Supplementary Table 1. Chromosome lengths for each *Cannabis* genome assembly.

Chromosome ID	GenBank Accession	Size (Mb)
CBDRx Assembly (Female) (Grassa et al., 2018)		
1	LR213628.1	101.21
2	LR213632.1	96.35
3	LR213629.1	94.67
4	LR213630.1	91.91
5	LR213631.1	88.18
6	LR213634.1	79.34
7	LR213635.1	71.24
8	LR213636.1	64.62
9	LR213633.1	61.56
X	LR213627.1	104.99
Unplaced	210 scaffolds	21.67
Wild *Cannabis* Assembly (Female) (Gao et al., 2020)		
1	CM022965 .1	93.00
2	CM022966.1	91.28
3	CM022967.1	89.82
4	CM022968.1	83.22
5	CM022969.1	83.00
6	CM022970.1	82.47
7	CM022971.1	80.62
8	CM022972.1	70.97
9	CM022973.1	69.09
10	CM022974.1	54.53
Unplaced	473 Scaffolds	14.54
Finola Assembly (Male) (Laverty et al., 2019)		
1	CM011605.1	100.65
2	CM011606.1	95.69
3	CM011607.1	94.59
4	CM011608.1	92.11
5	CM011609.1	87.05
6	CM011610.1	77.14
7	CM011611.1	76.63
8	CM011612.1	76.02
9	CM011613.1	49.54
10	CM011614.1	35.34
Unplaced	2352 Scaffolds	224.92
Purple Kush Assembly (Female) (Laverty et al., 2019)		
1	CM010790.2	79.26
2	CM010792.2	73.43
3	CM010793.2	72.20
4	CM010794.2	78.15
5	CM010796.2	72.52
6	CM010797.2	60.97
7	CM010799.2	60.63
8	CM010795.2	62.04
9	CM010798.2	51.08
10	CM010791.2	29.40
Unplaced	6643 Scaffolds	252.29
Y Chromosome (McKernan et al., 2020[1])		
Y	n/a	118.00

[1]The estimated length of the Y chromosome (McKernan et al., 2020).

Supplementary Table 2. Available *Cannabis* sequencing data from the NCBI sequence read archive.

Strategy	Data Type	Description	BioProject	SRP	No. SRA experiments	Publication
WGS	Genomic	WGS data from the CBDRx cultivar.	PRJEB29284	ERP111578	8	Grassa et al, 2018
WGS	Genomic	WGS data from the PK, FN and USO-31 cultivars.	PRJNA73819	SRP008673	43	Laverty et al., 2019
WGS	Genomic	WGS data from the CR cultivar.	PRJNA562042	SRP219241	7	Gao et al., 2020
WGS	Genomic	WGS data from multiple hemp and drug-type cultivars as part of the Medicinal Genomics 'Cannabis Pan-Genome Project'.	PRJNA575581	SRP234475	40	McKernan et al., 2020
WGS	Genomic	WGS data from the Pinapple Banana Bubba Kush cultivar.	PRJNA378470	SRP103094	2	-
WGS	Genomic	Sequencing the THCA locus of the Lester Grinspoon, Recon, OG Kush, Kandy Kush, Green Crack and Chocolope drug-type cultivars.	PRJNA297710	SRP064442	6	McKernan et al., 2015
WGS	Genomic	WGS data from multiple hemp and drug-type cultivars.	PRJNA310948	SRP072345	55	Lynch et al., 2016
WGS	Genomic	WGS data from the Harlequin cultivar.	PRJNA350225	SRP091959	1	-
WGS	Genomic	WGS data from multiple hemp and drug-type cultivars.	PRJNA350539	SRP099161	25	-
GBS	Genomic	GBS data for 43 hemp and 81 drug-type samples.	PRJNA285813	SRP059250	3	Sawler et al., 2015
GBS	Genomic	GBS data for 182 samples from hemp and drug-type cultivars.	PRJNA317659	SRP074775	162	Lynch et al., 2016
GBS	Genomic	GBS data for 95 samples from Iranian hemp and drug-type cultivars.	PRJNA419020	SRP197670	95	Soorni et al., 2017
Bisulfite-Seq	Genomic	DNA methylome of the leaf from the PK cultivar, sequenced as part of a study investigating the variation in DNA methylation between 34 angiosperm species.	PRJNA316109	SRP072226	1	Niederhuth et al., 2016
Bisulfite-Seq	Genomic	DNA methylome of the male flower, female flower, female seeded flower and female leaf from the JL cultivar.	PRJNA575581	SRP234475	10	Mc Kernan et al., 2020
Hi-C	Genomic	Hi-C reads of the *Cannabis* genome from the CR cultivar.	PRJNA562042	SRP219241	1	Gao et al., 2020
Amplicon	Genomic	Amplicon sequencing of the THCA synthase locus from multiple drug type cultivars.	PRJNA297710	SRP064442	70	McKernan et al., 2015
Amplicon	Genomic	Targeted amplicon sequencing of multiple hemp and marijuana cultivars with a wide geographical distribution.	PRJNA347566	SRP092005	845	-
Amplicon	Genomic	Targeted amplicon sequencing of 8 *Cannabis sativa* cultivars.	PRJNA470994	SRP145424	8	-
Amplicon	Genomic	Targeted amplicon sequencing of 1378 samples from a diverse range of cultivars.	PRJNA510566	SRP173788	1378	-
WES	Genomic	Whole exome sequencing data for wild *Cannabis s*equenced as part of a study investigating the taxonomic relationships between members of the *Urtica* genus.	PRJNA602985	SRP244729	1	-
RNA-Seq	Transcriptomic	Transcriptome of multiple tissues from the Cannbio-2 cultivar sequenced at various developmental stages.	PRJNA560453	SRP234963	71	Braich et al., 2019
RNA-Seq	Transcriptomic	Transcriptome of the female flower, female seeded flower, male flower, female root and female Leaf from the parental JL cultivars.	PRJNA575581	SRP234475	10	Mc Kernan et al., 2020
RNA-Seq	Transcriptomic	RNA-sequencing of the Yunma1 hemp cultivar grown under drought stress or control conditions.	PRJNA245084	SRP041340	4	Gao et al., 2018
RNA-Seq	Transcriptomic	Transcriptome of the xylem, core, stem and stem peel from the Carmen hemp cultivar sequenced as part of the 'One Thousand Plant Transcriptomes Initiative'.	PRJEB21674	ERP023948	4	One Thousand Plant Transcriptomes Initiative, 2019
RNA-Seq	Transcriptomic	Transcriptome of bast fibres from the Santhica27 hemp cultivar sequenced at different stages of development.	PRJNA435671	SRP133605	24	Guerriero G et al. 2017 Behr et al., 2016
RNA-Seq	Transcriptomic	Transcriptome of the root, shoot, stem, pre-flower, early-stage flower and mid-stage flower from the PK and FN cultivars.	PRJNA73819	SRP008673	12	Van Bakel et al., 2011
RNA-Seq	Transcriptomic	RNA-sequencing of the glandular trichome from five cultivars; Lemon Skunk, CBD Skunk Haze, Blue Cheese, Afghan Kush and Chocolope.	PRJNA599437	n/a	n/a	Booth et al., 2020
RNA-Seq	Transcriptomic	Transcriptome of the leaf from Yunma5 and Bamahuoma hemp cultivars subject to salt stress.	PRJNA304090	SRP066670	1	Liu et al., 2016
RNA-Seq	Transcriptomic	RNA-sequencing of bulbous, stalked and sessile trichomes and the mature flower from the FN cultivar.	PRJNA483805	SRP155904	9	Livingston et al. 2020
RNA-Seq	Transcriptomic	Transcriptome of the glandular trichome for nine drug type cultivars sequenced at the late flowering stage.	PRJNA498707	SRP168446	27	Zager JJ et al., 2019
RNA-Seq	Transcriptomic	RNA-sequencing of the flower bud of male and female plants from the Zenista cultivar as part of a study investigating sex specific gene expression to resolve the sex chromosomes.	PRJNA549804	SRP201948	12	Prentout et al., 2019
RNA-Seq	Transcriptomic	Transcriptome of the leaf, root, stem and shoot from the CR cultivar.	PRJNA562042	SRP219241	4	Gao et al., 2020
RNA-Seq	Transcriptomic	RNA-sequencing of leaf samples from the Hanma-2 hemp cultivar at the three leaf seedling stage over a period of four days while treated with uniconazole solution and drought stress.	PRJNA635553	SRP265442	12	-
RNA-Seq	Transcriptomic	Transcriptome of the seed from the X59 hemp cultivar sequenced at three stages of seed development.	PRJNA513221	SRP176390	3	-
RNA-Seq	Transcriptomic	RNA-sequencing of the immature leaf , young leaf, mature leaf, primary stem, flower buds, mature flower, petioles and root from *Cannabis sativa.*	PRJNA80055	SRP006678	23	-
RNA-Seq	Transcriptomic	RNA-sequencing of the *Cannabis sativa* trichome.	n/a	SRP007300	1	-
RNA-Seq	Transcriptomic	RNA-sequencing of the *Cannabis sativa* trichome.	PRJNA178769	SRP017028	1	-

