

An Inventory of data stored in publicly accessible repositories to support the paper: *Combined pangenomics and transcriptomics reveals core and redundant virulence processes in a rapidly evolving fungal plant pathogen*

Overview

The primary raw data is DNA and RNA sequencing. Short-read Illumina DNA sequences were used to assemble 17 *Zymoseptoria tritici* genomes and the gene expression of these genomes in-vitro and in-planta at several time points was assessed by Illumina RNA sequencing.

A pangenome gene sequence and annotation was derived from a comparison of the seventeen new genomes with the reference genome IPO323. The RNAseq data was mapped to the pangenome coding sequences, and a gene expression count file was generated.

All the raw and derived data that the work is based on is archived in public repositories, accessible after publication, using the NCBI BioProject code PRJNA890236 (<https://www.ncbi.nlm.nih.gov/bioproject/PRJNA890236>) and the Rothamsted repository.

The files are listed below:

Raw Data: DNA Sequences

BioProject	Accession	Study	biosample	filename	filename2
PRJNA890236	SRR22188307	SRP406242	SAMN31282227	Zt10_2227_LIB27062_LDI24041_TGACCA_L001_trimP_R1.fq.gz	Zt10_2227_LIB27062_LDI24041_TGACCA_L001_trimP_R2.fq.gz
PRJNA890236	SRR22188306	SRP406242	SAMN31282228	Zt36_FCHMTW3BCXY_L2_wHAXPI05506-0-94_1.fq.gz	Zt36_FCHMTW3BCXY_L2_wHAXPI05506-94_2.fq.gz
PRJNA890236	SRR22188298	SRP406242	SAMN31282229	Zt48_FCHMTW3BCXY_L2_wHAXPI05506-1-96_1.fq.gz	Zt48_FCHMTW3BCXY_L2_wHAXPI05506-96_2.fq.gz
PRJNA890236	SRR22188297	SRP406242	SAMN31282230	Zt55_2227_LIB27064_LDI24043_GCCAA_T_L001_R1.fq.gz	Zt55_2227_LIB27064_LDI24043_GCCAA_T_L001_R2.fq.gz
PRJNA890236	SRR22188296	SRP406242	SAMN31282231	Zt71_2227_LIB27065_LDI24044_CAGAT_C_L001_R1.fq.gz	Zt71_2227_LIB27065_LDI24044_CAGAT_C_L001_R2.fq.gz
PRJNA890236	SRR22188295	SRP406242	SAMN31282232	Zt74_FCHMTW3BCXY_L2_wHAXPI05506-2-97_1.fq.gz	Zt74_FCHMTW3BCXY_L2_wHAXPI05506-97_2.fq.gz
PRJNA890236	SRR22188294	SRP406242	SAMN31282233	Zt80_FCHMTW3BCXY_L2_wHAXPI05506-3-100_1.fq.gz	Zt80_FCHMTW3BCXY_L2_wHAXPI05506-100_2.fq.gz
PRJNA890236	SRR22188293	SRP406242	SAMN31282234	Zt88_FCHMTW3BCXY_L2_wHAXPI05506-4-103_1.fq.gz	Zt88_FCHMTW3BCXY_L2_wHAXPI05506-103_2.fq.gz
PRJNA890236	SRR22188292	SRP406242	SAMN31282235	Zt92_FCHMTW3BCXY_L2_wHAXPI05506-5-107_1.fq.gz	Zt92_FCHMTW3BCXY_L2_wHAXPI05506-107_2.fq.gz
PRJNA890236	SRR22188291	SRP406242	SAMN31282236	Zt93_FCHMTW3BCXY_L2_wHAXPI05506-6-108_1.fq.gz	Zt93_FCHMTW3BCXY_L2_wHAXPI05506-108_2.fq.gz
PRJNA890236	SRR22188305	SRP406242	SAMN31282237	Zt97_2227_LIB27066_LDI24045_CTTGT_A_L001_R1.fq.gz	Zt97_2227_LIB27066_LDI24045_CTTGT_A_L001_R2.fq.gz
PRJNA890236	SRR22188304	SRP406242	SAMN31282238	Zt99_FCHMTW3BCXY_L2_wHAXPI05506-7-32_1.fq.gz	Zt99_FCHMTW3BCXY_L2_wHAXPI05506-32_2.fq.gz
PRJNA890236	SRR22188303	SRP406242	SAMN31282239	Zt114_2227_LIB27069_LDI24048_ACTTGA_L001_R1.fq.gz	Zt114_2227_LIB27069_LDI24048_ACTTGA_L001_R2.fq.gz
PRJNA890236	SRR22188302	SRP406242	SAMN31282240	Zt116_2227_LIB27070_LDI24049_GATCAG_L001_R1.fq.gz	Zt116_2227_LIB27070_LDI24049_GATCAG_L001_R2.fq.gz
PRJNA890236	SRR22188301	SRP406242	SAMN31282241	Zt117_FCHMTW3BCXY_L2_wHAXPI05506-68-35_1.fq.gz	Zt117_FCHMTW3BCXY_L2_wHAXPI05506-35_2.fq.gz
PRJNA890236	SRR22188300	SRP406242	SAMN31282242	Zt118_2227_LIB27071_LDI24050_TAGCTT_L001_R1.fq.gz	Zt118_2227_LIB27071_LDI24050_TAGCTT_L001_R2.fq.gz
PRJNA890236	SRR22188299	SRP406242	SAMN31282243	Zt120_2227_LIB27072_LDI24051_GGCTAC_L001_R1.fq.gz	Zt120_2227_LIB27072_LDI24051_GGCTAC_L001_R2.fq.gz

