

## The HKCD HKSPD Joint Annual Scientific Meeting 2020

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### Immunogenicity of biologics from an immunologist's

Speaker: P Li

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Biologics are large monoclonal antibodies produced by biotechnological methods. They are commonly recognised as "non-self" by the host and generate an immune response. In general, the more humanised the monoclonal antibody molecules, the less immunogenic they are. Immunogenicity occurs in all patients exposed to biologics with variable clinical consequences, depending on a range of drug or patient-specific factors. Anti-drug antibodies (ADA) are produced by B

lymphocytes under the influence of T helper lymphocytes. ADA is often regarded as a measure of immunogenicity. ADA can result in infusion/hypersensitivity reactions, neutralisation of intended biologic effects as well as alteration of drug bioavailability and clearance. The presence of ADA may also be of no clinical consequence. The investigation of ADA is limited by the sensitivity and performance of ADA assays. Strategies to minimise immunogenicity and ADA production include re-engineering of non-human components of biologic molecules, depletion of potential immunogenic T cell epitopes, PEGylation and glycosylation, modification of dosing route and schedules, concomitant immunosuppression, desensitisation and therapeutic drug monitoring.

#### **Learning points:**

The immunogenicity of biologics is mediated by the production of anti-drug antibodies. The humanised the biologics are less immunogenic.