Abbreviations: WGS, Whole genome sequencing; GBS, Genotyping by sequencing; Bisulfite-Seq, Bisulfite sequencing; RNA-seq, RNA sequencing; PK, Purple Kush; FN, Finola; CR, *wild Cannabis;* JL, Jamaican Lion.

Supplementary Table 3. Available *Cannabis* organellar genome assemblies.

Organelle	Cultivar	Accession	Size (bp)	Source	Publication
Mitochondria	Chinese Hemp	KU310670.1/ NC_029855.1	415,602	NCBI	Unpublished
Mitochondria	Carmagnola	KR059940.1	414,545	NCBI	White et al., 2016
Mitochondria	Sievers Infinity	KU363807.1	414,545	NCBI	Unpublished
Mitochondria	Kompolti	MT361980.1	415,806	NCBI	Unpublished
Mitochondria	USO31	MN599027.1	415,667	NCBI	Unpublished
Mitochondria	Jamaican Lion	JAATIQ010000614.1	366,524	NCBI	McKernan et al., 2020
Mitochondria	Unknown	n/a	415,751	Medicinal Genomics Website[1]	McKernan 2016
Chloroplast	Carmagnola	KP274871.1/ NC_026562.1	153,871	NCBI	Vergara et al., 2015
Chloroplast	Dagestani	KR779995.1	153,867	NCBI	Vergara et al 2015
Chloroplast	Yoruba Nigeria	KR363961.1/ NC_027223.1	153,854	NCBI	Oh H et al., 2015
Chloroplast	Cheungsam	KR184827.1	153,848	NCBI	Oh H et al., 2015
Chloroplast	n/a	MH118118.1	153,910	NCBI	Zhang et al., 2018
Chloroplast	Chinese hemp	KY084475.1	153,945	NCBI	Unpublished
Chloroplast	Brazuka	MK878537.1	153,898	NCBI	Matielo et al., 2020
Chloroplast	AK Royal Automatic	MK878538.1	153,849	NCBI	Matielo et al., 2020
Chloroplast	Unknown	n/a	153,805	Medicinal Genomics Website[1]	McKernan 2016

[1]http://www.medicinalgenomics.com/chloroplast-and-mitochondrial-haplotypes-of-cannabis/