

BCG 東京株の抗結核薬剤感受性について

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Anti-tuberculosis drug susceptibility testing of *Mycobacterium bovis* BCG Tokyo strain.

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【背景】BCG ワクチンはその高い防御効果と病原性がほとんど無いことから、唯一の有効な結核の予防ワクチンとして用いられている。稀に免疫力が低下した宿主で播種性の感染を起こすことがあり、イソニアジド(INH)、リファンピシン(RFP)、ストレプトマイシン(SM)、エタンブトール(EMB)などの有効な抗結核薬がそのような BCG 感染においても用いられる。しかし、これらの抗結核薬に対する BCG ワクチン株の薬剤感受性について検討した報告は少ない。

【目的】BCG 東京製品株に対する抗結核薬の最小発育阻止濃度(MIC)を調べ、薬剤感受性に関するワクチンとしての安全性を確認する。

【方法】BCG 東京株のシードロットと製品株の5ロットについて7H11 寒天培地を使って INH, RFM, SM, EMB の MIC を調べた。

【結果】シードロットと製品株に対する INH の MIC はそれぞれ 0.06µg/ml と 0.125µg/ml であった。RFM, SM, EMB の MIC はそれぞれ 0.25-0.5µg/ml , 0.25µg/ml , 2-4µg/ml であった。

【結論】これらの結果は、BCG 東京株が主要な抗結核薬に対して感受性であり、ワクチン接種後に播種性の感染などの重篤かつ有害な現象が起こった場合でも充分治療可能であることを示している。

Table MIC values of four first-line drugs for the BCG Tokyo strain

| Samples | MIC ($\mu\text{g/ml}$) | | | | | | | | | | | |
|----------|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | INH | | | RMP | | | SM | | | EMB | | |
| | Test 1 | Test 2 | Test 3 | Test 1 | Test 2 | Test 3 | Test 1 | Test 2 | Test 3 | Test 1 | Test 2 | Test 3 |
| Lot A | 0.06 | 0.06 | cont | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 4.0 | 4.0 | 4.0 |
| Lot B | 0.06 | 0.06 | 0.06 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 4.0 | 4.0 | 4.0 |
| Lot C | 0.06 | 0.06 | 0.06 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 4.0 | 4.0 | 4.0 |
| Lot D | 0.06 | 0.06 | 0.06 | 0.5 | 0.5 | 0.5 | 0.25 | 0.25 | 0.25 | 2.0 | 2.0 | 2.0 |
| Lot E | 0.06 | 0.06 | 0.06 | 0.5 | 0.5 | 0.5 | 0.25 | 0.25 | 0.25 | 2.0 | 2.0 | 2.0 |
| Seed lot | 0.125 | 0.125 | 0.125 | ND | ND | ND | ND | ND | ND | ND | ND | ND |

MIC = minimum inhibitory concentration; BCG = bacille Calmette-Guérin; INH = isoniazid; RMP = rifampicin; SM = streptomycin; EMB = ethambutol; cont = contaminated; ND = not done.

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