

Engineering novel nanomaterials through *de novo* design of hydrophobic scaffold proteins

Chapter 4: Identification of a protein contaminant using Cryo-EM and artificial intelligence to improve sample purification

Supplemental Data

Adapted from

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Supplemental Sequences 4: Consensus Sequences for all ModelAngelo outputs

Map Resolution (Å)	Consensus Sequence
2.51	GGGGATERVPMTRTEEEEASELLEAENSTSKLVTFNEVNMKPIQDLREKY AESFEERFGIELGFRSFYVKATVEALKRYPEVNASIDGATVVYFTYFDVS RSVESPPSSGVVTPVLRECSDLGQASIEKQIKELAVQKGAGNLTSSDLSG GTFCITLGGTFGSLESVPIIDVPQKSAILGMYAIEDRPSQNAVDGEVNIK PIQYLSEKYAEALSDFRLITGRESVGFLITIKELLEDPTRLELFVGGTV VYFTYFSVSRSVESPSG
3.00	SGSEKRVPRSKERKKEADRLNEAKNSTAMLTTFQEVNMKPIQDLRKKYGE AFEKRYGIRLGFRSFYVKAVVEALKRYPEVLASIEGDNVYYNYFEVSRA VETPSKGLVTPVLREVSTLGMADIEKKIKELATKARDGKLTNELEGGN FTITNGGTFGSLMSVPIINPDPRAAILGLYAIKDRPQAVNGQVEILPMQY LSLSYDFRLIDGRESVGFLVTIKELLEDPTRLLLLFV
4.00	GRSEERVPRRSKERKKVAERLNEALNSTVMIVVFNSVNMKPIQDLRKKYA EAFEKRYGVRLGFRSYYVKAVVEALKRYPDVNASLEGDTVYYNYFEVTK AVETRKDKGLVTPCLREVSTLGMADIEKKIKELAVRARSGLKTEEELSGG NFTITNSGEFGGALMSVPIINPPQAAILGMHSIKDRPQAVNGKVEILPKM YLSLSYDYRIISAREATGFLTTIKELLEDPTRLLLLFL
4.25	GKSTERVPPRSKERKKVAERLLEALNSTTMISVFNSVDMKPIQELRKKYA EEFEKRYGVRLGFRSFYVKAVVEALKRHPEVMASLEGGTVYYNYFCVSK AVEDPSKGLVTVCIREVESLSMAEIEKKIKELAEKAREGNLTENLLSGGK SFTITNDGEFGTLMTVPIINPAPNAAVLGMHSIKERPKAINGKVEILPKQ YLSLSYDYRIITAREATGFMTTIKELLEDVTRLILFG
4.50	SGSTERVPLRSKERKKLAERLNEALNSTSMTTVFVEVNMKPIQELRKKYA EAFEKRRYGVRIHRAFHIQAVVEALKRHPEIMASLEGDTVYYYTEFGVL MSKPDNPNCAGLVTCLRSIKDLPMAINGQVELLPQMYLALSVDYRIIT AREAVGFLLKIKKLAEKAREGDITREILSGAGDTPKK
4.75	NDGTERVPPRDQQRKKEAERINKALNSSSMTTLFVEVNKKPIQELKKKYA EAFKKRYGGVKIGNRAFYVKAVVEGMQRYPEILASIDGGTVVYNTRGGVL MSIPVNPNCAAVVL SIRNVEDLSLAEIEKKIKALNGQVELLPEKWLALS YDRRIITAKRARTGFITEIKRRLLEDLERLLGGG
5.00	IDIRAKGTESVPIQEKRKKEAEAFEKAYGIKILGLRAFRLSLPVPGPVNR YPELLGAYSPKTRPKANNKVEVLPCSWLELEYSRRVVEARKLAEGFLEE VKRELAEVARSGNITEELLGGGA
5.25	GIPVNPNSGDGVSYYTRFSVVGVSRLVNGKIEVTLLDDGKAVTGFVPS LKAREAELRYEYAEELERLYGDRGIGGLRPEWLKAVAALARRYP KPEVTPVIYVLLTPRGLLLVI
5.50	LFLGPDLDGAGGGLGIFTPLGSPSGKLVEVTPRLRELRKEYGEAYAKKYG LVPELVVRGFYLRIPADGBRAREAKRSVEKLLSSLAEARSSVYSNPLSV A
5.75	ALKRLLSDVSRAELVREKRLKALLPLKLLKALAKKYGFAAGRPPYGLGS PGKLRASGGLLPLIVPNGGVGLGDD

