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SUPPLEMENTARY INFORMATION

PxBLAT: An Ergonomic and Efficient Python Binding Library for BLAT

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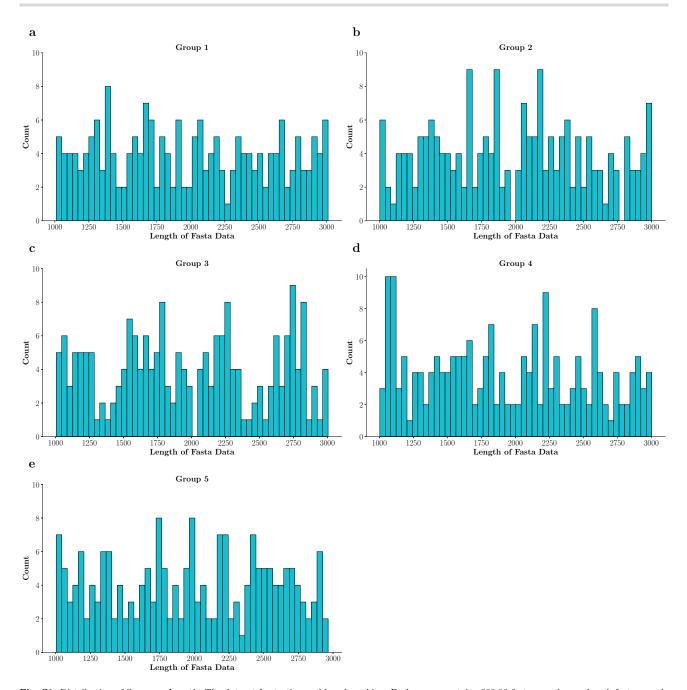


Fig. S1. Distribution of Sequence Length. The dataset for testing and benchmarking. Each group contains 200.00 fasta samples, and each fasta sample has one sequence. (a) The distribution of length in group 1 (b) The distribution of length in group 2 (c) The distribution of length in group 3 (d) The distribution of length in group 4 (e) The distribution of length in group 5

Table S1: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-11648866-11650925	130.00	130.00
${\rm chr} 20\text{-}29850079\text{-}29852595$	1.00	1.00
$\mathrm{chr} 20\text{-}7493878\text{-}7496145$	26.00	26.00
${\rm chr}203015207430153892$	3.00	3.00
$\mathrm{chr}20\text{-}1140095\text{-}1141788$	22.00	22.00

Table S1: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-17520690-17523557	14.00	14.00
chr20-41374266-41376291	12.00	12.00
chr20-63240773-63243242	64.00	64.00
chr20-59286740-59288091 chr20-8061734-8063508	13.00 10.00	13.00 10.00
chr20-34429296-34431248	41.00	41.00
chr20-27977914-27979241	22.00	22.00
chr20-11695455-11697457	20.00	20.00
chr20-41792348-41794797	131.00	131.00
chr20-25858004-25860351	37.00	37.00
chr20-31404034-31407027	25.00	25.00
chr20-15852904-15855300	65.00	65.00
chr20-29917054-29919227	18.00	18.00
chr20-45175162-45177033	2.00	2.00
chr20-43937342-43939507	58.00	58.00
chr20-17073859-17076499	48.00	48.00
chr20-19823346-19824950	32.00	32.00
chr20-28295597-28298301	23.00	23.00
chr20-15826504-15829187	26.00	26.00
chr20-54683378-54684991	47.00	47.00
$\mathrm{chr} 20\text{-}55475241\text{-}55476377$	18.00	18.00
${\rm chr}20\text{-}57949934\text{-}57952283$	74.00	74.00
${\rm chr} 20\text{-}14442978\text{-}14444604$	35.00	35.00
${\rm chr} 20\text{-}51293808\text{-}51295630$	38.00	38.00
${\rm chr} 20\text{-}49194155\text{-}49196823$	165.00	165.00
${\rm chr} 20\text{-}34696351\text{-}34697788$	43.00	43.00
${\rm chr} 20\text{-}16044321\text{-}16045712$	48.00	48.00
${\rm chr} 20\text{-}45309757\text{-}45312553$	39.00	39.00
${\rm chr} 20\text{-}21063232\text{-}21065145$	26.00	26.00
chr20-434138-436331	174.00	174.00
chr20-62110486-62112604	167.00	167.00
chr20-15866914-15868171	15.00	15.00
chr20-62343940-62345043	69.00	69.00
chr20-37168356-37170160	34.00	34.00
chr20-15699683-15701260	15.00	15.00
chr20-44826183-44827333	152.00	152.00
chr20-41538435-41540074	43.00	43.00
chr20-56032843-56034378	18.00	18.00
chr20-36813618-36816516	21.00	21.00
chr20-18637848-18640751 chr20-56294086-56296598	68.00	68.00
	27.00	27.00
chr20-19514094-19515343 chr20-33893321-33895564	2.00 126.00	2.00 126.00
chr20-22282380-22283429	4.00	4.00
chr20-39910629-39912740	84.00	84.00
chr20-40898874-40901542	27.00	27.00
chr20-7536153-7537696	15.00	15.00
chr20-4818626-4819858	60.00	60.00
chr20-64316707-64319236	24.00	24.00
chr20-2960440-2961833	119.00	119.00
chr20-2519249-2521676	46.00	46.00
chr20-11596878-11599706	68.00	68.00
chr20-30829536-30831739	16.00	16.00
chr20-45188854-45190558	3.00	3.00
chr20-47238745-47241145	14.00	14.00
chr20-10538965-10540232	83.00	83.00
chr20-11996320-11998343	87.00	87.00
chr20-23440919-23442976	47.00	47.00

Table S1: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-22451495-22453568	4.00	4.00
chr 20 - 39709672 - 39711911	23.00	23.00
${\rm chr} 20\text{-}29782708\text{-}29784088$	8.00	8.00
chr 20-7911434-7913178	9.00	9.00
${\rm chr} 20\text{-}1508550\text{-}1511129$	193.00	193.00
${\rm chr}20\text{-}41451172\text{-}41452837$	6.00	6.00
$\mathrm{chr} 20\text{-}4003988\text{-}4006545$	29.00	29.00
${\rm chr}20\text{-}10921197\text{-}10923149$	5.00	5.00
chr20-36789016-36790500	186.00	186.00
chr20-9309222-9310479	157.00	157.00
chr20-52532795-52534564	9.00	9.00
chr20-42081563-42082983	4.00	4.00
chr20-12605319-12606971	2.00	2.00
chr20-29389010-29390598	149.00	149.00
chr20-8128132-8130266	170.00	170.00
chr20-11399422-11401237	12.00	12.00
chr20-33251227-33252414 chr20-3342256-3343645	2.00	2.00
chr20-38869283-38872088	92.00 60.00	92.00
chr20-7649152-7650444	60.00	60.00 60.00
chr20-13021673-13023769	58.00	58.00
chr20-3971117-3972667	32.00	32.00
chr20-26232703-26234929	61.00	61.00
chr20-23063517-23064745	7.00	7.00
chr20-39079691-39080763	26.00	26.00
chr20-23882126-23884119	92.00	92.00
chr20-3170215-3172728	44.00	44.00
chr20-49421601-49423499	35.00	35.00
chr20-55380779-55383730	204.00	204.00
${\rm chr} 20\text{-}45794728\text{-}45796900$	164.00	164.00
${\rm chr} 20\text{-}15159613\text{-}15161221$	9.00	9.00
${\rm chr} 20\text{-}62378279\text{-}62380174$	184.00	184.00
$\mathrm{chr} 20\text{-}6934771\text{-}6936584$	116.00	116.00
$\mathrm{chr} 20\text{-}59538484\text{-}59541329$	8.00	8.00
chr20-43661982-43664714	26.00	26.00
chr20-36707842-36709247	85.00	85.00
chr20-33898085-33900435	65.00	65.00
chr20-18062688-18064265	46.00	46.00
chr20-29490152-29491491	23.00	23.00
chr20-11837593-11840377	40.00	40.00
chr20-28934655-28937276	1.00	1.00
chr20-7689471-7691553	18.00	18.00
chr20-1746811-1749803	9.00	9.00
chr20-1261408-1262588	16.00	16.00
chr20-5757029-5759548	29.00 107.00	29.00 107.00
chr20-5361957-5364278 chr20-37305589-37308001	21.00	21.00
chr20-53702835-53705300	148.00	148.00
chr20-7447290-7449191	16.00	16.00
chr20-36626015-36629010	150.00	150.00
chr20-48184357-48185678	2.00	2.00
chr20-4634043-4636057	9.00	9.00
chr20-21292878-21295830	179.00	179.00
chr20-52551672-52553086	7.00	7.00
chr20-55410142-55411547	55.00	55.00
chr20-15164296-15166007	21.00	21.00
chr20-60294852-60297789	197.00	197.00
chr20-47112993-47114241	38.00	38.00
		

