Tips & Tricks for the Advanced Expert System™

ID/AST eNewsletter, Vol 2, Fall 2017
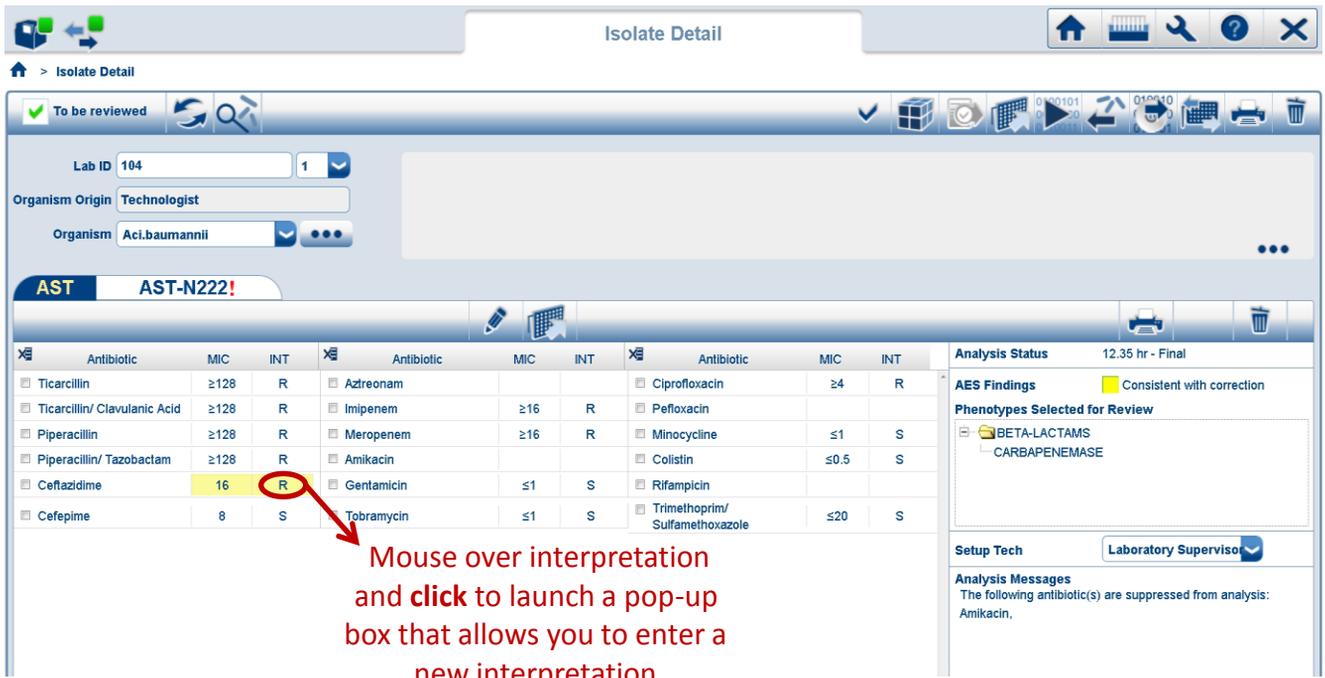
PIONEERING DIAGNOSTICS

BIOMÉRIEUX

How To Change An Antibiotic Interpretation In VITEK® 2 8.01 Software For A Given Isolate

🟩 **Steps for changing an interpretation in VITEK® 2 Systems Web Application:**

1) In isolate detail view, as shown below, the system allows you to change MIC interpretations with a simple click of the mouse. Just mouse over the category interpretation you'd like to change and left-click the mouse as shown below.

Mouse over interpretation and **click** to launch a pop-up box that allows you to enter a new interpretation.

2) The system will then create the drop-down box seen below that allows a different interpretation to be entered.