6.00	FFEDDAAVVKEVEKRSFPSEASRYRKELAEALVLALSGLLLLLLPSGL GVVLLGVGRGGGGNGEPGATVGSPGEAEWAALL
6.25	LLEVLAAVAVVRSDLLLYLLSLPDGGGGGGGIGKPNFSFGDPPDAAEA ALEKEELEEALEKEAAYRGALLLALSLLAAALLRL
6.50	QKKELAKSEAEALAEAAKEEYAELEEELEEGELLGGLAGGAALGGLLL AAERVVSA
6.75	SNEAAAEKEEAKALGLGEAGGAEKAALLALLEELLLLLLVRRPDY
7.00	ASLLALAALGGLKIVGGDGAEELLELLAGLLALLLGSRT
8.00	NTLLLLGLLLLGKLAAEEEEELLEEELEEEAAA
9.00	QARAGGSNLKELLEEEEEKEELEELERLLLALGLLLADDLLDK

Supplemental Table 6: Number and percentage of total residues output by ModelAngelo belonging to chains of a given length

Model Resolution (Å)	Total residues per chain length (CL)				Percentage of residues per chain length (CL)		
	CL 1 - 10	CL 11 - 100	CL 101+	Sum	CL 1 - 10	CL 11 - 100	CL 101+
2.51	70	84	5482	5636	1.242	1.490	97.268
3.00	70	151	5404	5625	1.244	2.684	96.071
4.00	80	892	4621	5593	1.430	15.949	82.621
4.25	155	2378	3044	5577	2.779	42.639	54.581
4.50	247	3867	1493	5607	4.405	68.967	26.627
4.75	398	4850	345	5593	7.116	86.716	6.168
5.00	1603	4081	0	5684	28.202	71.798	0.000
5.25	2332	3426	0	5758	40.500	59.500	0.000
5.50	3254	2706	0	5960	54.597	45.403	0.000
5.75	4679	1663	0	6342	73.778	26.222	0.000
6.00	5549	1180	0	6729	82.464	17.536	0.000
6.25	5758	1166	0	6924	83.160	16.840	0.000
6.50	6741	781	0	7522	89.617	10.383	0.000
6.75	7443	495	0	7938	93.764	6.236	0.000
7.00	7569	298	0	7867	96.212	3.788	0.000
8.00	7217	129	0	7346	98.244	1.756	0.000
9.00	7163	184	0	7347	97.496	2.504	0.000

Supplemental Table 7: Number of chains of a given length output by ModelAngelo

Model Resolution (Å)	Number of chains			Total number of chains
	1 - 10 residues	11 - 100 residues	101+ residues	
2.51	50	1	41	92
3.00	51	2	26	79
4.00	52	14	25	91
4.25	92	39	20	151
4.50	131	85	12	228
4.75	176	107	3	286
5.00	471	162	0	633
5.25	843	179	0	1022
5.50	1291	155	0	1446
5.75	1780	106	0	1886
6.00	2210	84	0	2294
6.25	2295	80	0	2375
6.50	2751	56	0	2807
6.75	3141	38	0	3179
7.00	3179	23	0	3202
8.00	3103	10	0	3113
9.00	3116	14	0	3130

Supplemental Table 8: Protein BLAST results based on consensus sequence of automated model building on a 2.51 Å sharpened volume map

Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. ident	Acc. Len	Accession
dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Virginia]	Salmonella enterica subsp. enterica serovar Virginia	308	308	91%	4.00E-102	66.53	237	MEA7606579.1
dihydrolipoyl succinyltransferase component (E2) [Salmonella enterica subsp. enterica serovar Heidelberg]	Salmonella enterica subsp. enterica serovar Heidelberg	308	308	91%	5.00E-102	66.53	258	SQJ29857.1
dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	308	308	91%	6.00E-102	66.53	241	EEN7692697.1
dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Wilhelmsburg]	Salmonella enterica subsp. enterica serovar Wilhelmsburg	308	308	91%	6.00E-102	66.53	257	TGC90782.1

dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Typhimurium]	Salmonella enterica subsp. enterica serovar Typhimurium	308	308	91%	7.00E-102	66.53	260	MBZ5059444.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli O157:H7]	Escherichia coli O157:H7	307	307	89%	7.00E-102	67.08	240	EFC3643281.1
dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Typhimurium]	Salmonella enterica subsp. enterica serovar Typhimurium	307	307	89%	7.00E-102	67.5	233	ECY4747990.1
dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	308	308	91%	7.00E-102	66.53	259	WP_080206540.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	7.00E-102	67.08	235	WP_250378311.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	7.00E-102	67.08	234	WP_149465242.1