Table S1: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
		69.00
chr20-33645643-33648541 chr20-57099663-57101555	62.00	62.00
chr20-32443012-32444528	91.00 1.00	91.00 1.00
chr20-54597242-54598325	31.00	31.00
chr20-28168758-28171348	20.00	20.00
chr20-14255274-14256294	211.00	211.00
chr20-22858139-22859797	8.00	8.00
chr20-42977157-42978222	11.00	11.00
chr20-3890553-3891667	46.00	46.00
chr20-10043505-10044872	33.00	33.00
chr20-47292153-47293840	50.00	50.00
chr20-23406092-23408775	15.00	15.00
chr20-44245002-44246392	36.00	36.00
chr20-30999482-31002350	1.00	1.00
chr20-11990150-11991239	3.00	3.00
chr20-3810992-3812466	197.00	197.00
chr20-22091287-22094021	119.00	119.00
chr 20-47477509-47479589	59.00	59.00
$\mathrm{chr}20\text{-}13750647\text{-}13753070$	44.00	44.00
${\rm chr}20\text{-}61483678\text{-}61484972$	2.00	2.00
${\rm chr} 20\text{-}57584630\text{-}57586794$	13.00	13.00
${\rm chr}20\text{-}17904728\text{-}17906925$	34.00	34.00
${\rm chr} 20\text{-}28086098\text{-}28087474$	19.00	19.00
${\rm chr} 20\text{-}21317295\text{-}21318548$	51.00	51.00
${\rm chr} 20\text{-}42758324\text{-}42759488$	193.00	193.00
${\rm chr} 20\text{-}23580801\text{-}23581810$	23.00	23.00
${\rm chr} 20\text{-}58929386\text{-}58930631$	22.00	22.00
${\rm chr} 20\text{-}6605062\text{-}6607136$	79.00	79.00
${\rm chr} 20\text{-}32987534\text{-}32989963$	169.00	169.00
${\rm chr} 20\text{-}22493043\text{-}22494805$	22.00	22.00
chr20-54190709-54192035	24.00	24.00
chr20-48343887-48346044	2.00	2.00
chr20-10262876-10265171	189.00	189.00
chr20-35374558-35376267	67.00	67.00
chr20-39018648-39021540	83.00	83.00
chr20-37785924-37788264	202.00	202.00
chr20-12575681-12578297	14.00	14.00
chr20-23374273-23375283	1.00	1.00
chr20-14278920-14280350	40.00	40.00
chr20-42778102-42780755	9.00	9.00
chr20-52810557-52811573	83.00	83.00
chr20-52564945-52566606	22.00	22.00
chr20-10598821-10601808	32.00	32.00
chr20-1172826-1175431	87.00	87.00 44.00
chr20-3347653-3350627 chr20-64176870-64179763	44.00	43.00
chr20-42829128-42830258	43.00 100.00	
chr20-40623645-40625957		100.00
chr20-27009229-27011878	187.00 24.00	187.00 24.00
chr20-14732847-14734481		
chr20-12698635-12699679	95.00 2.00	95.00 2.00
chr20-13328590-13330614	13.00	13.00
chr20-22912395-22915205	13.00 12.00	13.00 12.00
chr20-35339375-35342113	48.00	48.00
chr20-19431509-19433187	28.00	28.00
chr20-28727730-28729750	16.00	16.00
chr20-39515806-39517118	2.00	2.00
chr20-21857448-21859310	209.00	209.00
	200.00	200.00

Table S1: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-44751640-44753567	19.00	19.00
${\rm chr}20\text{-}47371415\text{-}47374127$	45.00	45.00
${\rm chr} 20\text{-}24140371\text{-}24142959$	6.00	6.00
${\rm chr} 20\text{-}54083025\text{-}54084528$	41.00	41.00
${\rm chr} 20\text{-}51775800\text{-}51777458$	46.00	46.00
${\rm chr} 20\text{-}59400225\text{-}59402632$	30.00	30.00
${\rm chr} 20\text{-}57144627\text{-}57147621$	47.00	47.00
${\rm chr} 20\text{-}17690928\text{-}17692128$	6.00	6.00
${\rm chr} 20\text{-}31238605\text{-}31240139$	4.00	4.00
${\rm chr} 20\text{-}29259215\text{-}29262074$	4.00	4.00
${\rm chr} 20\text{-}39132690\text{-}39134466$	34.00	34.00
${\rm chr} 20\text{-}44674003\text{-}44676622$	31.00	31.00
${\rm chr} 20\text{-}34435089\text{-}34436815$	13.00	13.00
${\rm chr} 20\text{-}11085268\text{-}11087065$	27.00	27.00
${\rm chr} 20\text{-}42010931\text{-}42012642$	10.00	10.00
${ m chr} 20\text{-}7483012\text{-}7484115$	1.00	1.00
chr20-39873233-39875635	207.00	207.00

Table S2: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-2828159-2830288	134.00	134.00
chr 20-8971949-8973716	18.00	18.00
chr 20-30095884-30097442	17.00	17.00
chr20-51719657-51722053	173.00	173.00
chr 20-33974288-33975838	69.00	69.00
chr 20 - 2278332 - 2280708	15.00	15.00
chr 20-3395428-3397753	86.00	86.00
chr 20-63803154-63805985	43.00	43.00
chr 20-48031931-48034204	44.00	44.00
chr 20-46308727-46309965	6.00	6.00
chr20-14083167-14084282	167.00	167.00
chr 20-45353941-45356038	53.00	53.00
chr 20-63851619-63854055	64.00	64.00
chr 20-50583738-50585129	3.00	3.00
chr 20-13751249-13752454	42.00	42.00
chr20-49452302-49454684	159.00	159.00
${ m chr}20\text{-}18383256\text{-}18384901$	73.00	73.00
chr 20 - 29651400 - 29652794	9.00	9.00
chr 20-40330327-40331786	18.00	18.00
chr20-35818754-35821105	100.00	100.00
${ m chr} 20\text{-}2688118\text{-}2690258$	39.00	39.00
chr20-47399940-47402884	114.00	114.00
chr 20-50899780-50901977	19.00	19.00
chr20-43133225-43135909	192.00	192.00
${ m chr} 20\text{-}46544773\text{-}46547501$	10.00	10.00
chr 20 - 19754747 - 19756349	18.00	18.00
chr 20 - 223022 - 225549	9.00	9.00
${ m chr} 20\text{-}63046239\text{-}63049189$	47.00	47.00
chr 20-57304541-57306258	58.00	58.00
chr 20-38493743-38495091	25.00	25.00
${ m chr} 202026563520267968$	16.00	16.00
${ m chr} 20\text{-}2844781\text{-}2847151$	93.00	93.00
${ m chr} 20\text{-}53725027\text{-}53727516$	36.00	36.00
${\rm chr} 20\text{-}10920657\text{-}10922515$	8.00	8.00

Table S2: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-44371315-44374295	39.00	39.00
chr20-3431376-3433251	202.00	202.00
chr20-39135488-39137700	52.00	52.00
chr20-58745286-58747067	11.00	11.00
chr20-31791374-31793816	205.00	205.00
$\mathrm{chr}20\text{-}36971580\text{-}36972630$	27.00	27.00
$\mathrm{chr}20\text{-}45741446\text{-}45744259$	26.00	26.00
${\rm chr} 20\text{-}28837189\text{-}28840052$	1.00	1.00
${\rm chr} 20\text{-}53642354\text{-}53643485$	103.00	103.00
${\rm chr} 20\text{-}63846146\text{-}63848461$	16.00	16.00
${\rm chr} 20\text{-}24600426\text{-}24602535$	54.00	54.00
chr20-12493566-12496209	178.00	178.00
chr20-24425863-24428862	24.00	24.00
chr20-43710550-43713461	126.00	126.00
chr20-3694835-3697763	73.00	73.00
chr20-49087699-49089567	8.00	8.00
chr20-51447199-51448636	88.00	88.00
chr20-8640913-8642978	6.00	6.00
chr20-53874690-53877592	56.00	56.00
chr20-32558083-32560533	37.00	37.00
chr20-39866491-39868448	32.00	32.00
chr20-57235806-57237280	2.00	2.00
chr20-1551870-1553269	2.00	2.00
chr20-60276391-60278170	31.00	31.00
chr20-47735701-47737760 chr20-47950200-47952033	12.00 26.00	12.00
chr20-37264292-37266206		26.00 95.00
chr20-25972909-25975750	95.00 5.00	5.00
chr20-49810048-49811680	22.00	22.00
chr20-7730740-7733285	45.00	45.00
chr20-51212931-51215436	46.00	46.00
chr20-35679220-35680810	178.00	178.00
chr20-60278816-60280383	4.00	4.00
chr20-1848711-1850476	89.00	89.00
chr20-61487368-61489909	64.00	64.00
chr20-37154283-37155740	35.00	35.00
chr20-10295968-10296987	7.00	7.00
chr 20-61931058-61933207	7.00	7.00
chr20-59480418-59482175	191.00	191.00
$\mathrm{chr}20\text{-}47105521\text{-}47106711$	109.00	109.00
$\mathrm{chr} 20\text{-}28467685\text{-}28469748$	20.00	20.00
${\rm chr}20\text{-}23363427\text{-}23366158$	26.00	26.00
${\rm chr}20\text{-}1681181\text{-}1682213$	28.00	28.00
${\rm chr} 20\text{-}23846256\text{-}23847406$	31.00	31.00
chr 20-55274707-55276347	223.00	223.00
chr20-63347021-63349649	4.00	4.00
chr20-40080433-40082317	75.00	75.00
chr20-9530092-9532401	1.00	1.00
chr20-38108034-38110387	56.00	56.00
chr20-9623861-9625540	5.00	5.00
chr20-58197693-58200651	48.00	48.00
chr20-14255898-14258880	13.00	13.00
chr20-29162172-29164046	18.00	18.00
chr20-3651661-3653661	19.00	19.00
chr20-54221532-54223373	24.00	24.00
chr20-30550507-30552616	3.00	3.00
chr20-54778098-54779435	3.00	3.00
chr20-34554504-34557124	195.00	195.00

