The nucleotide sequence of rat heparin binding growth factor 1 (HBGF-1)

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A 1.2 kb HBGF-1 cDNA was isolated from a rat prostate transplantable Dunning tumor 3327 AT-3 cDNA library using the human HBGF-1 cDNA (1) as a probe. The nucleotide sequence shown in fig. 1 was determined by sequencing overlapping cDNA clones, combined with new primers, by the chain termination method.

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gccagggtg ggagggaagg cggtaatctc taggaagcag aaggcaggtt tgcagaggac gctgtaggag agatgaggtg 80
ggggaaacca aggcctgggc ttcccgagc tgcagcaagg ttttggtgct taccacagca gcaggaatgc attgagggat 160
gtgacagtgg aacgcaggtg gcagtgtatc tcaactgtgc tgaaggagcc caaagaacca gcatctgacc tgtcttgaac 240
gcaccatcga cagttgtctg tgagtcATGG CCGAAGGGGA GAGCACAACC TTTCAGGCC TGACCGAGAG GTTCAATCTG 320
CCTCTAGGGA ACTACAAAA ACCCAACTG CTCTACTGCA GCAACGGGG CCACCTCTTG AGGATTCTTC CCGATGGCAC 400
CCTGGATGGG ACCAGGGACA GGAGCGACCA GCACATTTCAG CTGCAGCTCA GTGCGGAAAG CGCGGGCGAA GTGTATATAA 480
AGGGTACAGA GACTGGCCAG TACTTGGCCA TGGACACCGA AGGGCTTTTA TACGGCTCGC AGACACCAAA TGAAGAATGC 560
CTATTCTGGG AAAGGCTAGA AGAAAACCAT TATAACACTT ACACATCCAA GAAGCACGCG GAGAAGAACT GGTTTGTGGG 640
CCTCAAGAAG AACGGGAGT GTAAGCGCGG TCCTCGGACT CACTACGGCC AGAAAGCCAT CTGTGTTCTC CCCCTCCCGG 720
TATCTTCTGA CTAAGgagtc tgttctgggt gctccctatt tttggttgac cctaaatgt tcccttgacc attggtctgc 800
ctaaccctca gccacacagc cctgaatttg taagcagtcg ttctaataag ccagttcact ttccgctgta gcccttcccc 880
accacccagc cacagtttgg aacacgggga ccaaatctac tctaggggac aactggctgg ccagctctagg tctgggttgg 960
gatatccaga tgcttcaggg tacctgtcac aagttggacc tcgtgatata aagagggggg ccatgtgtag catctggagg 1040
gggtcaagaa gtgggttctt ttagtagctg catgctcttt ccccttctga gtaatccctg gttttgagta cccccaggca 1120
cttagcatga ctacccttcc cctaccagc acctcataaa tatcagtaaa gaaactgata gtaaaaaaaa (a)25 1216

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Fig. 1 Nucleotide sequence of rat HBGF-1.

Rat HBGF-1 consists of 156 amino acids, the same as human and bovine HBGF-1 (1,2,3). There is 95% homology between rat and human HBGF-1 and 90% homology between rat and bovine. The amino acid comparison is shown in fig. 2.

Human	1	MAEGEITTFALTEKFNLPNGYKKPKLLYCSNGGHFLRILPDGTVDGTRDRSDQHILQLLSAESVGEVYIKSTETGQYL	80
		* * *	
Rat	1	MAEGEITTFALTERFNLPNGYKKPKLLYCSNGGHFLRILPDGTVDGTRDRSDQHILQLLSAESAGEVYIKSTETGQYL	80
		* * *	
Bovine	1	MAEGETTTFTALTEKFNLPNGYKKPKLLYCSNGGYFLRILPDGTVDGTRDRSDQHILQLLSAESIGEVEYIKSTETGQFL	80
	81	AMTDGLLYGSQTPNEECLFLERLEENHYNTYISKKHAEKNWFVGLKKNGSCKRGRPTHYGGQKAILFLPLPVSSD*	156
		* *	
	81	AMTDEGLLYGSQTPNEECLFLERLEENHYNTYISKKHAEKNWFVGLKKNGSCKRGRPTHYGGQKAILFLPLPVSSD*	156
		* * *	
	81	AMTDGLLYGSQTPNEECLFLERLEENHYNTYISKKHAEKNWFVGLKKNGRSKLGPRTHFGQKAILFLPLPVSSD*	156

Fig. 2 Amino acid sequence of human, rat and bovine HBGF-1. Amino acid differences are indicated by an asterisk.

References: (1) Jaye, M. et al. (1986) *Science* **233**, 541-545. (2) Halley, C. et al. (1988) *Nucleic Acids Res.* **16**, 10913. (3) Crabb, J.W. et al. (1986) *Biochemistry* **25**, 4988-4993.