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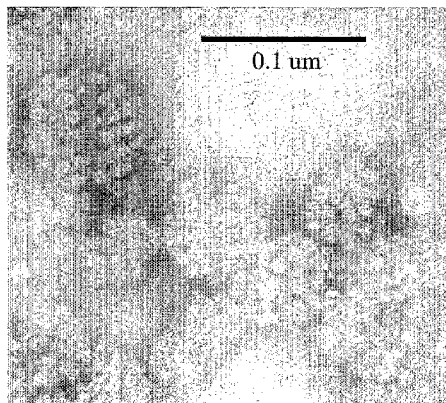
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(54) Title: OPTIMIZED EXPRESSION OF HPV 52 L1 IN YEAST



(57) Abstract: Synthetic DNA molecules encoding the HPV 52 L1 protein are provided. Specifically, the present invention provides polynucleotides encoding HPV 52 L1 protein, wherein said polynucleotides are codon-optimized for high level expression in a yeast cell. In alternative embodiments of the invention, the nucleotide sequence of the synthetic molecule is altered to eliminate transcription termination signals that are recognized by yeast. The synthetic molecules may be used to produce HPV 52 virus-like particles (VLPs), and to produce vaccines and pharmaceutical compositions comprising the HPV 52 VLPs. The vaccines of the present invention provide effective immunoprophylaxis against papillomavirus infection through neutralizing antibody and cell-mediated immunity and may also be useful for treatment of existing HPV infections.

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