Table S2: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-46153137-46156011	61.00	61.00
chr20-19287160-19289355	61.00	61.00
${\rm chr} 20\text{-}15370716\text{-}15372514$	6.00	6.00
${\rm chr}20\text{-}12817209\text{-}12820043$	213.00	213.00
${\rm chr} 20\text{-}26494131\text{-}26495614$	26.00	26.00
${\rm chr}20\text{-}44385075\text{-}44387095$	34.00	34.00
${\rm chr} 203022954930231195$	216.00	216.00
${\rm chr} 20\text{-}58407287\text{-}58410250$	54.00	54.00
${\rm chr} 20\text{-}22419707\text{-}22421972$	5.00	5.00
${\rm chr} 20\text{-}64189992\text{-}64192899$	44.00	44.00
chr20-60602761-60605519	57.00	57.00
chr20-29075089-29077901	22.00	22.00
chr20-51434881-51436198	39.00	39.00
chr20-29854637-29855989	3.00	3.00
chr20-29127537-29128926	16.00	16.00
chr20-3190191-3192877	35.00	35.00
chr20-35916578-35918313	59.00	59.00
chr20-56918427-56920492	34.00	34.00
chr20-41848804-41850751	2.00	2.00
chr20-26793231-26795382	22.00	22.00
chr20-64014289-64015618	42.00	42.00
chr20-39382394-39384063	6.00	6.00
chr20-11297686-11298759 chr20-53600600-53601859	29.00	29.00 25.00
chr20-7664191-7666587	25.00 117.00	
chr20-7004191-7000587	43.00	117.00 43.00
chr20-14086263-14087689	$\frac{45.00}{27.00}$	27.00
chr20-31644053-31645876	202.00	202.00
chr20-49881247-49883414	19.00	19.00
chr20-39045849-39048318	71.00	71.00
chr20-26667702-26668733	24.00	24.00
chr20-35794840-35797816	33.00	33.00
chr20-14041285-14043655	43.00	43.00
chr20-43887719-43889010	77.00	77.00
chr 20-48557745-48559863	75.00	75.00
chr20-13636473-13637790	22.00	22.00
chr 20-60386487-60388629	85.00	85.00
${\rm chr} 20\text{-}46602679\text{-}46604724$	105.00	105.00
chr 20-6342124-6344048	2.00	2.00
${\rm chr} 20\text{-}52509804\text{-}52511365$	24.00	24.00
$\mathrm{chr}20\text{-}8596729\text{-}8597957$	184.00	184.00
${\rm chr} 20\text{-}46229584\text{-}46231629$	10.00	10.00
${\rm chr}20\text{-}32426330\text{-}32428027$	49.00	49.00
chr 20-59309503-59310835	26.00	26.00
chr20-44725323-44726823	169.00	169.00
chr20-3932045-3934068	4.00	4.00
chr20-923271-925546	23.00	23.00
chr20-8844646-8845932	118.00	118.00
chr20-16341258-16343778	11.00	11.00
chr20-11253087-11254915	6.00	6.00
chr20-62299195-62300925	16.00	16.00
chr20-13574193-13576883	36.00	36.00
chr20-47318361-47320801	67.00	67.00
chr20-38097496-38099695	110.00	110.00
chr20-16852028-16854617	9.00	9.00
chr20-48876739-48878931	38.00	38.00
chr20-46598465-46599826 chr20-50733724-50735913	9.00	9.00 31.00
Cm 20-00100124-00100910	31.00	31.00

Table S2: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
${\rm chr} 20\text{-}16694673\text{-}16696959$	41.00	41.00
${\rm chr} 20\text{-}60554396\text{-}60556059$	3.00	3.00
$\mathrm{chr} 20\text{-}7100666\text{-}7102477$	22.00	22.00
chr 20-9052261-9055087	202.00	202.00
${\rm chr}20\text{-}47716012\text{-}47718585$	49.00	49.00
${\rm chr} 20\text{-}55091558\text{-}55093023$	18.00	18.00
${\rm chr} 20\text{-}55647967\text{-}55649485$	37.00	37.00
${\rm chr}20\text{-}12070860\text{-}12072133$	201.00	201.00
${\rm chr} 20\text{-}46040466\text{-}46042741$	17.00	17.00
${\rm chr} 20\text{-}59258885\text{-}59260725$	58.00	58.00
${\rm chr}20\text{-}41615264\text{-}41617426$	6.00	6.00
${\rm chr} 20\text{-}47812008\text{-}47813426$	32.00	32.00
${\rm chr} 20\text{-}53173457\text{-}53174462$	31.00	31.00
${\rm chr}20\text{-}47785182\text{-}47786828$	10.00	10.00
${\rm chr}20\text{-}17404964\text{-}17407937$	2.00	2.00
${\rm chr}20\text{-}33100162\text{-}33102029$	19.00	19.00
${\rm chr} 20\text{-}38669941\text{-}38671179$	89.00	89.00
${\rm chr} 20\text{-}24203548\text{-}24204576$	1.00	1.00
${\rm chr} 20\text{-}56658618\text{-}56660794$	26.00	26.00
${\rm chr} 20\text{-}9502811\text{-}9505031$	39.00	39.00
${\rm chr} 20\text{-}444175\text{-}446235$	55.00	55.00
${\rm chr} 20\text{-}64042363\text{-}64044772$	66.00	66.00
${\rm chr} 20\text{-}42146908\text{-}42148554$	5.00	5.00
${\rm chr} 20\text{-}31814615\text{-}31816841$	14.00	14.00
$\mathrm{chr} 20\text{-}7185589\text{-}7186727$	23.00	23.00
${\rm chr} 20\text{-}4210142\text{-}4212478$	108.00	108.00
${\rm chr} 20\text{-}2738418\text{-}2740895$	40.00	40.00
${\rm chr} 20\text{-}24397070\text{-}24398500$	172.00	172.00
${\rm chr}20\text{-}62308298\text{-}62309851$	1.00	1.00
${\rm chr} 20\text{-}25326590\text{-}25328009$	35.00	35.00
${\rm chr} 20\text{-}16727307\text{-}16729492$	45.00	45.00
${\rm chr}20\text{-}38178690\text{-}38181407$	26.00	26.00
${\rm chr} 20\text{-}23745409\text{-}23746596$	4.00	4.00
${\rm chr} 20\text{-}28209126\text{-}28211757$	22.00	22.00
${\rm chr} 20\text{-}14538504\text{-}14540773$	3.00	3.00
${\rm chr} 20\text{-}18389195\text{-}18390366$	1.00	1.00
${\rm chr} 20\text{-}48698281\text{-}48699926$	90.00	90.00
${\rm chr} 20\text{-}17745800\text{-}17748778$	21.00	21.00
${\rm chr} 20\text{-}17202460\text{-}17203460$	18.00	18.00
${\rm chr} 20\text{-}3858012\text{-}3859518$	62.00	62.00
${\rm chr} 20\text{-}38806155\text{-}38807719$	5.00	5.00
${\rm chr} 20\text{-}59941646\text{-}59943512$	10.00	10.00
${\rm chr} 20\text{-}18936575\text{-}18939153$	12.00	12.00
${\rm chr} 20\text{-}45510964\text{-}45512824$	41.00	41.00
${\rm chr} 20\text{-}26624053\text{-}26625245$	21.00	21.00
chr20-37191072-37192377	38.00	38.00

Table S3: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-32029134-32032031	93.00	93.00
${\rm chr} 20\text{-}38052616\text{-}38054138$	32.00	32.00
${\rm chr} 20\text{-}2602976\text{-}2605324$	19.00	19.00
${ m chr} 20\text{-}42169915\text{-}42172757$	15.00	15.00
${\rm chr} 20\text{-}62125729\text{-}62128471$	19.00	19.00

