TEST FORMS – introduction

|  |
| --- |
| Name:  Name of laboratory:  Name of institute:  City:  Country:  E-mail: |

#### Comments:

#### **TEST FORM *– Salmonella***

Survey on breakpoints applied routinely for antimicrobial susceptibility testing of *Salmonella*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Antimicrobial | Interpretation,  Zone diameter (mm) or MIC-value (μg/ml) | | | | |
| <, ≤ | Susceptible | Intermediate | >, ≥ | Resistant |
| Ampicillin, AMP |  |  |  |  |  |
| Cefotaxime, CTX |  |  |  |  |  |
| Cefoxitin, FOX |  |  |  |  |  |
| Ceftazidime, CAZ |  |  |  |  |  |
| Ceftriaxone, CRO |  |  |  |  |  |
| Chloramphenicol, CHL |  |  |  |  |  |
| Ciprofloxacin, CIP |  |  |  |  |  |
| Colistin, COL |  |  |  |  |  |
| Gentamicin, GEN |  |  |  |  |  |
| Meropenem, MER |  |  |  |  |  |
| Nalidixic acid, NAL |  |  |  |  |  |
| Sulfonamides, SMX |  |  |  |  |  |
| Tetracycline, TET |  |  |  |  |  |
| Trimethoprim, TMP |  |  |  |  |  |
| Trimethoprim + sulfamethoxazole, SXT |  |  |  |  |  |

Regarding method used for antimicrobial susceptibility testing of *Salmonella* in this EQAS:

MIC – Microbroth dilution

MIC – Macro dilution (tubes)

MIC – Agar dilution

E-test

Disk diffusion

Tablets – Neo Sensitabs, Rosco

Brand**:**

Incubation conditions:      °C/     h

Regarding antisera used for serotyping of *Salmonella* in this EQAS:

#### Brand of antisera:

#### Comments on which antisera you think is required to complete your serotyping, or other comments:      **TEST FORM *– Salmonella***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strain – *Salmonella* | Antimicrobial | Interpretation | | |
| ≤  > | Zone diameter (mm) or  MIC-value (μg/ml) | S / I / R |
| WHO S-17.1  \_\_\_\_\_     \_\_\_\_\_  Serogroup  \_\_\_\_\_     \_\_\_\_\_  Serotype  \_\_\_\_\_     \_\_\_\_\_  Antigenic formula | Ampicillin, AMP |  |  |  |
| Cefotaxime, CTX |  |  |  |
| Cefoxitin, FOX |  |  |  |
| Ceftazidime, CAZ |  |  |  |
| Ceftriaxone, CRO |  |  |  |
| Chloramphenicol, CHL |  |  |  |
| Ciprofloxacin, CIP |  |  |  |
| Colistin, COL |  |  |  |
| Gentamicin, GEN |  |  |  |
| Meropenem, MER |  |  |  |
| Nalidixic acid, NAL |  |  |  |
| Sulfonamides, SMX |  |  |  |
| Tetracycline, TET |  |  |  |
| Trimethoprim, TMP |  |  |  |
| Trimethoprim + sulfamethoxazole, SXT |  |  |  |

All strains displaying reduced susceptibility to cefotaxime (CTX), ceftazidime (CAZ), and/or ceftriaxone (CRO) could additionally be tested for ampC, ESBL- or carbapenemase-production. See further description in the protocol section 3.3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Did you test for ESBL-production (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Is the strain ESBL-producing (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Indicate the phenotype of the strain: [please select one option]  ESBL-phenotype  ESBL+AmpC-phenotype  AmpC-phenotype  Carbapenemase-phenotype  Other phenotype  No ESBL, AmpC or carbapenemase |  | **Details from laboratory testing** | | | |
|  | **MIC, value or ratio** | | **Disks, zone diameter increase** |
| **CTX:CTX/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
| **CAZ:CAZ/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
|  |  |  | |

Comments:

#### **TEST FORM *– Salmonella***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strain – *Salmonella* | Antimicrobial | Interpretation | | |
| ≤  > | Zone diameter (mm) or  MIC-value (μg/ml) | S / I / R |
| WHO S-17.2  \_\_\_\_\_     \_\_\_\_\_  Serogroup  \_\_\_\_\_     \_\_\_\_\_  Serotype  \_\_\_\_\_     \_\_\_\_\_  Antigenic formula | Ampicillin, AMP |  |  |  |
| Cefotaxime, CTX |  |  |  |
| Cefoxitin, FOX |  |  |  |
| Ceftazidime, CAZ |  |  |  |
| Ceftriaxone, CRO |  |  |  |
| Chloramphenicol, CHL |  |  |  |
| Ciprofloxacin, CIP |  |  |  |
| Colistin, COL |  |  |  |
| Gentamicin, GEN |  |  |  |
| Meropenem, MER |  |  |  |
| Nalidixic acid, NAL |  |  |  |
| Sulfonamides, SMX |  |  |  |
| Tetracycline, TET |  |  |  |
| Trimethoprim, TMP |  |  |  |
| Trimethoprim + sulfamethoxazole, SXT |  |  |  |

