

HPV1a

The map of HPV1a was redrawn in 1997 to reflect corrections to the reference sequence, the most important of which, an insertion of an A at position 3884, reunites the putative E5a and E5b ORFs into a single E5 ORF. The insertion also causes the numbering of all downstream features to be increased by one.

HPV1a mRNAs from plantar warts and cultured keratinocytes infected with HPV1 were analyzed by electron microscopy of R-loops and by RT-PCR (1,2). The deduced mRNA structures are shown in the facing map. There are three putative promoters, only one of which has been accurately mapped. The major promoter is located in the E7 ORF and presumably transcribes species A–C, E, and I. The most abundant mRNA in the plantar wart is species A which encodes the E1^AE4 mRNA (1). A minor promoter precedes the E6 ORF and presumably transcribes at least species D which can encode the E6 and E7 proteins. A very minor wart specific promoter was mapped to the URR by primer extension analysis and has start sites from nt 7491–7525 and major start sites at nt 75010, 7511, and 7512 (2). The late mRNAs F–H are transcribed from this promoter. Species F, G, and H contain two weak translation initiation codons in exon 1 which, in species G, are in frame with the L1 ORF and could therefore encode longer L1 proteins. However, the most abundant L1 mRNA (E) is transcribed from the promoter in the E7 ORF. The potential peptides starting in exon 1 of species F, G, and H, here called “X,” are shown as gray boxes because they correspond to none of the recognized ORFs of HPV1a. The early and late poly(A) sites have not been determined experimentally. However, polyadenylation signals (AAUAAA) are present at nt 3985–3990, 7381–7386, and 7427–7432.

1. **Chow, L. T., S. S. Reilly, T. R. Broker, and L. B. Taichman.** 1987. Identification and mapping of human papillomavirus type 1 RNA transcripts recovered from plantar warts and infected epithelial cell cultures. *J.Virol.* **61**:1913-1918.
2. **Palermo-Dilts, D. A., T. R. Broker, and L. T. Chow.** 1990. Human papillomavirus type 1 produces redundant as well as polycistronic mRNAs in plantar warts. *J.Virol.* **64**:3144-3149.

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Maps of Papillomavirus mRNA Transcripts
1995, 1996 and 1997 LANL Human Papillomavirus Database
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