Table S3: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-2162753-2164165	5.00	5.00
chr20-34630972-34632436	113.00	113.00
${\rm chr} 20\text{-}6611620\text{-}6614440$	152.00	152.00
${\rm chr}20\text{-}19300360\text{-}19302642$	6.00	6.00
${\rm chr} 20\text{-}25189802\text{-}25191365$	154.00	154.00
${\rm chr}20\text{-}15951964\text{-}15953450$	26.00	26.00
${\rm chr}20\text{-}47285001\text{-}47287102$	52.00	52.00
${\rm chr} 20\text{-}22548369\text{-}22549974$	9.00	9.00
chr 20 - 24725480 - 24727693	52.00	52.00
chr20-55633941-55636718	5.00	5.00
chr20-30324027-30326285	30.00	30.00
chr20-34789703-34791591	27.00	27.00
chr20-22886111-22887126	5.00	5.00
chr20-52373722-52374925	52.00	52.00
chr20-62594615-62596270	61.00	61.00
chr20-23567798-23569994	5.00	5.00
chr20-52746782-52748970	26.00	26.00
chr20-63919107-63920159 chr20-37603411-37606081	20.00	20.00
chr20-45549091-45551404	21.00	21.00
chr20-45549091-45551404 chr20-24122821-24124880	167.00 2.00	167.00 2.00
chr20-39384970-39386746	$\frac{2.00}{47.00}$	$\frac{2.00}{47.00}$
chr20-56953750-56954962	11.00	11.00
chr20-27265832-27268665	27.00	27.00
chr20-989008-991475	96.00	96.00
chr20-13233506-13234845	9.00	9.00
chr20-54079315-54081921	56.00	56.00
chr20-22276591-22279281	202.00	202.00
chr20-32344273-32347087	26.00	26.00
chr20-14761627-14763228	15.00	15.00
chr20-24471803-24474607	7.00	7.00
${\rm chr}20\text{-}22305788\text{-}22308754$	43.00	43.00
${\rm chr}20\text{-}63927315\text{-}63929626$	54.00	54.00
${\rm chr} 20\text{-}33534721\text{-}33537439$	158.00	158.00
${\rm chr}20\text{-}53020990\text{-}53022920$	33.00	33.00
${\rm chr}20\text{-}44701412\text{-}44703325$	34.00	34.00
chr20-63523339-63524524	190.00	190.00
chr20-39750571-39752199	50.00	50.00
chr20-47879542-47880820	162.00	162.00
chr20-12949055-12950079	1.00	1.00
chr20-37737796-37740734	26.00	26.00
chr20-17600492-17603407	68.00	68.00
chr20-40848143-40849212	2.00	2.00
chr20-33135173-33136880	131.00	131.00
chr20-39118192-39119260	4.00	4.00
chr20-27690465-27692366	23.00	23.00
chr20-37858061-37860321	49.00	49.00
chr20-12405605-12407882	6.00	6.00
chr20-57386121-57387852	70.00	70.00
chr20-34902889-34905611 chr20-52070637-52073331	39.00	39.00
chr20-52070637-52073331 chr20-40779660-40781751	35.00 47.00	35.00 47.00
chr20-40779660-40781751 chr20-31098450-31100717	47.00 3.00	3.00
chr20-29969458-29971235	18.00	18.00
chr20-13789470-13791842	152.00	152.00
chr20-26814485-26817257	22.00	22.00
chr20-40740691-40742983	29.00	29.00
chr20-49955693-49958425	183.00	183.00

Table S3: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-37813305-37814584	9.00	9.00
chr20-18255943-18258048	64.00	64.00
chr20-63109432-63111043	34.00	34.00
chr20-14211039-14213272	9.00	9.00
chr20-17100441-17103140	9.00	9.00
chr20-2866996-2869328	38.00	38.00
chr 20-53703835-53705398	158.00	158.00
${\rm chr}20\text{-}51431118\text{-}51433743$	56.00	56.00
chr 20-6192786-6193790	196.00	196.00
${\rm chr}20\text{-}10748356\text{-}10751019$	35.00	35.00
${\rm chr}20\text{-}33974548\text{-}33976407$	44.00	44.00
${\rm chr}20\text{-}32270385\text{-}32273111$	20.00	20.00
${\rm chr}20\text{-}36902282\text{-}36904506$	28.00	28.00
chr 20-198832-201190	40.00	40.00
$\mathrm{chr}20\text{-}7927314\text{-}7928574$	27.00	27.00
${\rm chr}20\text{-}17899461\text{-}17900502$	58.00	58.00
${\rm chr}20\text{-}11120841\text{-}11122366$	23.00	23.00
chr 20-59407661-59409193	27.00	27.00
${\rm chr} 20\text{-}35649824\text{-}35652625$	5.00	5.00
chr20-30688628-30690580	48.00	48.00
chr20-49466264-49467309	5.00	5.00
chr20-63692672-63694078	2.00	2.00
chr20-12570747-12573421	5.00	5.00
chr20-8512304-8514491	20.00	20.00
chr20-24204303-24205314	2.00	2.00
chr20-11639430-11641175	20.00	20.00
chr20-26938330-26940788	24.00	24.00
chr20-17587799-17589501	209.00	209.00
chr20-26384682-26386149	23.00	23.00
chr20-46308421-46310414	41.00	41.00
chr20-44079162-44081096	23.00	23.00
chr20-21475551-21476686	50.00	50.00
chr20-13972488-13974627	44.00	44.00
chr20-45697903-45699479	88.00	88.00
chr20-24838480-24839925	11.00	11.00
chr20-7742386-7745111	4.00	4.00
chr20-56522851-56524815	12.00	12.00
chr20-22497057-22499773	16.00	16.00
chr20-51998729-52000293	22.00	22.00
chr20-38767581-38768689 chr20-19863311-19865822	5.00	5.00
chr20-19805311-19805822	56.00	56.00
chr20-15012779-15015584	226.00 8.00	226.00 8.00
chr20-5041846-5044587	56.00	56.00
chr20-580210-582022	35.00	35.00
chr20-15328579-15331324	42.00	42.00
chr20-49481967-49483214	17.00	17.00
chr20-5260817-5262044	5.00	5.00
chr20-23340929-23343084	102.00	102.00
chr20-2269716-2270774	189.00	189.00
chr20-46399947-46401667	31.00	31.00
chr20-10815100-10817410	32.00	32.00
chr20-45864818-45866440	53.00	53.00
chr20-45489949-45492069	35.00	35.00
chr20-21302718-21304312	1.00	1.00
chr20-9931834-9933992	5.00	5.00
chr20-56295194-56296721	5.00	5.00
chr20-38225781-38227971	18.00	18.00
	10.00	10.00

Table S3: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
${\rm chr} 20\text{-}18585659\text{-}18587381$	35.00	35.00
${\rm chr}20\text{-}16940912\text{-}16942721$	39.00	39.00
$\mathrm{chr}20\text{-}3758200\text{-}3759977$	4.00	4.00
${\rm chr}20\text{-}11807056\text{-}11808124$	3.00	3.00
chr 20-127575-129488	93.00	93.00
chr 20-40755444-40756701	5.00	5.00
${\rm chr}20\text{-}21011682\text{-}21013735$	2.00	2.00
chr20-10119043-10120171	59.00	59.00
chr20-1313128-1315640	18.00	18.00
chr20-11712977-11715178	142.00	142.00
chr20-34597997-34600726	28.00	28.00
chr20-53048517-53050101	29.00	29.00
chr20-15161566-15163488	8.00	8.00
chr20-15137364-15139959	203.00	203.00
chr20-60342420-60345056	94.00	94.00
chr20-55169861-55170982	156.00	156.00
chr20-24314101-24316265	27.00	27.00
chr20-53183314-53186148	16.00	16.00
chr20-43887385-43889661	75.00	75.00
chr20-59470391-59471545	1.00	1.00
chr20-53159093-53161302	35.00	35.00
chr20-5895129-5896312	26.00	26.00
chr20-25292499-25293803	3.00 41.00	3.00
chr20-34161145-34162369 chr20-45868564-45870103	74.00	41.00 74.00
chr20-4887453-4889888	3.00	3.00
chr20-39559840-39561722	9.00	9.00
chr20-33221436-33223116	56.00	56.00
chr20-755464-758088	35.00	35.00
chr20-1111176-1112831	46.00	46.00
chr20-2802607-2803838	36.00	36.00
chr20-38997152-38999498	22.00	22.00
chr20-5049946-5052675	35.00	35.00
chr20-48767423-48769196	48.00	48.00
chr20-2659893-2661452	56.00	56.00
chr20-49121260-49124086	21.00	21.00
chr20-54247731-54250009	75.00	75.00
chr20-8334685-8337480	34.00	34.00
chr20-1762478-1764560	46.00	46.00
chr20-53286968-53289954	23.00	23.00
chr20-23613637-23615158	53.00	53.00
chr20-7135001-7136753	88.00	88.00
${\rm chr} 20\text{-}59872605\text{-}59875175$	5.00	5.00
${\rm chr}20\text{-}33944307\text{-}33946354$	27.00	27.00
${\rm chr}20\text{-}29344297\text{-}29347205$	8.00	8.00
${\rm chr}20\text{-}28334593\text{-}28336360$	22.00	22.00
${\rm chr}20\text{-}49230825\text{-}49232042$	66.00	66.00
${\rm chr} 20\text{-}48044237\text{-}48045631$	3.00	3.00
${\rm chr} 20\text{-}26227485\text{-}26229228$	5.00	5.00
${\rm chr} 20\text{-}26487906\text{-}26489572$	25.00	25.00
${\rm chr} 20\text{-}11596974\text{-}11599728$	65.00	65.00
${\rm chr} 20\text{-}45661385\text{-}45663135$	194.00	194.00
${\rm chr} 20\text{-}23562380\text{-}23564047$	2.00	2.00
${\rm chr} 20\text{-}5735736\text{-}5738602$	12.00	12.00
${\rm chr} 20\text{-}55535504\text{-}55537712$	3.00	3.00
${\rm chr} 20\text{-}45493939\text{-}45496533$	99.00	99.00
chr20-25430083-25432571	107.00	107.00
chr20-2981029-2982513	77.00	77.00
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Table S3: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-49523722-49525938	32.00	32.00
${\rm chr} 20\text{-}27912294\text{-}27914399$	20.00	20.00
${\rm chr}20\text{-}15366252\text{-}15368022$	33.00	33.00
${\rm chr} 20\text{-}40846798\text{-}40849784$	29.00	29.00
${\rm chr} 20\text{-}20650550\text{-}20653192$	59.00	59.00
${\rm chr}20\text{-}13545370\text{-}13547154$	2.00	2.00
${ m chr} 20\text{-}27596727\text{-}27598551$	19.00	19.00
${\rm chr} 20\text{-}3394620\text{-}3396590$	171.00	171.00
${\rm chr} 20\text{-}1444330\text{-}1446279$	3.00	3.00
${\rm chr}20\text{-}42147101\text{-}42148224$	2.00	2.00
${\rm chr} 20\text{-}60359901\text{-}60361245$	11.00	11.00
${\rm chr} 20\text{-}58137613\text{-}58139410$	3.00	3.00
${\rm chr} 20\text{-}40224761\text{-}40225920$	10.00	10.00
${\rm chr} 20\text{-}57324246\text{-}57325405$	13.00	13.00
${\rm chr}20\text{-}21713213\text{-}21715491$	39.00	39.00
${\rm chr}20\text{-}14037568\text{-}14040191$	83.00	83.00
${\rm chr}20\text{-}16385063\text{-}16388039$	118.00	118.00
chr20-59768230-59769419	5.00	5.00

