

 <b>Immune Disease Institute</b>	Office of Technology Development 800 Huntington Avenue Boston, Massachusetts 02115 <a href="http://www.idi.harvard.edu">www.idi.harvard.edu</a>
<b>IDI 02-004</b>	<b>VACUOLINS</b>

**Application:** Research tool, reagent

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***Invention Summary:***

The discovery of vacuolins provides a research tool for studying immunological reactions as well as a set of reagents that can be used to assess the role of lysosomes in resealing, an important cell response to physiologically generated injury.

The formation and trafficking of intracellular vesicles are critical to a variety of biological pathways and events, including protein processing and transport. The present invention provides a class of compounds, called vacuolins, that when administered to cells, cause the vacuolization of such cells. These vacuolins have shown unexpected immunologically relevant activity and so can be utilized to modulate immunological reactions. More specifically, vacuolins can inhibit antigen presentation mediated by MHC class II compounds by reducing externalization or transfer of such compounds. Vacuolins are therefore useful in regulating cellular events that rely on or involve such transfer. Recent studies focused on resealing after wound formation, a process of repair following plasma membrane damage, show that cells heal normally in the presence of vacuolin-1. This finding suggests that lysosomes are not indispensable for resealing as previously thought.

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