TPA: dihydrolipoyl lysine- residue succinyltran sferase [Salmonella enterica]	Salmonell a enterica	308	308	91%	8.00E-102	66.53	263	HGE8117 794.1
dihydrolipoyl lysine- residue succinyltran sferase [Salmonella enterica subsp. enterica serovar Reading]	Salmonell a enterica subsp. enterica serovar Reading	307	307	91%	8.00E-102	66.53	241	EDV1620 825.1
dihydrolipoyl lysine- residue succinyltran sferase [Escherichia coli O177]	Escherichi a coli O177	307	307	89%	8.00E-102	67.08	229	EFA88547 54.1
dihydrolipoyl lysine- residue succinyltran sferase [Escherichia]	Escherichi a	307	307	89%	8.00E-102	67.08	236	WP_0006 29458.1
dihydrolipoyl lysine- residue succinyltran sferase [Salmonella enterica]	Salmonell a enterica	307	307	89%	8.00E-102	67.5	231	WP_1282 77741.1
TPA: dihydrolipoyl lysine- residue succinyltran sferase [Escherichia coli]	Escherichi a coli	307	307	89%	8.00E-102	67.08	240	HDY2775 515.1

dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	307	307	89%	9.00E-102	67.5	232	WP_080094185.1
Dihydrolipamide succinyltransferase [Salmonella enterica subsp. enterica serovar Wandsworth str. A4-580]	Salmonella enterica subsp. enterica serovar Wandsworth str. A4-580	308	308	91%	9.00E-102	66.53	266	EHD05307.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	9.00E-102	67.08	230	EGE7843444.1
hypothetical protein SM286126_07181 [Salmonella enterica subsp. enterica serovar Typhi]	Salmonella enterica subsp. enterica serovar Typhi	308	308	91%	9.00E-102	66.53	262	AYU11211.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	1.00E-101	67.08	237	WP_252389303.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	1.00E-101	67.08	233	WP_136823828.1

dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	1.00E-101	67.08	241	EIH95925 08.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	1.00E-101	67.08	238	EFO3983 716.1
dihydrolipoyl succinyltransferase [Salmonella enterica subsp. enterica serovar Agona str. 442692 2-4]	Salmonella enterica subsp. enterica serovar Agona str. 442692 2-4	308	308	91%	1.00E-101	66.53	281	ESB3346 9.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	1.00E-101	67.08	239	EEZ34791 70.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli O157:H7]	Escherichia coli O157:H7	306	306	89%	1.00E-101	67.08	231	EEW1174 705.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	1.00E-101	67.08	232	ENT2450 297.1

2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	308	308	91%	1.00E-101	66.53	283	WP_058818759.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	1.00E-101	66.67	235	WP_122792276.1
dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica]	Salmonella enterica subsp. enterica	308	308	91%	1.00E-101	66.53	266	ECE6616558.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	1.00E-101	67.08	243	TJB60735.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	1.00E-101	67.08	248	KAA0647049.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	1.00E-101	67.36	228	WP_229024141.1

dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	1.00E-101	67.08	257	MCU7719 730.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	1.00E-101	67.08	259	EIC17345 75.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	308	308	91%	1.00E-101	66.53	281	WP_0241 44429.1
TPA: dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	1.00E-101	67.08	261	HAM4331 889.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	308	308	91%	1.00E-101	66.53	273	HGE8103 874.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	1.00E-101	67.08	255	WP_0420 66964.1

dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica]	Salmonella enterica subsp. enterica	307	307	89%	1.00E-101	67.08	249	EHK8207 480.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	250	WP_3236 53019.1
dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Enteritidis]	Salmonella enterica subsp. enterica serovar Enteritidis	306	306	89%	2.00E-101	67.08	233	EIF46042 41.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	256	MCJ8642 909.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	2.00E-101	67.08	242	WP_1495 18815.1
TPA: dihydrolipoyl lysine-residue succinyltransferase [Citrobacter freundii]	Citrobacter freundii	306	306	91%	2.00E-101	66.12	245	HBI36839 21.1

2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	308	308	91%	2.00E-101	66.53	277	ENQ4548 694.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	2.00E-101	67.08	243	EEX5691 720.1
TPA: dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	254	HDC0239 447.1
dihydrolipoyl succinyltransferase component (E2) [Salmonella bongori]	Salmonella bongori	306	306	89%	2.00E-101	67.5	235	VDZ8010 3.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Virginia]	Salmonella enterica subsp. enterica serovar Virginia	308	308	91%	2.00E-101	66.53	290	MEA5988 320.1

hypothetical protein ECZU26_29390 [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	260	GHL32114.1
TPA: dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	2.00E-101	67.08	244	HBB1186217.1
dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	307	307	91%	2.00E-101	66.53	267	WP_052938831.1
dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Typhimurium var. 5-]	Salmonella enterica subsp. enterica serovar Typhimurium var. 5-	308	308	91%	2.00E-101	66.53	272	EDT4416474.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	2.00E-101	67.08	245	WP_136775487.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	308	308	89%	2.00E-101	67.08	282	MDY9040892.1