Table S4: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-31727237-31729024	39.00	39.00
${\rm chr}20\text{-}36152090\text{-}36154966$	151.00	151.00
chr 20-1018906-1020553	11.00	11.00
chr 20-9821106-9823172	75.00	75.00
${\rm chr}20\text{-}52034533\text{-}52037144$	85.00	85.00
${\rm chr}20\text{-}15008181\text{-}15010280$	66.00	66.00
${ m chr} 20\text{-}41851737\text{-}41853531$	6.00	6.00
${\rm chr}20\text{-}29408974\text{-}29411107$	20.00	20.00
${\rm chr} 201095588110957008$	1.00	1.00
${\rm chr}20\text{-}8970270\text{-}8971572$	18.00	18.00
${\rm chr} 20\text{-}2350436\text{-}2352589$	200.00	200.00
${ m chr}20\text{-}35494115\text{-}35496325$	37.00	37.00
${\rm chr} 20\text{-}16994461\text{-}16996880$	203.00	203.00
${\rm chr}20\text{-}1121638\text{-}1123536$	20.00	20.00
${\rm chr}20\text{-}10539946\text{-}10542788$	76.00	76.00
${\rm chr}20\text{-}31981394\text{-}31984035$	24.00	24.00
${\rm chr} 20\text{-}31059406\text{-}31062015$	9.00	9.00
${\rm chr} 20\text{-}23005241\text{-}23006490$	85.00	85.00
${\rm chr} 20\text{-}27678668\text{-}27680740$	22.00	22.00
${\rm chr} 20\text{-}23089029\text{-}23090440$	1.00	1.00
${\rm chr} 20\text{-}18766639\text{-}18768846$	74.00	74.00
${\rm chr} 20\text{-}35270491\text{-}35271927$	24.00	24.00
${\rm chr} 20\text{-}32671767\text{-}32673927$	46.00	46.00
$\mathrm{chr} 20\text{-}5469364\text{-}5470405$	1.00	1.00
${\rm chr} 20\text{-}44586665\text{-}44588074$	3.00	3.00
${\rm chr} 20\text{-}19751371\text{-}19752469$	50.00	50.00
${\rm chr}20\text{-}11475039\text{-}11477338$	4.00	4.00
${\rm chr}20\text{-}52930875\text{-}52933353$	52.00	52.00
${\rm chr}20\text{-}23941121\text{-}23942933$	189.00	189.00
${\rm chr} 201061266710615654$	16.00	16.00
${\rm chr} 20\text{-}39220431\text{-}39222072$	6.00	6.00
${\rm chr} 20\text{-}24056618\text{-}24059198$	190.00	190.00
${\rm chr} 20\text{-}63753892\text{-}63756615$	196.00	196.00

Table S4: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
${\rm chr} 20\text{-}64298054\text{-}64301011$	16.00	16.00
${\rm chr} 20\text{-}43632072\text{-}43634462$	46.00	46.00
${\rm chr} 20\text{-}29402266\text{-}29403661$	49.00	49.00
${\rm chr} 20\text{-}34611441\text{-}34612505$	39.00	39.00
chr20-16219627-16222599	19.00	19.00
chr20-47623287-47624373	18.00	18.00
chr20-37572653-37574987	20.00	20.00
chr20-57328038-57329145	159.00	159.00
chr20-54255861-54257299	11.00	11.00
chr20-17523656-17525455	3.00	3.00
chr20-3054439-3055812	26.00	26.00
chr20-51095602-51096740	8.00	8.00
chr20-26295259-26296843	6.00	6.00
chr20-16956946-16959866	4.00	4.00
chr20-59871467-59873730	18.00	18.00
chr20-12972124-12973571	9.00	9.00
chr20-64187505-64190371	7.00	7.00
chr20-20036801-20038441	54.00	54.00
chr20-52361579-52363650	49.00	49.00
chr20-48763637-48765211	21.00	21.00
chr20-29272745-29274078	3.00	3.00
chr20-6596603-6597647 chr20-25092945-25094053	1.00 38.00	$\frac{1.00}{38.00}$
chr20-23976043-23978934	34.00	34.00
chr20-33528290-33530524	183.00	183.00
chr20-45968564-45971166	41.00	41.00
chr20-29195839-29197450	17.00	17.00
chr20-12991634-12993772	18.00	18.00
chr20-7287285-7289523	45.00	45.00
chr20-12780972-12782351	20.00	20.00
chr20-17273569-17275885	46.00	46.00
chr20-53404329-53405379	8.00	8.00
chr20-32199416-32201827	159.00	159.00
chr20-56899277-56900938	64.00	64.00
chr20-21026086-21027263	198.00	198.00
chr20-29495766-29497356	5.00	5.00
chr20-46509725-46510768	176.00	176.00
chr20-44370323-44372070	36.00	36.00
chr20-34807421-34810326	128.00	128.00
chr20-29310629-29312542	80.00	80.00
chr20-1861413-1862970	10.00	10.00
chr 20 - 13425759 - 13427299	2.00	2.00
chr 20 - 40797946 - 40799834	14.00	14.00
chr 20-9134988-9136715	38.00	38.00
${\rm chr}20\text{-}6129194\text{-}6130506$	20.00	20.00
${\rm chr}20\text{-}32328850\text{-}32331341$	40.00	40.00
${\rm chr}20\text{-}37816931\text{-}37818838$	30.00	30.00
${\rm chr} 20\text{-}43643216\text{-}43645801$	82.00	82.00
${\rm chr} 20\text{-}57951819\text{-}57954389$	39.00	39.00
${\rm chr} 20\text{-}38495333\text{-}38497995$	69.00	69.00
${\rm chr} 20\text{-}23579562\text{-}23580734$	13.00	13.00
${\rm chr} 203247668732477738$	89.00	89.00
${\rm chr} 20\text{-}46657968\text{-}46660258$	17.00	17.00
${\rm chr} 20\text{-}44029371\text{-}44030373$	1.00	1.00
${\rm chr} 20\text{-}19040746\text{-}19042992$	24.00	24.00
${\rm chr} 20\text{-}41547378\text{-}41548428$	5.00	5.00
${\rm chr} 20\text{-}31338848\text{-}31340507$	33.00	33.00
chr20-50733531-50736468	30.00	30.00
	4:	

