

## Virus-Like Particles (VLPs) adsorption isotherm on Ion-Exchange Absorbents

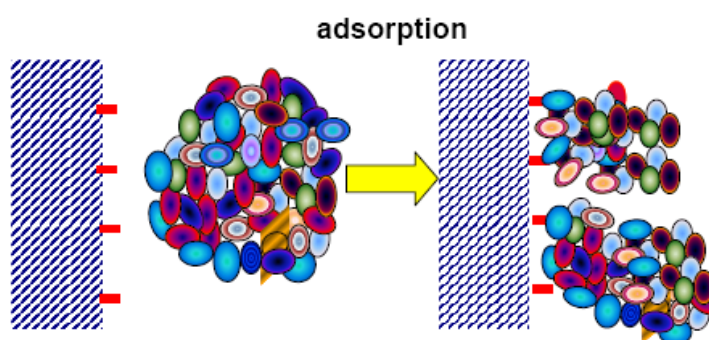
**Supervisor:** Dr. Jingxiu Bi, Prof. Mark Biggs

**Nature of work:** Experimentally investigate virus like particles adsorption and desorption on the surface of ion-exchange adsorbents, mathematic isotherm model relating to the multi-site adsorption will be built.

**Funding:** Via the various University scholarship schemes (see separate information for these).

**Area:** Leading edge of biopharmaceuticals

**Brief description:** Virus-like particles (VLPs) have significant potential in vaccination, gene therapy and drug delivery. However the VLPs macromolecular assembly structure change randomly in the purification process. Protein adsorption isotherms represent thermodynamic properties that play a critical role in chromatography and membrane separation, but the understanding of protein adsorption on solid surfaces remains largely empirical. The aim of this proposal is to investigate experimentally the VLPs adsorption on ion-exchange adsorbents to build the mathematic model of VLPs isotherm by multi-site absorption. This investigation will benefit to develop a novel purification process to obtain the step change of VLPs recovery in downstream processing.



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*There are many more in the areas of recombinant protein expression by animal cell culture, tissue engineering and bioprocess optimization. Feel free to contact me (jingxiu.bi@adelaide.edu.au; +61-8-8303-4118) or drop in to my office (N212) if you want to have further discussion or other possible PhD projects.*