🟩 **To change an interpretation in traditional VITEK® 2 Systems software (version 8.01 or previous versions) mouse over the category interpretation you'd like to change and hold down the Ctrl key while left-clicking the MIC interpretation with your mouse. Now enter the new interpretation.**

Overview Of The Advanced Expert System™ Detail Screen
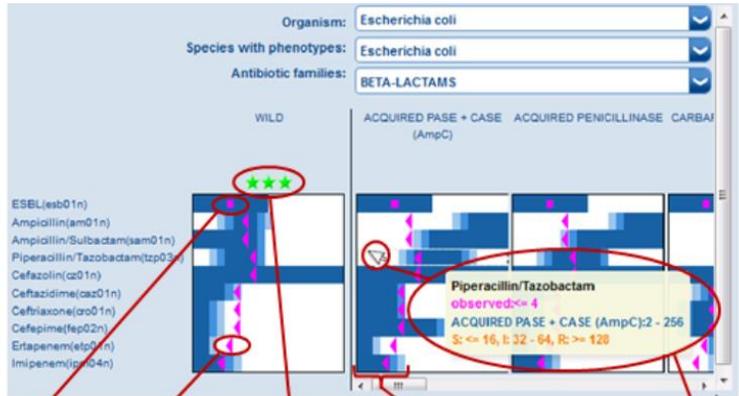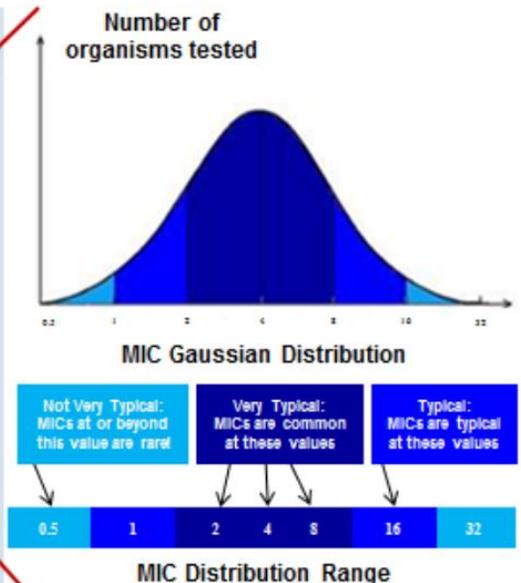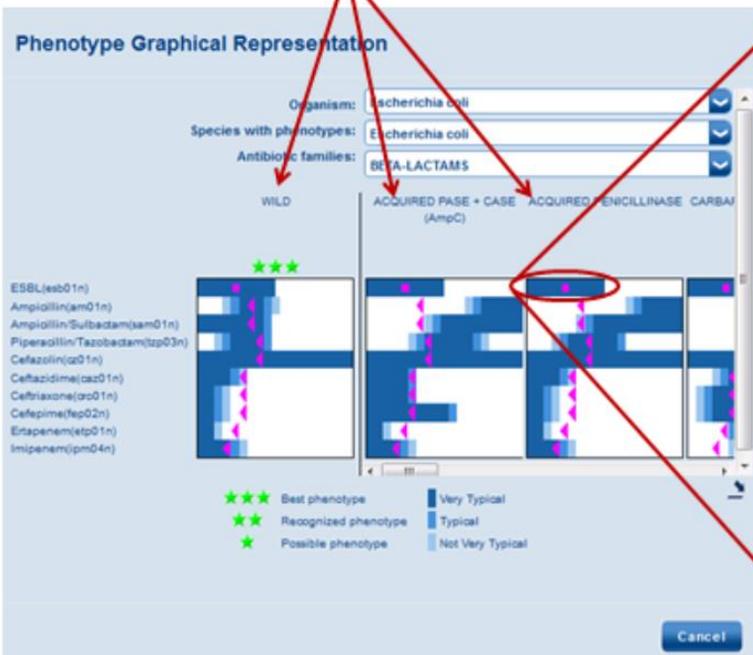
Navigate to the Advanced Expert System™ detail screen by clicking the cube icon ( ). Here you will find a list of phenotypes in the knowledge base for the isolate being viewed. Each bar represents a histogram illustrating the expected MIC distribution for each antimicrobial tested. Matches are indicated with stars.

