

A-29: Effect of ingested anti-midgut antibodies on the structure of the midgut of *Anopheles tessellatus*.

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Antimosquito antibodies ingested in a blood meal localise in target tissues and modulate mosquito physiology and mosquito - pathogen interactions. We report the results of a study to determine whether effects of antimosquito antibodies are the result of structural changes and/or damage to the midgut.

A group of 3-4 day old *Anopheles tessellatus* from the laboratory colony were fed rabbit blood containing polyclonal antibodies to mosquito midgut tissues by the membrane feeding technique. A control group of mosquitoes were similarly fed blood lacking these antibodies. Blood fed mosquitoes were dissected and midguts fixed in 2.5% glutaraldehyde at 4° overnight, post fixed in 1% OsO₄, dehydrated in ethanol, infiltrated with a mixture of propylene oxide and resin, and embedded in resin. Ultrathin sections were strained in uranyl acetate and lead citrate and viewed in a Jeol 1200 electron microscope.

The midgut of *An. tessellatus* is composed of a single layer of epithelial cells bound by a basal membrane. Microvilli are present on the lumen side. The epithelium consists of digestive and endocrine cells. This basic structure was clearly identified 3 - 48 h post blood ingestion in midguts from both antibody fed and control mosquitoes.

Ingested antibodies did not appear to affect the physiology of digestion. The nucleus remained intact and increase in mitochondria, rough endoplasmic reticulum and storage material were comparable in both treated and control midguts. These studies provide preliminary evidence that antimosquito antibodies do not bring about their effects by causing extensive structural damage to the midgut epithelium.