Production, characterization and purification of monoclonal antibody against *Acinetobacter baumannii*

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**Background:** Pleomorphic *Acinetobacter baumannii* is a highly successful nosocomial pathogen. It is an obligate aerobic, gram-negative bacteria that causes nosocomial pneumonia and meningitis among hospitalized patients. Broad range resistance to multiple antibiotics has been the biggest challenge to treat *A. baumannii* infection. Here, we described the production, characterization, purification and identification of monoclonal antibody specific against the multi-drug resistant *A. baumannii*.

**Methods & Materials:** BALB/c mice were immunized with formaldehyde-fixed *A. baumannii* M28-47 strain. The spleen was removed and fused with myeloma cells. A series of monoclonal antibodies (mAb) specific to *A. baumannii* were produced. Characterization of the mAb was performed using enzyme-linked immunosorbent assay (ELISA) with subclass specific goat antisera. Antibodies were purified by using the protein G-linked magnetic beads. SDS-PAGE and immunoblot were performed to confirm the presence of the heavy and light chain of IgG of the purified antibody. Mass spectrometry was used to further confirm the identity of the antibody. Immunoblotting was performed to detect the *A. baumannii* protein.

**Results:** All the hybridoma clones produced IgG1 subclass antibodies. SDS-PAGE of the purified hybridoma antibody showed the presence of the antibody heavy chain and light chain. The presence was also confirmed by ELISA, immunoblot and mass spectrometry. All the purified antibodies detected *A. baumannii* protein prepared on nitrocellulose membrane from *A. baumannii* cell lysate.

**Conclusion:** Monoclonal antibodies specific against *A. baumannii* was successfully prepared. This mAb could be useful as reagents for studying *A. baumannii*.

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Recurrent urinary tract infection (UTI) in adult females: Long term efficacy of antimicrobial prophylaxis and/or immunotherapy

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**Background:** The objective of this multicenter study was to investigate the long – term preventive effect of chemoprophylaxis with low-dose fluoroquinolones and/or immunotherapy in women with recurrent UTI. Both Uro – Vaxom (OM – 89) and Luivac are extracts of bacterial components with complex immunostimulating activity.

**Methods & Materials:** Adult female patients with at least 3 documented episodes of UTI in a previous year were enrolled in this 12 –months, multicenter study. Patients received continuous chemoprophylaxis with low –dose ciprofloxacin (125 mg orally every other day) and/or immunotherapy with either Uro-Vaxom or Luivac. Primary efficacy criteria were number of UTI episodes over the 12 months treatment period.

**Results:** A total of 178 patients were treated, 89 in the Uro – Vaxom and 89 in the Luivac group, respectively. Mean rate of post baseline UTIs decreased significantly in both treatment groups: in Uro –Vaxom group from 3.54 to 0.48 episode / patient / year and in Luivac group from 3.63 to 0.41 episode /patient/ year (p < 0.001). There were 67.1% patients treated with combination of immunotherapy and quinolone prophylaxis vs. 52.7% patients treated with immunotherapy only, who were UTI – free in 12 –months study period (p = 0.04). In the subgroup receiving continuous antimicrobial prophylaxis with ciprofloxacin (125 mg orally every other day), selection of quinolone – resistant strains was observed in 9 patients (ESBL – producing strains of E. coli and Klebsiella pneumoniae). After 5-years follow – up, there remained 65.0% patients UTI – free in this study period.

**Conclusion:** These results confirm that immunotherapy is more safe and almost as effective as low-dose quinolone prophylaxis for patients on long-term quinolone prophylaxis.

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