
| 2. Brucella | +      | fever<br>arthritis    |          | skin<br>inhalation      | +         |           | tetracycline          |                       | serolog.<br>culture.         | possible   |
| 3. Chla psi |        | fever<br>pneumonia    |          | bird                    | +         | 20%       | tetracyclin           | 60°C 10m              | serolog.                     | possible   |
| 4. Clos bot | +      | paralysis             |          | oral                    |           | 7.5%      | toxoid                | spore                 | serolog.                     | possible   |
| 5. Clos per | +      | enteritis<br>gangrene |          | oral<br>contact         |           | 15-60%    | antibiotic            |                       | culture<br>stain             | possible   |
| 6. Clos tet | +      | nervous<br>system     | 90-100%  | skin                    |           | 30-60%    | toxoid<br>penicillin  | spore                 | serolog.                     | possible   |
| 7. Cory dip | +      | paralysis<br>myocard  |          | ingestion<br>inhalation | +         |           | vaccine<br>antibiotic | 58°C 10m<br>water 10d | bacteria.<br>stain           | possible   |
| 8. Ente esc |        | enteritis             |          |                         |           |           | antibiotic            |                       |                              |            |

|             |   |                          |         |                         |   |                    |                            |                    |                       |          |
|-------------|---|--------------------------|---------|-------------------------|---|--------------------|----------------------------|--------------------|-----------------------|----------|
| 9. Fran tul | + | fever<br>pneumonia       | 90-100% | contact<br>oral         | + | 5-8%<br>Tx 1%      | streptomycin<br>vaccine    | 56°C 10m           | serolog.              | possible |
| 10. Legi pn |   | pneumonia                | 0.1-4%  | inhalation              | + | 10%                | erythromycin               | long<br>in water   | serolog.              | possible |
| 11. Lept in |   | fever<br>kidney<br>liver |         | contact                 |   | 5-30%              | doxycycline<br>penicillin  |                    | serolog.              | possible |
|             |   |                          |         |                         |   |                    |                            |                    |                       |          |
| 12. Mycob t | + | tuber-<br>culosis        |         | oral<br>inhalation      | + |                    | BCG<br>rifampicin          | 60°C 30m<br>strong | tuberculin<br>culture | possible |
| 13. Mycopm  |   | pneumonia                | rare    |                         | + |                    | tetracycline               | long<br>in water   | culture<br>serolog.   | possible |
| 14. Noca as |   | abscess<br>CNS           |         | inhalation<br>ingestion | + | 50%                | sulfamide                  |                    | culture<br>stain      | possible |
| 15. Psue ma | + | abscess                  |         | skin<br>inhalation      | + | >100%              | sulfamide                  | 42°C (-)           | culture               | possible |
| 16. Pseu ps | + | septicem.                |         | skin<br>inhalation      | + |                    | tetracycline               |                    | serolog.              | possible |
| 17. Salm ty | + | fever                    |         | oral                    |   | 10%                | chloramphenicol<br>vaccine |                    | culture               | possible |
| 18. Salm sp | + | enteritis<br>fever       |         | oral                    |   | rare               | chloramphenicol<br>vaccine | 60°C<br>10-20m     | culture               | possible |
| 19. Shig.dy | + | diarrhea<br>fever        |         | fly<br>oral             |   | 10%<br>Tx 0.5%     | antibiotic                 | 60°C 30m           | culture               | possible |
| 20. Vibr ch | + | diarrhea                 | 1:400   | fly<br>oral             |   | 10-30%<br>Tx 5-30% | chloramphenicol            | 55°C 30m           | culture               | possible |
| 21. Yer pes | + | lung<br>lymph            |         | skin<br>flea            | + | 30-100%            | tetracycline<br>vaccine    | 55°C 30m           | culture               | possible |
| 22. Yer pt  |   | mesenteric<br>adenitis   | rare    | oral                    |   |                    | penicillin                 |                    | culture               | possible |

| RICKETTSIA  | weapon | toxicity           | morbidity | contag.                  | respirat. | mortality        | proph/tx                   | stability | detection         | production |
|-------------|--------|--------------------|-----------|--------------------------|-----------|------------------|----------------------------|-----------|-------------------|------------|
| 1. Coxi bur | +      | fever<br>pneumonia | 1-10%     | tick<br>sheep<br>ox.skin | +         | <1%              | vaccine<br>tetracycline    |           | serolog.<br>ELISA | possible   |
| 2. Ric moo  |        | fever              |           | flea                     | +         | <5%              | antibiotic                 |           | serolog.          |            |
| 3. Ric pro  | +      | fever<br>CNS       |           | louse<br>inhalation      | +         | 10-40%<br>TX<5%  | vaccine<br>chloramphenicol |           | culture           | possible   |
| 4. Ric qui  |        | fever              |           | louse                    | +         | rare             | tetracycline               |           | serolog.<br>ELISA | possible   |
| 5. Ric ric  | +      | fever<br>CNS       |           | tick<br>louse<br>skin    |           | 10%-90%<br>TX<1% | vaccine<br>tetracycline    |           | serolog.          | possible   |
| 6. Ric spp  |        |                    |           |                          |           |                  | tetracycline               |           | serolog.          | possible   |
| 7. Ric tsu  |        | fever<br>CNS       |           | chigger                  |           | less than<br>1%  | antibiotic                 |           | serolog.<br>ELISA | possible   |

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|  |  |  |  |  |  |  |  |  | IFA |  |
|--|--|--|--|--|--|--|--|--|-----|--|

| FUNGI      | weapon | toxicity  | morbidity | contag.    | respirat. | mortality | proph/tx | stability | detection           | production |
|------------|--------|-----------|-----------|------------|-----------|-----------|----------|-----------|---------------------|------------|
| 1. Cocc im | +      | pneumonia |           | inhalation | —         | 1%        | amphot B |           | serolog.<br>culture | possible   |
| 2. Hist ca | +      | pneumonia |           | inhalation | +         |           | amphot B |           | serolog.<br>culture | possible   |