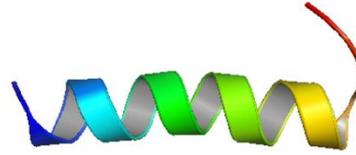


## Supplementary material

(A)



(B)



**Figure S1:** Energy-minimized 3D structure of Hg-CATH and Pb-CATH4. 3D structure of Hg-CATH (A) and Pb-CATH4 (B) were analyzed by LOMETS server and visualized by Pymol after energy minimization was conducted using Gromacs. Both peptides contain alpha-helical structure.

(A)

Peptides	Sequences and secondary structure predictions of mammalian cathelicidins with anti-HSV-1 activity																																								
Hg-CATH	S	K	F	F	R	K	A	R	K	K	L	G	K	G	L	Q	K	I	K	N	V	L	R	K	Y																
	c	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	c																
Pb-CATH4	T	R	S	R	W	R	R	F	I	R	G	A	G	R	F	A	R	R	Y	G	W	R	I	A																	
	c	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	c	c	c	c	c																	
LL-37	L	L	G	D	F	F	R	K	S	K	E	K	I	G	K	E	F	K	R	I	V	Q	R	I	K	D	F	L	R	N	L	V	P	R	T	E	S				
	c	c	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	c	c	c	c	c
BMAP-28	G	G	L	R	S	L	G	R	K	I	L	R	A	W	K	K	Y	G	P	I	I	V	P	I	I	R	I	G													
	c	c	h	h	h	h	h	h	h	h	h	h	h	h	h	h	c	c	c	e	e	e	e	e	e	e	c	c													
Indolicidin	I	L	P	W	K	W	P	W	W	P	W	R	R																												
	c	c	c	c	c	c	c	c	c	c	c	c																													

h (alpha-helix)	e (extended strand)	c (random coil)
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(B)

Peptide	Net charge (+)	Alpha helix (%)	Extended strand (%)	Random coil (%)
Hg-CATH	11	92	0	8
Pb-CATH4	9	75	0	25
LL-37	6	73	0	27
BMAP-28	8	50	25	25
Indolicidin	4	0	0	100

**Figure S2:** Comparison of sequences and secondary structure predictions of five cathelicidins with anti-HSV-1 activity. The sequence-dependent peptide characteristics of the peptides were analysed such as length, hydrophobicity, amphipathicity, net charge and helicity.

**Table S1 : The sequence similarity of five cathelicidins with anti-HSV-1 activity.**

	<b>Hg-CATH</b>	<b>Pb-CATH4</b>	<b>LL-37</b>	<b>BMAP-28</b>	<b>Indolicidin</b>
<b>Hg-CATH</b>	100	20	32	17	0
<b>Pb-CATH4</b>	-	100	14	25	12
<b>LL-37</b>	-	-	100	16	5
<b>BMAP-28</b>	-	-	-	100	10

Note. Global alignment analysis was performed using National Center for Biotechnology Information Search database (NCBI).