Organism: Escherichia coli
Species with phenotypes: Escherichia coli
Antibiotic families: BETA-LACTAMS

WILD   ACQUIRED PASE + CASE   ACQUIRED PENICILLINASE   CARBA
(AmpC)

ESBL(esb01n)
Ampicillin(am01n)
Ampicillin/Sulbactam(sam01n)
Piperacillin/Tazobactam(tzp03n)
Cefazolin(cz01n)
Ceftazidime(caz01n)
Ceftriaxone(cro01n)
Cefepime(fep02n)
Ertapenem(etp01n)
Imipenem(ipm04n)

Piperacillin/Tazobactam
observed:<= 4
ACQUIRED PASE + CASE (AmpC):2 - 256
S: <= 16, I: 32 - 64, R: >= 128

Squares indicate an exact MIC value has been determined

Triangles indicate MIC results that are greater than or equal to the highest tested value in the MIC calling range, or less than or equal to the lowest tested value in the tested MIC calling range

Stars indicate the best phenotype match(es):

3 stars = Best match
2 stars = Recognized match
1 star = possible match

Blue shades indicate MIC probabilities for each MIC distribution (refer to FIGURE 1 for details)

Convenient "fly-over" help available for each antimicrobial phenotype combination provides:
• Observed result
• Expected MIC range
• Category interpretation

Phenotypes in the knowledge base for this organism & antibiotic family

Phenotype Graphical Representation

Organism: Escherichia coli
Species with phenotypes: Escherichia coli
Antibiotic families: BETA-LACTAMS

WILD   ACQUIRED PASE + CASE   ACQUIRED PENICILLINASE   CARBA
(AmpC)

ESBL(esb01n)
Ampicillin(am01n)
Ampicillin/Sulbactam(sam01n)
Piperacillin/Tazobactam(tzp03n)
Cefazolin(cz01n)
Ceftazidime(caz01n)
Ceftriaxone(cro01n)
Cefepime(fep02n)
Ertapenem(etp01n)
Imipenem(ipm04n)

★★★ Best phenotype   Very Typical
★★ Recognized phenotype   Typical
★ Possible phenotype   Not Very Typical

Number of organisms tested

MIC Gaussian Distribution

Not Very Typical: MICs at or beyond this value are rare!
Very Typical: MICs are common at these values
Typical: MICs are typical at these values

0.5   1   2   4   8   16   32

MIC Distribution Range

Cancel

3

How To Use Colored Indicators To Identify Results That Need Attention

The VITEK® 2 color codes every isolate to indicate the quality of the match to a known phenotype in the database. These color codes are referred to as "AES Findings", and they are found in isolate detail view as shown below.

All MICs of the identified isolate match the expected MIC distribution for a defined phenotype. The AES knowledge base is very robust covering 141 organisms, and 4,000 phenotypes comprised of 55,000 MIC distributions†.

One MIC value does not fit the expected pattern for a known phenotype for the tested organism. Consistent result with biologic correction.

The isolate could not be matched to a known phenotype because the MIC values of more than 1 antimicrobial does not match a defined MIC distribution in the database.

AST results are available, because the organism is claimed by the AST knowledge base, but AES expert analysis is not performed since the species identified is not claimed in the VITEK® 2 AES database. No data in the Advanced Expert System™ knowledge base.

No AST results or AES expert analysis, because none of the antibiotics have defined breakpoints.
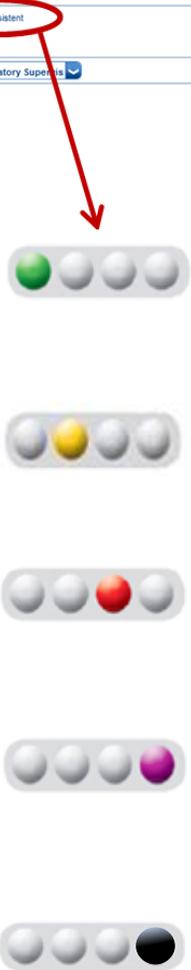
† VITEK® 2 8.01 software

BIOMÉRIEUX

PIONEERING DIAGNOSTICS