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Human Papillomavirus Type 53

DAN GALLAHAN,[1]† MARTIN MÜLLER,[1] ACHIM SCHNEIDER,[2] HAJO DELIUS,[1] TOMAS KAHN,[1] ETHEL-MICHELE de VILLIERS,[1] AND LUTZ GISSMANN[1]*

Deutsches Krebsforschungszentrum Heidelberg, 6900 Heidelberg,[1] and Universitäts Frauenklinik Ulm, 7900 Ulm,[2] Federal Republic of Germany

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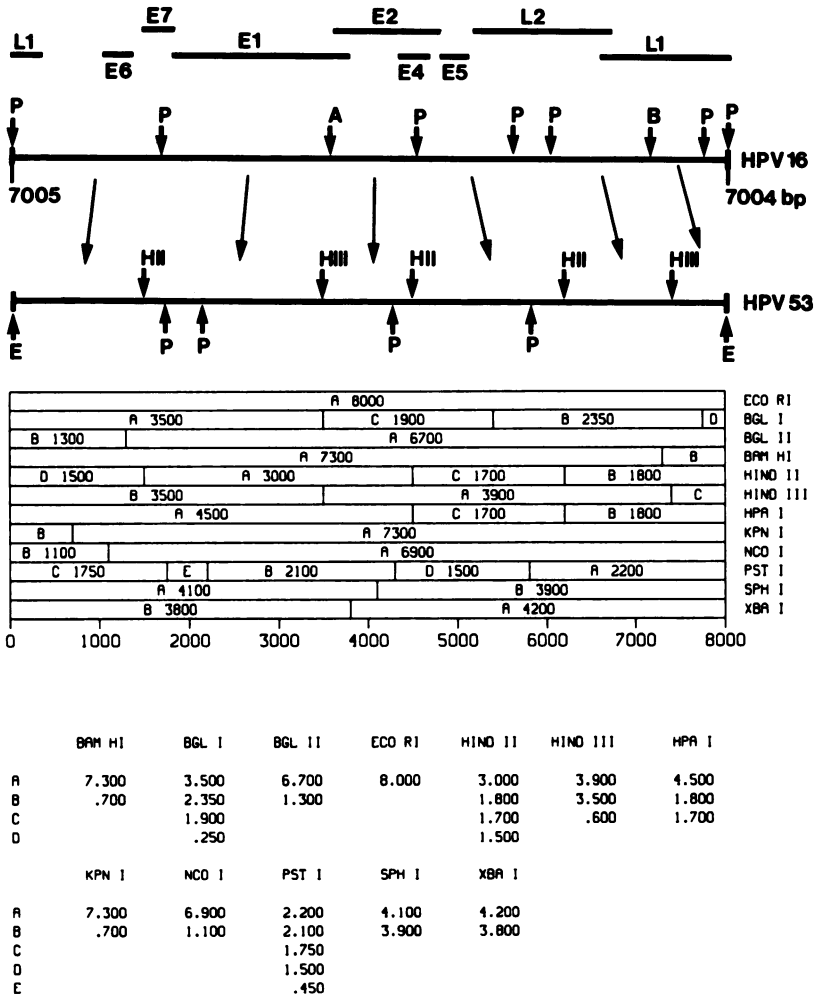
The cloning and partial characterization of the genome of human papillomavirus type 53 is presented. The virus is a distinct type and is most closely related to human papillomavirus type 30.

The DNA of human papillomavirus type 53 (HPV-53) was cloned from a cervical swab of a pregnant woman without cytological or clinical abnormality (1). HPV-53 was shown to react positively with the DNAs of many of the known HPV types when tested by Southern blot hybridization under relaxed conditions. Under stringent hybridization condi-



	BAM HI	BGL I	BGL II	ECO RI	HIND II	HIND III	HPA I
A	7.300	3.500	6.700	8.000	3.000	3.900	4.500
B	.700	2.350	1.300		1.800	3.500	1.800
C		1.900			1.700	.600	1.700
D		.250			1.500		

	KPN I	NCO I	PST I	SPH I	XBA I
A	7.300	6.900	2.200	4.100	4.200
B	.700	1.100	2.100	3.900	3.800
C			1.750		
D			1.500		
E			.450		

FIG. 1. Genomic alignment between HPV-53 (linearized at the unique *Eco*RI site [E]) and HPV-16 (linearized at nucleotide positions 7004-7005) DNAs. Subgenomic fragments of HPV-16 (*Ava*II, A; *Pst*I, P) were labeled with ^{32}P and hybridized to digested HPV-53 DNA (*Bam*HI, B; *Hin*dII, II; *Hin*dIII, III) under nonstringent conditions (T_m − 40°C). The restriction map of HPV-53 is shown. Cleavage sites for various restriction enzymes were determined and plotted on a linear map, using the unique *Eco*RI site as position 0. The sizes of individual fragments are given below the map. Non-cut enzymes are *Cla*I, *Nae*I, *Pvu*I, *Pvu*II, *Sal*I, *Ava*I, *Xho*I, and *Sac*I.

* Corresponding author.
† Present address: National Institutes of Health, Bethesda, MD 20892.

tions, it reacted weakly with HPV types 8, 18, 32, 43, 44, 45, 48, and 51. Strong homology was detected to HPV-30, and the homology was determined by reassociation kinetics to be 20%. Colinearity of the approximately 8-kilobase genome to that of HPV-30 DNA was demonstrated by heteroduplex analysis. The genomic regions of HPV-53 were located by hybridization with subgenomic fragments of HPV-16 (Fig. 1).

It is not known whether HPV-53 is associated with any kind of genital or extragenital lesion. The prevalence of HPV-53 infection in the genital tract, however, appears to be very low, because a screening with ^{32}P-labeled HPV-30 DNA, which is closely related to HPV-53, resulted in only 6 positive samples out of 189 cervical swabs obtained from asymptomatic women.

LITERATURE CITED

1. **Schneider, A., M. Hotz, and L. Gissmann.** 1987. Increased prevalence of human papillomaviruses in the lower genital tract. Int. J. Cancer **40**:198–201.