All strains displaying reduced susceptibility to cefotaxime (CTX), ceftazidime (CAZ), and/or ceftriaxone (CRO) could additionally be tested for ampC, ESBL- or carbapenemase-production. See further description in the protocol section 3.3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Did you test for ESBL-production (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Is the strain ESBL-producing (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Indicate the phenotype of the strain: [please select one option]  ESBL-phenotype  ESBL+AmpC-phenotype  AmpC-phenotype  Carbapenemase-phenotype  Other phenotype  No ESBL, AmpC or carbapenemase |  | **Details from laboratory testing** | | | |
|  | **MIC, value or ratio** | | **Disks, zone diameter increase** |
| **CTX:CTX/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
| **CAZ:CAZ/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
|  |  |  | |

Comments:

#### **TEST FORM *– Salmonella***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strain – *Salmonella* | Antimicrobial | Interpretation | | |
| ≤  > | Zone diameter (mm) or  MIC-value (μg/ml) | S / I / R |
| WHO S-17.3  \_\_\_\_\_     \_\_\_\_\_  Serogroup  \_\_\_\_\_     \_\_\_\_\_  Serotype  \_\_\_\_\_     \_\_\_\_\_  Antigenic formula | Ampicillin, AMP |  |  |  |
| Cefotaxime, CTX |  |  |  |
| Cefoxitin, FOX |  |  |  |
| Ceftazidime, CAZ |  |  |  |
| Ceftriaxone, CRO |  |  |  |
| Chloramphenicol, CHL |  |  |  |
| Ciprofloxacin, CIP |  |  |  |
| Colistin, COL |  |  |  |
| Gentamicin, GEN |  |  |  |
| Meropenem, MER |  |  |  |
| Nalidixic acid, NAL |  |  |  |
| Sulfonamides, SMX |  |  |  |
| Tetracycline, TET |  |  |  |
| Trimethoprim, TMP |  |  |  |
| Trimethoprim + sulfamethoxazole, SXT |  |  |  |

All strains displaying reduced susceptibility to cefotaxime (CTX), ceftazidime (CAZ), and/or ceftriaxone (CRO) could additionally be tested for ampC, ESBL- or carbapenemase-production. See further description in the protocol section 3.3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Did you test for ESBL-production (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Is the strain ESBL-producing (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Indicate the phenotype of the strain: [please select one option]  ESBL-phenotype  ESBL+AmpC-phenotype  AmpC-phenotype  Carbapenemase-phenotype  Other phenotype  No ESBL, AmpC or carbapenemase |  | **Details from laboratory testing** | | | |
|  | **MIC, value or ratio** | | **Disks, zone diameter increase** |
| **CTX:CTX/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
| **CAZ:CAZ/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
|  |  |  | |

Comments:

#### **TEST FORM *– Salmonella***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strain – *Salmonella* | Antimicrobial | Interpretation | | |
| ≤  > | Zone diameter (mm) or  MIC-value (μg/ml) | S / I / R |
| WHO S-17.4  \_\_\_\_\_     \_\_\_\_\_  Serogroup  \_\_\_\_\_     \_\_\_\_\_  Serotype  \_\_\_\_\_     \_\_\_\_\_  Antigenic formula | Ampicillin, AMP |  |  |  |
| Cefotaxime, CTX |  |  |  |
| Cefoxitin, FOX |  |  |  |
| Ceftazidime, CAZ |  |  |  |
| Ceftriaxone, CRO |  |  |  |
| Chloramphenicol, CHL |  |  |  |
| Ciprofloxacin, CIP |  |  |  |
| Colistin, COL |  |  |  |
| Gentamicin, GEN |  |  |  |
| Meropenem, MER |  |  |  |
| Nalidixic acid, NAL |  |  |  |
| Sulfonamides, SMX |  |  |  |
| Tetracycline, TET |  |  |  |
| Trimethoprim, TMP |  |  |  |
| Trimethoprim + sulfamethoxazole, SXT |  |  |  |

All strains displaying reduced susceptibility to cefotaxime (CTX), ceftazidime (CAZ), and/or ceftriaxone (CRO) could additionally be tested for ampC, ESBL- or carbapenemase-production. See further description in the protocol section 3.3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Did you test for ESBL-production (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Is the strain ESBL-producing (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Indicate the phenotype of the strain: [please select one option]  ESBL-phenotype  ESBL+AmpC-phenotype  AmpC-phenotype  Carbapenemase-phenotype  Other phenotype  No ESBL, AmpC or carbapenemase |  | **Details from laboratory testing** | | | |
|  | **MIC, value or ratio** | | **Disks, zone diameter increase** |
| **CTX:CTX/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
| **CAZ:CAZ/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
|  |  |  | |