Raw Data: RNA Sequences

SRA links to raw files (forward and reverse) with sample descriptors:

GSM6916835	In-planta mock infection, 6 days post infection, replicate 1
GSM6916836	In-planta mock infection, 6 days post infection, replicate 2
GSM6916837	In-planta mock infection, 6 days post infection, replicate 4
GSM6916838	In-planta mock infection, 9 days post infection, replicate 1
GSM6916839	In-planta mock infection, 9 days post infection, replicate 2

GSM6916840	In-planta mock infection, 9 days post infection, replicate 3
GSM6916841	In-planta Z.tritici strain Zt114 infection, 6 days post infection, replicate 1
GSM6916842	In-planta Z.tritici strain Zt114 infection, 6 days post infection, replicate 2
GSM6916843	In-planta Z.tritici strain Zt114 infection, 6 days post infection, replicate 3
GSM6916844	In-planta Z.tritici strain Zt114 infection, 9 days post infection, replicate 1
GSM6916845	In-planta Z.tritici strain Zt114 infection, 9 days post infection, replicate 2
GSM6916846	In-planta Z.tritici strain Zt114 infection, 9 days post infection, replicate 3
GSM6916847	In-vitro Z.tritici strain Zt114, replicate 1
GSM6916848	In-vitro Z.tritici strain Zt114, replicate 2
GSM6916849	In-vitro Z.tritici strain Zt114, replicate 3
GSM6916850	In-planta Z.tritici strain Zt116 infection, 6 days post infection, replicate 1
GSM6916851	In-planta Z.tritici strain Zt116 infection, 6 days post infection, replicate 2
GSM6916852	In-planta Z.tritici strain Zt116 infection, 6 days post infection, replicate 3
GSM6916853	In-planta Z.tritici strain Zt116 infection, 9 days post infection, replicate 1
GSM6916854	In-planta Z.tritici strain Zt116 infection, 9 days post infection, replicate 2
GSM6916855	In-planta Z.tritici strain Zt116 infection, 9 days post infection, replicate 4
GSM6916856	In-vitro Z.tritici strain Zt116, replicate 1
GSM6916857	In-vitro Z.tritici strain Zt116, replicate 2
GSM6916858	In-vitro Z.tritici strain Zt116, replicate 3
GSM6916859	In-planta Z.tritici strain Zt117 infection, 6 days post infection, replicate 2
GSM6916860	In-planta Z.tritici strain Zt117 infection, 6 days post infection, replicate 3
GSM6916861	In-planta Z.tritici strain Zt117 infection, 6 days post infection, replicate 4
GSM6916862	In-planta Z.tritici strain Zt117 infection, 9 days post infection, replicate 1
GSM6916863	In-planta Z.tritici strain Zt117 infection, 9 days post infection, replicate 2
GSM6916864	In-planta Z.tritici strain Zt117 infection, 9 days post infection, replicate 4
GSM6916865	In-vitro Z.tritici strain Zt117, replicate 1
GSM6916866	In-vitro Z.tritici strain Zt117, replicate 2
GSM6916867	In-vitro Z.tritici strain Zt117, replicate 3
GSM6916868	In-planta Z.tritici strain Zt118 infection, 6 days post infection, replicate 1
GSM6916869	In-planta Z.tritici strain Zt118 infection, 6 days post infection, replicate 2
GSM6916870	In-planta Z.tritici strain Zt118 infection, 6 days post infection, replicate 4
GSM6916871	In-planta Z.tritici strain Zt118 infection, 9 days post infection, replicate 1
GSM6916872	In-planta Z.tritici strain Zt118 infection, 9 days post infection, replicate 2
GSM6916873	In-planta Z.tritici strain Zt118 infection, 9 days post infection, replicate 3
GSM6916874	In-vitro Z.tritici strain Zt118, replicate 1
GSM6916875	In-vitro Z.tritici strain Zt118, replicate 2
GSM6916876	In-vitro Z.tritici strain Zt118, replicate 3
GSM6916877	In-planta Z.tritici strain Zt36 infection, 6 days post infection, replicate 2
GSM6916878	In-planta Z.tritici strain Zt36 infection, 6 days post infection, replicate 3
GSM6916879	In-planta Z.tritici strain Zt36 infection, 6 days post infection, replicate 4
GSM6916880	In-planta Z.tritici strain Zt36 infection, 9 days post infection, replicate 1
GSM6916881	In-planta Z.tritici strain Zt36 infection, 9 days post infection, replicate 3

