

Questions about Edible Vaccines, by W. H. R. Langridge, Sci. Amer., Sept. 2000

- 1) Often vaccines needed to prevent childhood diseases in remote areas of the world must be shipped long distances and must be kept cold to ensure preservation. How would "edible vaccine" improve this situation?
- 2) How can food vaccines be used to treat autoimmunity?
- 3) How can food vaccines potentially be used to treat childhood diabetes, multiple sclerosis and rheumatoid arthritis?
- 4) Why are bananas particularly good candidates for edible vaccines?
- 5) Why do vaccine makers prefer "subunit preparation of antigenic proteins" over killed or weakened forms of an infectious agent? Why are such vaccines costly?
- 6) Are food vaccines mostly like killed/weakened infectious agents or "subunit antigenic proteins?"
- 7) What is mucosal immunity? What is the difference between mucosal immunity and systemic immunity? Which does a better job at stimulating mucosal immunity, edible vaccines or injection?
- 8) What is enterotoxigenic *Escherichia coli*? How does rehydration therapy work? How would edible vaccines improve on this treatment?
- 9) What is the mechanism by which plant vaccine antigens in food can survive gastric secretions and be taken up on the lower GI tract?
- 10) What is "transgenic lettuce?" How does it become transgenic?
- 11) How do "M-cells" facilitate the activity of edible vaccines?
- 12) What is "oral tolerance" and how might it pose a problem in the administration of edible vaccines?