

Tuberculin skin testing (TST)

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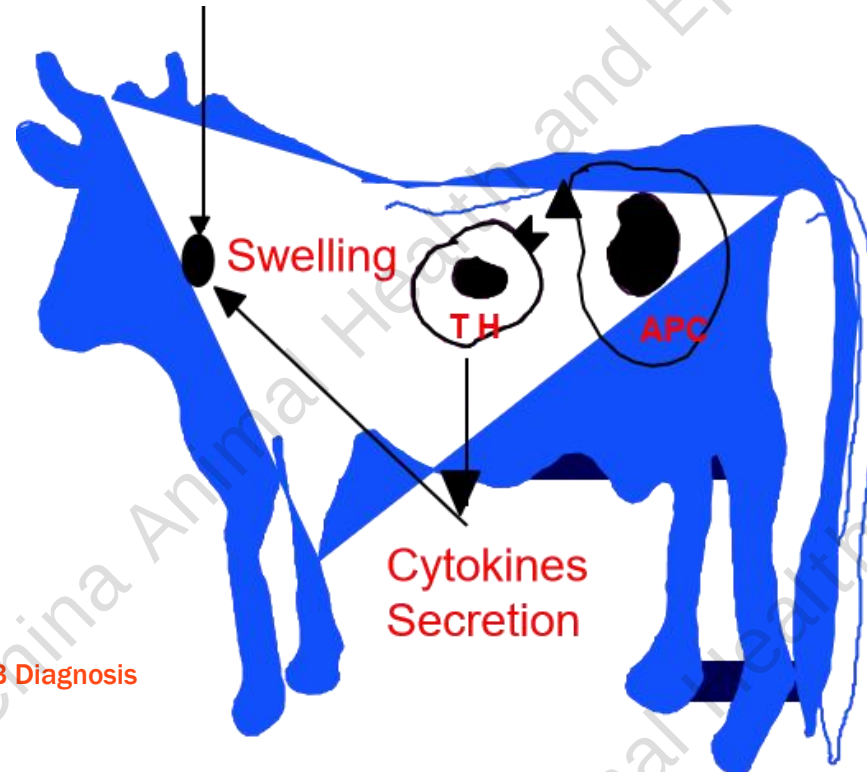


1. Principle of TST

➤ TST is a Cell Mediate Immunity (CMI) or Delayed hypersensitivity.

Allergen is injected to intradermally to cattle, if cattle was infected with *M. bovis*, swelling should be observed at injection site.

Injection site of the allergen (bovine PPD)





- PPD is abbreviation of Purified Protein Derivative, which is produced from cultures of *Mycobacterium Bovis*, such as *M. bovis* AN5 strain recommended by WOAHA.
- Two kinds of PPD are used in TST. **PPD-B** is produced from cultures of *Mycobacterium bovis*, **PPD-A** is produced from cultures of *Mycobacterium abian*.
- Before use, PPD should be diluted to at least 25,000 IU in 1mL sterilized PBS or dH₂O.



- The TST method used in China is referred to national standard of **Diagnostic Techniques for Animal Tuberculosis**, which was released in 2020.

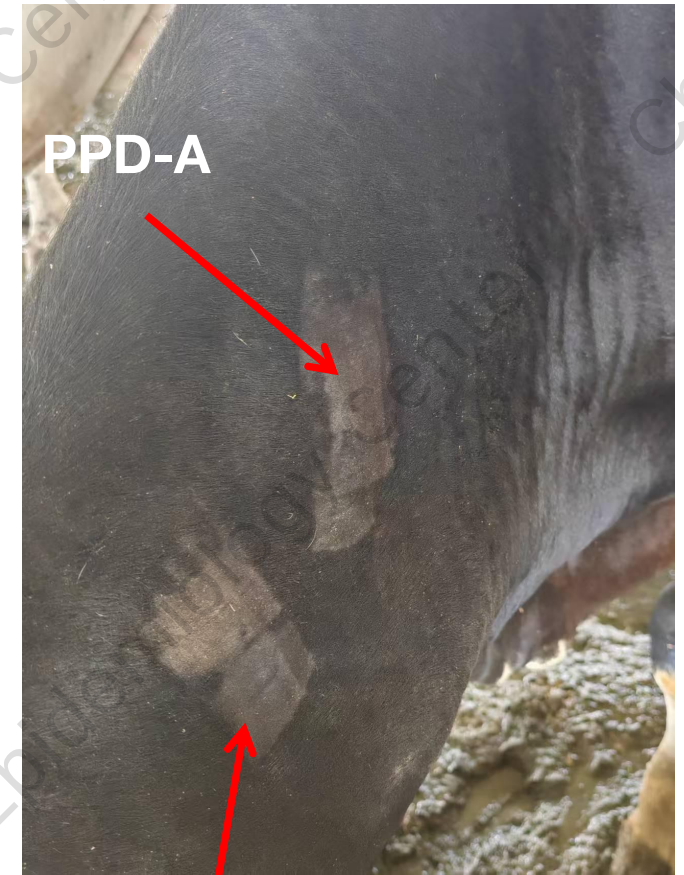




2. Test procedure

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- Single cervical test (SCT).
 - Firstly, the feather on the neck is shaved off with hair clipper.
 - Then, skin thickness is measured with ruler.
 - Finally, 0.1 mL solution containing at least 2,000 IU PPD-B is injected to cervical skin.
- The comparative cervical test (CCT).
 - 0.1 mL solutions PPD-B and PPD-A are injected respectively to two sites in cervical skin. At 15cm apart between two sites.



PPD-B



3. Interpretation of result

- For SCT, after 72 hours, the skin thickness at the injection site is measured again. Then, the difference of skin thickness between two measurements is calculated.

ΔB	Interpretation of result
$\leq 2\text{mm}$	Negative
$> 2 \text{ and } < 4\text{mm}$	Inconclusive
$\geq 4\text{mm}$	Positive



Inclusive and negative animals should be measured again after 96 h and 120 h.



- For CCT, after 72 hours, the skin thickness at the PPD-B site and PPD-A site are measured, and the difference of skin thickness between these two measurements is calculated.

$\Delta B - \Delta A$ (mm)	Interpretation of result
$> 4\text{mm}$	Positive
$> 0 \text{ and } \leq 4$	Inclusive
≤ 0	Negative

Inclusive and negative animals should be measured again.





Thank you!

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