GSM6916882	In-planta Z.tritici strain Zt36 infection, 9 days post infection, replicate 4
GSM6916883	In-vitro Z.tritici strain Zt36, replicate 1
GSM6916884	In-vitro Z.tritici strain Zt36, replicate 2
GSM6916885	In-vitro Z.tritici strain Zt36, replicate 3
GSM6916886	In-planta Z.tritici strain Zt48 infection, 6 days post infection, replicate 1
GSM6916887	In-planta Z.tritici strain Zt48 infection, 6 days post infection, replicate 2
GSM6916888	In-planta Z.tritici strain Zt48 infection, 6 days post infection, replicate 3
GSM6916889	In-planta Z.tritici strain Zt48 infection, 9 days post infection, replicate 1
GSM6916890	In-planta Z.tritici strain Zt48 infection, 9 days post infection, replicate 2
GSM6916891	In-planta Z.tritici strain Zt48 infection, 9 days post infection, replicate 4
GSM6916892	In-vitro Z.tritici strain Zt48, replicate 1
GSM6916893	In-vitro Z.tritici strain Zt48, replicate 2
GSM6916894	In-vitro Z.tritici strain Zt48, replicate 3
GSM6916895	In-planta Z.tritici strain Zt74 infection, 6 days post infection, replicate 1
GSM6916896	In-planta Z.tritici strain Zt74 infection, 6 days post infection, replicate 2
GSM6916897	In-planta Z.tritici strain Zt74 infection, 6 days post infection, replicate 3
GSM6916898	In-planta Z.tritici strain Zt74 infection, 9 days post infection, replicate 1
GSM6916899	In-planta Z.tritici strain Zt74 infection, 9 days post infection, replicate 3
GSM6916900	In-planta Z.tritici strain Zt74 infection, 9 days post infection, replicate 4
GSM6916901	In-vitro Z.tritici strain Zt74, replicate 1
GSM6916902	In-vitro Z.tritici strain Zt74, replicate 2
GSM6916903	In-vitro Z.tritici strain Zt74, replicate 3
GSM6916904	In-planta Z.tritici strain Zt80 infection, 6 days post infection, replicate 1
GSM6916905	In-planta Z.tritici strain Zt80 infection, 6 days post infection, replicate 3
GSM6916906	In-planta Z.tritici strain Zt80 infection, 6 days post infection, replicate 4
GSM6916907	In-planta Z.tritici strain Zt80 infection, 9 days post infection, replicate 2
GSM6916908	In-planta Z.tritici strain Zt80 infection, 9 days post infection, replicate 3
GSM6916909	In-planta Z.tritici strain Zt80 infection, 9 days post infection, replicate 4
GSM6916910	In-vitro Z.tritici strain Zt80, replicate 1
GSM6916911	In-vitro Z.tritici strain Zt80, replicate 2
GSM6916912	In-vitro Z.tritici strain Zt80, replicate 3
GSM6916913	In-planta Z.tritici strain Zt88 infection, 6 days post infection, replicate 1
GSM6916914	In-planta Z.tritici strain Zt88 infection, 6 days post infection, replicate 2
GSM6916915	In-planta Z.tritici strain Zt88 infection, 6 days post infection, replicate 4
GSM6916916	In-planta Z.tritici strain Zt88 infection, 9 days post infection, replicate 2
GSM6916917	In-planta Z.tritici strain Zt88 infection, 9 days post infection, replicate 3
GSM6916918	In-planta Z.tritici strain Zt88 infection, 9 days post infection, replicate 4
GSM6916919	In-vitro Z.tritici strain Zt88, replicate 1
GSM6916920	In-vitro Z.tritici strain Zt88, replicate 2
GSM6916921	In-vitro Z.tritici strain Zt88, replicate 3
GSM6916922	In-planta Z.tritici strain Zt92 infection, 6 days post infection, replicate 1
GSM6916923	In-planta Z.tritici strain Zt92 infection, 6 days post infection, replicate 2

