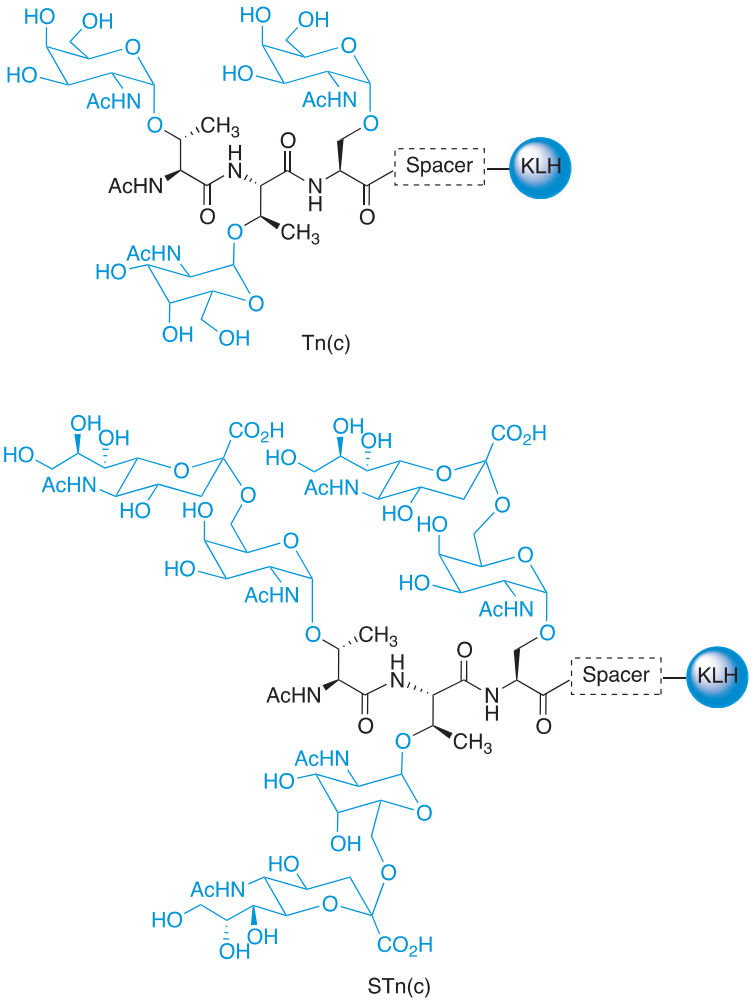

FIGURE 12.9

Monomeric cancer vaccines derived from the mucins.

4.4 PEPTIDE VACCINES

Many clinical trials of peptide vaccines have been carried out since the first clinical trial of a melanoma antigen gene-1 (MAGE1)-derived peptide-based vaccine was reported.[83] The earlier generations of peptide vaccines were composed of one to several human leukocyte antigen class I-restricted CTL-epitope peptides of a single human leukocyte antigen type. Currently, various types of next-generation peptide vaccines are under development.[84]

The development of a vaccine directed against the tumor-specific antigen MAGE-A3 for the treatment of lung cancer has recently been interrupted, although an ongoing phase III trial in melanoma is still in progress. This vaccine is a fusion protein of MAGE-A3 and *Haemophilus influenzae* protein D, combined with a proprietary immunoadjuvant.[85]