Table S4: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-23264110-23266210	46.00	46.00
chr20-59975068-59976189	25.00	25.00
chr20-40116512-40117628	2.00	2.00
${\rm chr}20\text{-}34348380\text{-}34351135$	191.00	191.00
$\mathrm{chr}20\text{-}53857114\text{-}53859581$	90.00	90.00
${\rm chr}20\text{-}24510328\text{-}24512009$	40.00	40.00
$\mathrm{chr}20\text{-}2400648\text{-}2401902$	51.00	51.00
${\rm chr} 20\text{-}41951417\text{-}41953958$	8.00	8.00
${\rm chr}20\text{-}10519505\text{-}10521311$	173.00	173.00
chr20-38229341-38232239	39.00	39.00
chr20-1961461-1962512	4.00	4.00
chr20-4493702-4496293	164.00	164.00
chr20-39058190-39059640	65.00	65.00
chr20-11840010-11842763	159.00	159.00
chr20-51385931-51387697	2.00	2.00
chr20-32743241-32746228	61.00	61.00
chr20-36043748-36044868	4.00	4.00
chr20-47940674-47941937	27.00	27.00
chr20-22906294-22908788	8.00	8.00
chr20-46563742-46565560	42.00	42.00
chr20-34970963-34972526	22.00	22.00
chr20-46825075-46827145	11.00	11.00 188.00
chr20-6428315-6430827	188.00 16.00	16.00
chr20-42217777-42219934 chr20-19913134-19914585	34.00	34.00
chr20-37718004-37720318	152.00	152.00
chr20-51873445-51875614	85.00	85.00
chr20-21185966-21187683	41.00	41.00
chr20-36715891-36717659	71.00	71.00
chr20-25706788-25709614	123.00	123.00
chr20-50918346-50919658	55.00	55.00
chr20-19216584-19217715	110.00	110.00
chr20-60913180-60914343	27.00	27.00
chr20-40445916-40447302	2.00	2.00
chr20-39471792-39473038	200.00	200.00
chr20-36763453-36764650	82.00	82.00
${\rm chr}20\text{-}58906803\text{-}58909272$	170.00	170.00
$\mathrm{chr}20\text{-}24358042\text{-}24359864$	9.00	9.00
chr 20-5054910-5055935	113.00	113.00
${\rm chr}20\text{-}39718409\text{-}39719767$	60.00	60.00
${\rm chr} 20\text{-}48995874\text{-}48997427$	47.00	47.00
${\rm chr}20\text{-}11060084\text{-}11062288$	61.00	61.00
${\rm chr} 2030411213043902$	46.00	46.00
chr20-11729530-11731335	4.00	4.00
chr20-6876021-6878545	44.00	44.00
chr20-60459034-60461357	22.00	22.00
chr20-50558110-50560711	68.00	68.00
chr20-1551191-1553332	2.00	2.00
chr20-23189149-23191563	50.00	50.00
chr20-46682255-46683957	5.00	5.00
chr20-46693319-46694364	56.00	56.00
chr20-50170226-50172189	11.00	11.00
chr20-63698924-63701762	5.00	5.00
chr20-62756096-62757580	69.00	69.00
chr20-55371351-55373202	30.00	30.00
chr20-61650045-61652414	3.00	3.00
chr20-33091750-33093858	24.00	24.00
chr20-61216684-61218692	7.00	7.00

Table S4: Comparison of HSPs between BLAT and PxBLAT

chr20-47978091-47980293 85.00 85.00 chr20-16870384-16872626 14.00 14.00 chr20-55265469-55267149 6.00 6.00 chr20-20608914-20611491 36.00 36.00 chr20-29829808-29831310 8.00 8.00 chr20-29829808-29831310 8.00 34.00 chr20-38905281-38906801 57.00 57.00 chr20-5981835-5084428 35.00 35.00 chr20-12399681-12402397 19.00 19.00 chr20-15787670-15789236 10.00 10.00 chr20-61849267-61851471 112.00 112.00 chr20-42224821-42226456 8.00 8.00 chr20-4209973-2202184 2.00 2.00 chr20-44016368-44018208 138.00 138.00 chr20-49116368-44018208 138.00 138.00 chr20-4917083-9419320 19.00 17.00 chr20-8901543-890390 37.00 37.00 chr20-47368389-47371245 181.00 181.00 chr20-47368389-47371245 181.00 19.00 chr20-45577205-455	Data	BLAT	PxBLAT
chr20-16870384-16872626 14.00 14.00 chr20-55265469-55267149 6.00 6.00 chr20-242713744-42715938 38.00 38.00 chr20-59966328-59967826 57.00 57.00 chr20-29829808-29831310 8.00 8.00 chr20-55321262-55323731 34.00 34.00 chr20-5881835-5084428 35.00 35.00 chr20-12399681-12402397 19.00 19.00 chr20-12399681-12402397 19.00 19.00 chr20-61849267-61851471 112.00 112.00 chr20-42732744-42226456 8.00 8.00 chr20-2200973-2202184 2.00 2.00 chr20-44016368-44018208 138.00 138.00 chr20-447132744-42735046 2.00 2.00 chr20-8901543-8903090 37.00 37.00 chr20-9801543-8903090 37.00 17.00 chr20-47368389-47371245 181.00 181.00 chr20-47368389-47371245 181.00 181.00 chr20-49829087-49831301 97.00 97.00 chr20-485577205-4	chr20-47978091-47980293	85.00	85.00
chr20-55265469-55267149 6.00 6.00 chr20-42713744-42715938 38.00 38.00 chr20-20608914-20611491 36.00 36.00 chr20-259966328-59967826 57.00 57.00 chr20-259829808-29831310 8.00 8.00 chr20-55321262-55323731 34.00 34.00 chr20-38905281-38906801 57.00 57.00 chr20-5081835-5084428 35.00 35.00 chr20-15787670-15789236 10.00 10.00 chr20-61849267-61851471 112.00 112.00 chr20-42224821-42226456 8.00 8.00 chr20-2200973-2202184 2.00 2.00 chr20-44016368-44018208 138.00 138.00 chr20-42732744-42735046 2.00 2.00 chr20-8901543-8903090 37.00 37.00 chr20-8901543-8903090 37.00 17.00 chr20-9417083-9419320 19.00 19.00 chr20-47368389-47371245 181.00 181.00 chr20-49829087-49831301 97.00 97.00 chr20-9885847-9887724			
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chr20-52094840-52096680 143.00 143.00 chr20-21563954-21565882 146.00 146.00 chr20-5436550-5437659 70.00 70.00 chr20-63482588-63484649 191.00 191.00 chr20-19772825-19774949 43.00 43.00 chr20-38393781-38395769 19.00 19.00 chr20-34751103-34754059 175.00 175.00 chr20-26987677-26990651 24.00 24.00	chr 20 - 20727967 - 20730763	59.00	59.00
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chr20-26987677-26990651 24.00 24.00	${\rm chr} 20\text{-}38393781\text{-}38395769$	19.00	19.00
	${\rm chr} 20\text{-}34751103\text{-}34754059$	175.00	175.00
chr20-8530344-8531955 41.00 41.00	${\rm chr} 20\text{-}26987677\text{-}26990651$	24.00	24.00
	chr20-8530344-8531955	41.00	41.00