GSM6916924	In-planta Z.tritici strain Zt92 infection, 6 days post infection, replicate 3
GSM6916925	In-planta Z.tritici strain Zt92 infection, 9 days post infection, replicate 1
GSM6916926	In-planta Z.tritici strain Zt92 infection, 9 days post infection, replicate 2
GSM6916927	In-planta Z.tritici strain Zt92 infection, 9 days post infection, replicate 4
GSM6916928	In-vitro Z.tritici strain Zt92, replicate 1
GSM6916929	In-vitro Z.tritici strain Zt92, replicate 2
GSM6916930	In-vitro Z.tritici strain Zt92, replicate 3
GSM6916931	In-planta Z.tritici strain Zt93 infection, 6 days post infection, replicate 2
GSM6916932	In-planta Z.tritici strain Zt93 infection, 6 days post infection, replicate 3
GSM6916933	In-planta Z.tritici strain Zt93 infection, 6 days post infection, replicate 4
GSM6916934	In-planta Z.tritici strain Zt93 infection, 9 days post infection, replicate 2
GSM6916935	In-planta Z.tritici strain Zt93 infection, 9 days post infection, replicate 3
GSM6916936	In-planta Z.tritici strain Zt93 infection, 9 days post infection, replicate 4
GSM6916937	In-vitro Z.tritici strain Zt93, replicate 1
GSM6916938	In-vitro Z.tritici strain Zt93, replicate 2
GSM6916939	In-vitro Z.tritici strain Zt93, replicate 3
GSM6916940	In-planta Z.tritici strain Zt99 infection, 6 days post infection, replicate 2
GSM6916941	In-planta Z.tritici strain Zt99 infection, 6 days post infection, replicate 3
GSM6916942	In-planta Z.tritici strain Zt99 infection, 6 days post infection, replicate 4
GSM6916943	In-planta Z.tritici strain Zt99 infection, 9 days post infection, replicate 1
GSM6916944	In-planta Z.tritici strain Zt99 infection, 9 days post infection, replicate 3
GSM6916945	In-planta Z.tritici strain Zt99 infection, 9 days post infection, replicate 4
GSM6916946	In-vitro Z.tritici strain Zt99, replicate 1
GSM6916947	In-vitro Z.tritici strain Zt99, replicate 2
GSM6916948	In-vitro Z.tritici strain Zt99, replicate 3

Derived Data: Genome Assemblies

NCBI BioProject	NCBI Accession	Strain	Species	NCBI Taxon ID
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282227	Zt10	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282228	Zt36	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282229	Zt48	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282230	Zt55	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282231	Zt71	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282232	Zt74	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282233	Zt80	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282234	Zt88	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282235	Zt92	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282236	Zt93	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282237	Zt97	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282238	Zt99	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282239	Zt114	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282240	Zt116	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282241	Zt117	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282242	Zt118	Zymoseptoria tritici	1047171
PRJNA890236	https://www.ncbi.nlm.nih.gov/biosample/SAMN31282243	Zt120	Zymoseptoria tritici	1047171

Derived Data: gene sequences and annotation

The pangene sequences and annotation are submitted with the paper as supplementary files for download and are also available following publication at the Rothamsted repository at

<https://doi.org/10.23637/rothamsted.98q90>:

Pangenome_Zt_17I_IPO323_v3.fasta (also available at NCBI GEO, see below)

annotation_pangenomveV3_2.gtf

Derived Data: Gene Expression Counts (in-vitro and in-planta)

GSE222164_Pangenome_Zt_17I_IPO323_v3.fasta.gz	12.6 Mb	(http)	FASTA
GSE222164_ztriticiPangenomePlantaCounts.txt.gz	2.3 Mb	(http)	TXT

Both raw and these derived expression files Accessible from NCBI GEO accession GSE222164

(<https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE222164>)