Comments:

#### **TEST FORM *– Salmonella***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strain – *Salmonella* | Antimicrobial | Interpretation | | |
| ≤  > | Zone diameter (mm) or  MIC-value (μg/ml) | S / I / R |
| WHO S-17.5  \_\_\_\_\_     \_\_\_\_\_  Serogroup  \_\_\_\_\_     \_\_\_\_\_  Serotype  \_\_\_\_\_     \_\_\_\_\_  Antigenic formula | Ampicillin, AMP |  |  |  |
| Cefotaxime, CTX |  |  |  |
| Cefoxitin, FOX |  |  |  |
| Ceftazidime, CAZ |  |  |  |
| Ceftriaxone, CRO |  |  |  |
| Chloramphenicol, CHL |  |  |  |
| Ciprofloxacin, CIP |  |  |  |
| Colistin, COL |  |  |  |
| Gentamicin, GEN |  |  |  |
| Meropenem, MER |  |  |  |
| Nalidixic acid, NAL |  |  |  |
| Sulfonamides, SMX |  |  |  |
| Tetracycline, TET |  |  |  |
| Trimethoprim, TMP |  |  |  |
| Trimethoprim + sulfamethoxazole, SXT |  |  |  |

All strains displaying reduced susceptibility to cefotaxime (CTX), ceftazidime (CAZ), and/or ceftriaxone (CRO) could additionally be tested for ampC, ESBL- or carbapenemase-production. See further description in the protocol section 3.3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Did you test for ESBL-production (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Is the strain ESBL-producing (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Indicate the phenotype of the strain: [please select one option]  ESBL-phenotype  ESBL+AmpC-phenotype  AmpC-phenotype  Carbapenemase-phenotype  Other phenotype  No ESBL, AmpC or carbapenemase |  | **Details from laboratory testing** | | | |
|  | **MIC, value or ratio** | | **Disks, zone diameter increase** |
| **CTX:CTX/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
| **CAZ:CAZ/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
|  |  |  | |

Comments:

#### **TEST FORM *– Salmonella***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strain – *Salmonella* | Antimicrobial | Interpretation | | |
| ≤  > | Zone diameter (mm) or  MIC-value (μg/ml) | S / I / R |
| WHO S-17.6  \_\_\_\_\_     \_\_\_\_\_  Serogroup  \_\_\_\_\_     \_\_\_\_\_  Serotype  \_\_\_\_\_     \_\_\_\_\_  Antigenic formula | Ampicillin, AMP |  |  |  |
| Cefotaxime, CTX |  |  |  |
| Cefoxitin, FOX |  |  |  |
| Ceftazidime, CAZ |  |  |  |
| Ceftriaxone, CRO |  |  |  |
| Chloramphenicol, CHL |  |  |  |
| Ciprofloxacin, CIP |  |  |  |
| Colistin, COL |  |  |  |
| Gentamicin, GEN |  |  |  |
| Meropenem, MER |  |  |  |
| Nalidixic acid, NAL |  |  |  |
| Sulfonamides, SMX |  |  |  |
| Tetracycline, TET |  |  |  |
| Trimethoprim, TMP |  |  |  |
| Trimethoprim + sulfamethoxazole, SXT |  |  |  |

All strains displaying reduced susceptibility to cefotaxime (CTX), ceftazidime (CAZ), and/or ceftriaxone (CRO) could additionally be tested for ampC, ESBL- or carbapenemase-production. See further description in the protocol section 3.3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Did you test for ESBL-production (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Is the strain ESBL-producing (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Indicate the phenotype of the strain: [please select one option]  ESBL-phenotype  ESBL+AmpC-phenotype  AmpC-phenotype  Carbapenemase-phenotype  Other phenotype  No ESBL, AmpC or carbapenemase |  | **Details from laboratory testing** | | | |
|  | **MIC, value or ratio** | | **Disks, zone diameter increase** |
| **CTX:CTX/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
| **CAZ:CAZ/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
|  |  |  | |

Comments:

#### **TEST FORM *– Salmonella***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strain – *Salmonella* | Antimicrobial | Interpretation | | |
| ≤  > | Zone diameter (mm) or  MIC-value (μg/ml) | S / I / R |
| WHO S-17.7  \_\_\_\_\_     \_\_\_\_\_  Serogroup  \_\_\_\_\_     \_\_\_\_\_  Serotype  \_\_\_\_\_     \_\_\_\_\_  Antigenic formula | Ampicillin, AMP |  |  |  |
| Cefotaxime, CTX |  |  |  |
| Cefoxitin, FOX |  |  |  |
| Ceftazidime, CAZ |  |  |  |
| Ceftriaxone, CRO |  |  |  |
| Chloramphenicol, CHL |  |  |  |
| Ciprofloxacin, CIP |  |  |  |
| Colistin, COL |  |  |  |
| Gentamicin, GEN |  |  |  |
| Meropenem, MER |  |  |  |
| Nalidixic acid, NAL |  |  |  |
| Sulfonamides, SMX |  |  |  |
| Tetracycline, TET |  |  |  |
| Trimethoprim, TMP |  |  |  |
| Trimethoprim + sulfamethoxazole, SXT |  |  |  |

All strains displaying reduced susceptibility to cefotaxime (CTX), ceftazidime (CAZ), and/or ceftriaxone (CRO) could additionally be tested for ampC, ESBL- or carbapenemase-production. See further description in the protocol section 3.3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Did you test for ESBL-production (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Is the strain ESBL-producing (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Indicate the phenotype of the strain: [please select one option]  ESBL-phenotype  ESBL+AmpC-phenotype  AmpC-phenotype  Carbapenemase-phenotype  Other phenotype  No ESBL, AmpC or carbapenemase |  | **Details from laboratory testing** | | | |
|  | **MIC, value or ratio** | | **Disks, zone diameter increase** |
| **CTX:CTX/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
| **CAZ:CAZ/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
|  |  |  | |

Comments:

#### **TEST FORM *– Salmonella***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strain – *Salmonella* | Antimicrobial | Interpretation | | |
| ≤  > | Zone diameter (mm) or  MIC-value (μg/ml) | S / I / R |
| WHO S-17.8  \_\_\_\_\_     \_\_\_\_\_  Serogroup  \_\_\_\_\_     \_\_\_\_\_  Serotype  \_\_\_\_\_     \_\_\_\_\_  Antigenic formula | Ampicillin, AMP |  |  |  |
| Cefotaxime, CTX |  |  |  |
| Cefoxitin, FOX |  |  |  |
| Ceftazidime, CAZ |  |  |  |
| Ceftriaxone, CRO |  |  |  |
| Chloramphenicol, CHL |  |  |  |
| Ciprofloxacin, CIP |  |  |  |
| Colistin, COL |  |  |  |
| Gentamicin, GEN |  |  |  |
| Meropenem, MER |  |  |  |
| Nalidixic acid, NAL |  |  |  |
| Sulfonamides, SMX |  |  |  |
| Tetracycline, TET |  |  |  |
| Trimethoprim, TMP |  |  |  |
| Trimethoprim + sulfamethoxazole, SXT |  |  |  |

All strains displaying reduced susceptibility to cefotaxime (CTX), ceftazidime (CAZ), and/or ceftriaxone (CRO) could additionally be tested for ampC, ESBL- or carbapenemase-production. See further description in the protocol section 3.3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Did you test for ESBL-production (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Is the strain ESBL-producing (ESBL-, AmpC, or carbapenemase-phenotypes)?  Yes  No  Indicate the phenotype of the strain: [please select one option]  ESBL-phenotype  ESBL+AmpC-phenotype  AmpC-phenotype  Carbapenemase-phenotype  Other phenotype  No ESBL, AmpC or carbapenemase |  | **Details from laboratory testing** | | | |
|  | **MIC, value or ratio** | | **Disks, zone diameter increase** |
| **CTX:CTX/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
| **CAZ:CAZ/Cl** | MIC ratio ≥ 8 (synergy)  MIC ratio < 8  Phantom zone (E-test) (synergy)  Deformation (E-test) (synergy)  Not determinable | | Increase  ≥ 5 mm (synergy)  Increase  < 5 mm |
|  |  |  | |

Comments:      

#### **TEST FORM – *E. coli* reference strain**

Susceptibility testing of *E. coli* reference strain ATCC 25922

|  |  |  |
| --- | --- | --- |
| Strain | Antimicrobial | Zone diameter (mm) or  MIC-value (μg/ml) |
| *E. coli* ATCC 25922 | Ampicillin, AMP |  |
| Cefotaxime, CTX |  |
| Cefoxitin, FOX |  |
| Ceftazidime, CAZ |  |
| Ceftriaxone, CRO |  |
| Chloramphenicol, CHL |  |
| Ciprofloxacin, CIP |  |
| Colistin, COL |  |
| Gentamicin, GEN |  |
| Meropenem, MER |  |
| Nalidixic acid, NAL |  |
| Sulfamethoxazole, SMX |  |
| Tetracycline. TET |  |
| Trimethoprim, TMP |  |
| Trimethoprim + Sulphonamides , SXT |  |