Table S5: Comparison of HSPs between BLAT and PxBLAT

chr20-7777117-7779958 31.00 31.00 chr20-28090646-28093037 21.00 21.00 chr20-28090646-28093037 21.00 21.00 chr20-3960118-3961869 55.00 55.00 chr20-18796067-18798932 20.00 20.00 chr20-164293156-46225144 57.00 57.00 chr20-61459668-61462165 18.00 18.00 chr20-16691915-61692999 85.00 85.00 chr20-16641272-16643484 17.00 17.00 chr20-53437738-53438813 25.00 25.00 chr20-2921736-2924355 36.00 36.00 chr20-2786768-9787896 83.00 83.00 chr20-27348853-3349856 52.00 52.00 chr20-26665706-26668235 23.00 23.00 chr20-27309909-28711108 16.00 16.00 chr20-28708909-28711108 16.00 16.00 chr20-31909700-31910874 18.00 18.00 chr20-1355945-13561467 38.00 38.00 chr20-14528820-16833904 27.00 17.00 chr20-12906343-129	Data	BLAT	PxBLAT
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chr20-31909700-31910874 18.00 38.00 chr20-13559545-13561467 38.00 38.00 chr20-41522731-41524518 71.00 71.00 chr20-16832380-16833904 27.00 27.00 chr20-45248820-45251295 17.00 17.00 chr20-45248820-45251295 17.00 17.00 chr20-63453750-63455013 6.00 6.00 chr20-2471058-2473777 50.00 50.00 chr20-37782559-37785511 10.00 10.00 chr20-32511957-32514426 19.00 19.00 chr20-3019303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-2659147-22660560 2.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-3	chr20-12411633-12414319	6.00	6.00
chr20-13559545-13561467 38.00 38.00 chr20-41522731-41524518 71.00 71.00 chr20-16832380-16833904 27.00 27.00 chr20-273245-275299 34.00 34.00 chr20-45248820-45251295 17.00 17.00 chr20-12906343-12908335 33.00 33.00 chr20-63453750-63455013 6.00 6.00 chr20-2471058-2473777 50.00 50.00 chr20-37782559-37785511 10.00 10.00 chr20-32511957-32514426 19.00 19.00 chr20-3251957-32514426 19.00 197.00 chr20-2019303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-2659147-22660560 2.00 2.00 chr20-259754388-59756018 4.00 4.00 chr20-58016931-5801	${\rm chr} 20\text{-}58261678\text{-}58263991$	191.00	191.00
chr20-41522731-41524518 71.00 71.00 chr20-16832380-16833904 27.00 27.00 chr20-273245-275299 34.00 34.00 chr20-45248820-45251295 17.00 17.00 chr20-12906343-12908335 33.00 33.00 chr20-63453750-63455013 6.00 6.00 chr20-2471058-2473777 50.00 50.00 chr20-37782559-37785511 10.00 10.00 chr20-3752559-37785511 10.00 19.00 chr20-32511957-32514426 19.00 19.00 chr20-32519303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-363	${\rm chr}20\text{-}31909700\text{-}31910874$	18.00	18.00
chr20-16832380-16833904 27.00 27.00 chr20-273245-275299 34.00 34.00 chr20-45248820-45251295 17.00 17.00 chr20-12906343-12908335 33.00 33.00 chr20-63453750-63455013 6.00 6.00 chr20-2471058-2473777 50.00 50.00 chr20-37782559-37785511 10.00 10.00 chr20-32511957-32514426 19.00 19.00 chr20-2019303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 2.00 chr20-25659147-22660560 2.00 2.00 chr20-5368185-53369917 25.00 25.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-4499692-19251	${\rm chr} 20\text{-}13559545\text{-}13561467$	38.00	38.00
chr20-273245-275299 34.00 34.00 chr20-45248820-45251295 17.00 17.00 chr20-12906343-12908335 33.00 33.00 chr20-63453750-63455013 6.00 6.00 chr20-2471058-2473777 50.00 50.00 chr20-37782559-37785511 10.00 10.00 chr20-32511957-32514426 19.00 19.00 chr20-2019303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 2.00 chr20-25659147-22660560 2.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-494962-19251073 7.00 7.00 chr20-499694-41998017 <td>${\rm chr} 20\text{-}41522731\text{-}41524518$</td> <td>71.00</td> <td>71.00</td>	${\rm chr} 20\text{-}41522731\text{-}41524518$	71.00	71.00
chr20-45248820-45251295 17.00 17.00 chr20-12906343-12908335 33.00 33.00 chr20-63453750-63455013 6.00 6.00 chr20-2471058-2473777 50.00 50.00 chr20-37782559-37785511 10.00 10.00 chr20-32511957-32514426 19.00 19.00 chr20-2019303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-59754388-59756018 4.00 4.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-494962-19251073 7.00 7.00 chr20-7460107-7461273 119.00 119.00 chr20-48975829-49978	${\rm chr} 20\text{-}16832380\text{-}16833904$	27.00	27.00
chr20-12906343-12908335 33.00 33.00 chr20-63453750-63455013 6.00 6.00 chr20-2471058-2473777 50.00 50.00 chr20-37782559-37785511 10.00 10.00 chr20-32511957-32514426 19.00 19.00 chr20-2019303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 2.00 chr20-2659147-22660560 2.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-59754388-59756018 4.00 4.00 chr20-58016931-58019589 14.00 14.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-19249962-19251073 7.00 7.00 chr20-41996994-419980	chr 20-273245-275299	34.00	34.00
chr20-63453750-63455013 6.00 6.00 chr20-2471058-2473777 50.00 50.00 chr20-37782559-37785511 10.00 10.00 chr20-32511957-32514426 19.00 19.00 chr20-2019303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 2.00 chr20-22659147-22660560 2.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-59754388-59756018 4.00 4.00 chr20-58016931-58019589 14.00 14.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-19249962-19251073 7.00 7.00 chr20-7460107-7461273 119.00 119.00 chr20-41996994-41998	chr20-45248820-45251295	17.00	17.00
chr20-2471058-2473777 50.00 50.00 chr20-37782559-37785511 10.00 10.00 chr20-32511957-32514426 19.00 19.00 chr20-2019303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 2.00 chr20-2659147-22660560 2.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-59368185-53369917 25.00 25.00 chr20-5806931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-36346997-36349477 78.00 7.00 chr20-19249962-19251073 7.00 7.00 chr20-7460107-7461273 119.00 119.00 chr20-41996994-41998017 2.00 2.00 chr20-48975829-499785	chr20-12906343-12908335	33.00	33.00
chr20-37782559-37785511 10.00 10.00 chr20-32511957-32514426 19.00 19.00 chr20-2019303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 22.00 chr20-22659147-22660560 2.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-59754388-59756018 4.00 4.00 chr20-58016931-58019589 14.00 14.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-3567642-3569619 110.00 110.00 chr20-19249962-19251073 7.00 7.00 chr20-41996994-41998017 2.00 2.00 chr20-48975829-49978524 30.00 39.00 chr20-49975829-49		6.00	
chr20-32511957-32514426 19.00 19.00 chr20-2019303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 22.00 chr20-22659147-22660560 2.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-59754388-59756018 4.00 4.00 chr20-59754388-59756018 4.00 4.00 chr20-5936185-53369917 25.00 25.00 chr20-53616931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-36346997-36349477 78.00 7.00 chr20-19249962-19251073 7.00 7.00 chr20-41996994-41998017 2.00 2.00 chr20-41996994-41998017 2.00 2.00 chr20-49975829-49978524			
chr20-2019303-2021924 197.00 197.00 chr20-18049373-18051341 47.00 47.00 chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 22.00 chr20-22659147-22660560 2.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-59754388-59756018 4.00 4.00 chr20-59754388-59369917 25.00 25.00 chr20-58016931-58019589 14.00 14.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-3567642-3569619 110.00 110.00 chr20-19249962-19251073 7.00 7.00 chr20-41996994-41998017 2.00 2.00 chr20-41996994-41998017 2.00 2.00 chr20-49975829-49978524 30.00 30.00 chr20-49975829-4997			
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chr20-12831320-12833476 15.00 15.00 chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 22.00 chr20-22659147-22660560 2.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-59754388-59369917 25.00 25.00 chr20-53368185-53369917 25.00 25.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-3567642-3569619 110.00 110.00 chr20-19249962-19251073 7.00 7.00 chr20-7460107-7461273 119.00 119.00 chr20-41996994-41998017 2.00 2.00 chr20-49975829-49978524 30.00 30.00 chr20-49975829-49978524 30.00 30.00 chr20-48174502-48175954 2.00 2.00 chr20-27832062-27834490 23.00 23.00 chr20-13033294-13			
chr20-21527118-21529684 34.00 34.00 chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 22.00 chr20-22659147-22660560 2.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-59754388-59369917 25.00 25.00 chr20-53368185-53369917 25.00 25.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-3567642-3569619 110.00 110.00 chr20-19249962-19251073 7.00 7.00 chr20-7460107-7461273 119.00 119.00 chr20-41996994-41998017 2.00 2.00 chr20-38953285-38954932 39.00 39.00 chr20-15693304-15695054 12.00 12.00 chr20-48174502-48175954 2.00 2.00 chr20-48174502-48175954 2.00 2.00 chr20-27832062-27834490 23.00 23.00 chr20-13033294-1303			
chr20-60252763-60255169 195.00 195.00 chr20-30750577-30753179 25.00 25.00 chr20-60065233-60067754 22.00 22.00 chr20-22659147-22660560 2.00 2.00 chr20-59754388-59756018 4.00 4.00 chr20-53368185-53369917 25.00 25.00 chr20-58016931-58019589 14.00 14.00 chr20-36346997-36349477 78.00 78.00 chr20-3567642-3569619 110.00 110.00 chr20-19249962-19251073 7.00 7.00 chr20-7460107-7461273 119.00 119.00 chr20-41996994-41998017 2.00 2.00 chr20-38953285-38954932 39.00 39.00 chr20-49975829-49978524 30.00 30.00 chr20-48174502-48175954 2.00 2.00 chr20-57547413-57549744 12.00 12.00 chr20-27832062-27834490 23.00 23.00 chr20-13033294-13035107 10.00 10.00 chr20-25043139-25044218 7.00 7.00 chr20-58699090-5870			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	chr20-7460107-7461273		119.00
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	chr20-41996994-41998017	2.00	2.00
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	chr20-38953285-38954932	39.00	39.00
chr20-48174502-48175954 2.00 2.00 chr20-57547413-57549744 12.00 12.00 chr20-27832062-27834490 23.00 23.00 chr20-13033294-13035107 10.00 10.00 chr20-25043139-25044218 7.00 7.00 chr20-58699090-58701273 22.00 22.00	${\rm chr} 20\text{-}15693304\text{-}15695054$	12.00	12.00
chr20-57547413-57549744 12.00 12.00 chr20-27832062-27834490 23.00 23.00 chr20-13033294-13035107 10.00 10.00 chr20-25043139-25044218 7.00 7.00 chr20-58699090-58701273 22.00 22.00	${\rm chr}20\text{-}49975829\text{-}49978524$	30.00	30.00
chr20-27832062-27834490 23.00 23.00 chr20-13033294-13035107 10.00 10.00 chr20-25043139-25044218 7.00 7.00 chr20-58699090-58701273 22.00 22.00	${\rm chr}20\text{-}48174502\text{-}48175954$	2.00	2.00
chr20-13033294-13035107 10.00 10.00 chr20-25043139-25044218 7.00 7.00 chr20-58699090-58701273 22.00 22.00	${\rm chr} 20\text{-}57547413\text{-}57549744$	12.00	12.00
chr20-25043139-25044218 7.00 7.00 chr20-58699090-58701273 22.00 22.00	${\rm chr} 202783206227834490$	23.00	23.00
chr20-58699090-58701273 22.00 22.00	${\rm chr}20\text{-}13033294\text{-}13035107$	10.00	10.00
	${\rm chr} 20\text{-}25043139\text{-}25044218$	7.00	7.00
chr20-33407023-33408027 161.00 161.00			
	chr20-33407023-33408027	161.00	161.00

Table S5: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
${\rm chr}20\text{-}48360301\text{-}48362055$	199.00	199.00
${\rm chr}20\text{-}48967663\text{-}48970119$	174.00	174.00
$\mathrm{chr} 20\text{-}53747260\text{-}53749122$	37.00	37.00
chr 20-55195931-55198585	12.00	12.00
chr20-47766917-47769131	51.00	51.00
chr20-35692775-35694627	57.00	57.00
chr20-61078167-61079319	2.00	2.00
chr20-45472353-45474572	210.00	210.00
chr20-5253614-5255621	20.00	20.00
chr20-27113258-27114615	24.00	24.00
chr20-25345213-25347164	112.00	112.00
chr20-20789302-20792218	112.00	112.00
chr20-12282317-12283946	17.00	17.00
chr20-16112151-16113224	16.00	16.00
chr20-63334929-63336520	33.00	33.00
chr20-38100003-38101534	37.00	37.00
chr20-1557202-1559796	38.00	38.00
chr20-43180645-43183274	21.00	21.00
chr20-61948125-61949374 chr20-15302550-15304778	2.00	2.00
chr20-468292-469632	4.00 4.00	4.00
chr20-1684863-1686631	18.00	4.00 18.00
chr20-24004981-24007178	8.00	8.00
chr20-61864701-61866469	8.00	8.00
chr20-49308216-49309521	78.00	78.00
chr20-6636612-6639499	27.00	27.00
chr20-51045088-51047468	34.00	34.00
chr20-58243435-58245502	35.00	35.00
chr20-44871574-44872758	34.00	34.00
chr20-32128767-32131166	55.00	55.00
chr20-41212692-41214726	135.00	135.00
chr20-28297698-28299651	22.00	22.00
chr20-51964254-51966821	37.00	37.00
chr20-24417808-24420704	49.00	49.00
chr 20-62644015-62645101	3.00	3.00
${\rm chr}20\text{-}17491740\text{-}17493367$	42.00	42.00
${\rm chr}20\text{-}1688906\text{-}1691198$	18.00	18.00
${\rm chr} 20\text{-}24527127\text{-}24528574$	29.00	29.00
${\rm chr} 20\text{-}52428593\text{-}52431117$	14.00	14.00
${\rm chr} 20\text{-}26321024\text{-}26322698$	3.00	3.00
${\rm chr}20\text{-}45100354\text{-}45103113$	66.00	66.00
${\rm chr} 20\text{-}44040957\text{-}44042285$	37.00	37.00
$\mathrm{chr} 20\text{-}8172782\text{-}8174522$	5.00	5.00
chr20-18388054-18390831	17.00	17.00
chr20-46328110-46329817	15.00	15.00
chr20-63202423-63203944	1.00	1.00
chr20-32034568-32036641	31.00	31.00
chr20-16380648-16382791	33.00	33.00
chr20-17324416-17326603	10.00	10.00
chr20-62256391-62259148	85.00	85.00
chr20-26695365-26697570	20.00	20.00
chr20-20397612-20400433	71.00	71.00
chr20-45766019-45767059	16.00	16.00
chr20-10489899-10492143	1.00	1.00
chr20-29482814-29485013	12.00	12.00
chr20-32760142-32762589	37.00	37.00
chr20-48257999-48260762	27.00	27.00
chr20-40817992-40820043	24.00	24.00
C	4:	

Table S5: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-44136060-44138160	58.00	58.00
chr20-52191676-52193518	45.00	45.00
chr20-53054104-53056005 chr20-62008822-62010386	45.00 1.00	45.00
chr20-56222232-56225186	48.00	1.00 48.00
chr20-11993500-11995429	67.00	67.00
chr20-2838968-2840190	2.00	2.00
chr20-44370497-44372521	36.00	36.00
chr20-15651294-15652738	5.00	5.00
chr20-60446354-60447385	1.00	1.00
chr20-53863722-53865382	2.00	2.00
chr20-63911245-63912551	15.00	15.00
chr20-46941439-46942618	21.00	21.00
chr20-38876786-38878888	41.00	41.00
chr20-54691788-54694637	33.00	33.00
${\rm chr} 20\text{-}28756677\text{-}28757926$	2.00	2.00
${\rm chr} 20\text{-}46371353\text{-}46372831$	38.00	38.00
${\rm chr} 20\text{-}47942735\text{-}47945146$	27.00	27.00
${\rm chr} 20\text{-}22121418\text{-}22122589$	4.00	4.00
${\rm chr} 20\text{-}18708284\text{-}18710520$	14.00	14.00
${\rm chr} 20\text{-}45981971\text{-}45984388$	104.00	104.00
chr20-46135966-46137267	23.00	23.00
chr20-1575213-1576967	119.00	119.00
chr20-39187678-39189005	9.00	9.00
chr20-41278984-41281397	151.00	151.00
chr20-9494396-9496948	113.00	113.00
chr20-31727762-31729484	35.00	35.00
chr20-36022112-36023674	57.00	57.00
chr20-48271564-48273408	135.00	135.00
chr20-40669278-40670791 chr20-42986488-42988685	8.00 10.00	8.00 10.00
chr20-1299958-1301679	10.00	106.00
chr20-13502614-13505127	43.00	43.00
chr20-53382502-53385117	197.00	197.00
chr20-52713929-52716436	6.00	6.00
chr20-50921819-50923547	32.00	32.00
chr20-59129918-59131065	9.00	9.00
chr20-24871142-24872155	3.00	3.00
chr20-36621360-36623326	32.00	32.00
chr20-26210260-26212225	61.00	61.00
${\rm chr} 20\text{-}26014391\text{-}26017116$	44.00	44.00
${\rm chr}20\text{-}30326384\text{-}30327411$	33.00	33.00
${\rm chr} 20\text{-}15482840\text{-}15484780$	4.00	4.00
${\rm chr} 20\text{-}22188810\text{-}22191531$	7.00	7.00
${\rm chr} 20\text{-}53189540\text{-}53191340$	19.00	19.00
${\rm chr} 202016511020167633$	6.00	6.00
${\rm chr} 20\text{-}50879702\text{-}50882451$	29.00	29.00
${\rm chr} 20\text{-}63776357\text{-}63779251$	43.00	43.00
$\mathrm{chr} 20\text{-}8593094\text{-}8594767$	15.00	15.00
chr20-13374024-13375459	149.00	149.00
chr20-7629062-7631848	20.00	20.00
chr20-46281701-46284229	78.00	78.00
chr20-20612704-20614333	6.00	6.00
chr20-7789652-7790884	51.00	51.00
chr20-20211163-20212564	14.00	14.00
chr20-16947414-16949607 chr20-54513399-54515370	21.00	21.00
chr20-56480693-56482358	37.00 31.00	37.00 31.00
Cm 20-30460093-30482338	91.00	31.00

Table S5: Comparison of HSPs between BLAT and PxBLAT

Data	BLAT	PxBLAT
chr20-45906833-45908007	60.00	60.00
${\rm chr} 20\text{-}25103924\text{-}25105179$	4.00	4.00
${\rm chr} 202012748120130326$	65.00	65.00
${\rm chr} 20\text{-}64287371\text{-}64289651$	38.00	38.00
${\rm chr} 20\text{-}48414492\text{-}48416468$	25.00	25.00
${\rm chr} 20\text{-}24558966\text{-}24560320$	27.00	27.00
${\rm chr} 20\text{-}51647915\text{-}51650334$	35.00	35.00
${\rm chr} 203825560938258269$	52.00	52.00
${\rm chr} 20\text{-}63504410\text{-}63506929$	16.00	16.00
${\rm chr} 20\text{-}54586295\text{-}54587370$	29.00	29.00
${\rm chr} 20\text{-}44482370\text{-}44485031$	36.00	36.00
${\rm chr} 20\text{-}50765756\text{-}50767150$	54.00	54.00
chr 20-366563-367950	15.00	15.00
${\rm chr} 20\text{-}63477911\text{-}63480561$	94.00	94.00
${\rm chr} 20\text{-}15045333\text{-}15048254$	23.00	23.00
chr 20-7274439-7276379	172.00	172.00
${\rm chr} 20\text{-}59961834\text{-}59963681$	15.00	15.00
${\rm chr} 20\text{-}22119668\text{-}22121042$	211.00	211.00
chr 20-6377058-6378441	193.00	193.00
${\rm chr} 20\text{-}54875756\text{-}54878074$	214.00	214.00
chr20-18239510-18240655	70.00	70.00