2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Typhimurium]	Salmonella enterica subsp. enterica serovar Typhimurium	308	308	91%	2.00E-101	66.53	301	MBZ5045 664.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	308	308	91%	2.00E-101	66.53	294	MEX8985 164.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli O145:H28]	Escherichia coli O145:H28	306	306	89%	2.00E-101	67.08	246	EJH51929 81.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	260	WP_2523 91012.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	2.00E-101	67.08	247	WP_1851 68965.1

2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Typhimurium]	Salmonella enterica subsp. enterica serovar Typhimurium	309	309	91%	2.00E-101	66.53	311	MBZ4776989.1
dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	307	307	91%	2.00E-101	66.53	269	EBF1873699.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	263	WP_047654718.1
dihydrolipoamide succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	263	OWF26202.1
TPA: dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	264	HAN7662089.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	2.00E-101	67.08	248	TJB30469.1

dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	259	EGE6907964.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	259	WP_119682542.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli O145:H28]	Escherichia coli O145:H28	307	307	89%	2.00E-101	67.08	264	EJH5270977.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Heidelberg]	Salmonella enterica subsp. enterica serovar Heidelberg	312	312	91%	2.00E-101	67.21	401	EBL6043066.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	308	308	89%	2.00E-101	67.08	280	WP_320759799.1

dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	2.00E-101	67.08	252	MDY9032 137.1
TPA: dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	2.00E-101	67.08	252	HBD1696 035.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	2.00E-101	67.08	253	TJT18798 .1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	2.00E-101	67.08	253	WP_1367 48022.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	2.00E-101	67.08	253	EFH6296 858.1
dihydrolipoamide succinyltransferase component (E2) [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	269	VFT70387 .1

2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	274	MDY8964 183.1
TPA: dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	265	HAP0635 211.1
dihydrolipoyl succinyltransferase component (E2) [Salmonella enterica subsp. enterica serovar Bovismorbificans]	Salmonella enterica subsp. enterica serovar Bovismorbificans	308	308	91%	2.00E-101	66.53	288	CNT7473 6.1
dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica]	Salmonella enterica subsp. enterica	309	309	91%	2.00E-101	66.53	314	ECE5907 583.1
Dihydrolipoyl succinyltransferase [Salmonella enterica subsp. enterica serovar Alachua str. R6-377]	Salmonella enterica subsp. enterica serovar Alachua str. R6-377	308	308	91%	2.00E-101	66.53	296	EHC4310 0.1

2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	309	309	91%	2.00E-101	66.53	321	MDX8924 439.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	269	WP_1159 69540.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	2.00E-101	67.08	269	WP_2495 24430.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	308	308	89%	2.00E-101	67.08	286	WP_0470 81876.1

2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	308	308	91%	2.00E-101	66.53	296	WP_080186295.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica]	Salmonella enterica subsp. enterica	308	308	91%	3.00E-101	66.53	309	HAT5958997.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	308	308	91%	3.00E-101	66.53	298	WP_079839436.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	3.00E-101	67.08	274	RIC38964.1

dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	306	306	89%	3.00E-101	67.08	253	WP_136801371.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	307	307	89%	3.00E-101	67.08	270	WP_250382326.1
dihydrolipoyl succinyltransferase [Salmonella enterica subsp. enterica serovar Cerro str. 5569]	Salmonella enterica subsp. enterica serovar Cerro str. 5569	308	308	91%	3.00E-101	66.53	307	ETC75003.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	308	308	89%	3.00E-101	67.08	286	WP_060643349.1
dihydrolipoyl succinyltransferase [Enterobacter asburiae]	Enterobacter asburiae	307	307	91%	3.00E-101	65.71	270	STD18558.1

2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	308	308	89%	3.00E-101	67.08	295	NAG0076 3.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Typhimurium]	Salmonella enterica subsp. enterica serovar Typhimurium	311	311	91%	3.00E-101	66.94	402	ECA8639 535.1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Ibadan]	Salmonella enterica subsp. enterica serovar Ibadan	309	309	91%	3.00E-101	66.53	320	ECY3951 163.1

Supplemental Table 9: Protein BLAST results based on consensus sequence of automated model building on a 3.00 Å low-pass filtered volume map

Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. ident	Acc. Len	Accession
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli O157:H7]	Escherichia coli O157:H7	379	379	99%	1.00E-130	81.62	231	EEW1174705.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	1.00E-130	81.62	239	EEZ3479170.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli O157:H7]	Escherichia coli O157:H7	379	379	99%	1.00E-130	81.62	240	EFC3643281.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	1.00E-130	81.62	235	WP_250378311.1
TPA: dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	1.00E-130	81.62	240	HDY2775515.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia]	Escherichia	379	379	99%	1.00E-130	81.62	236	WP_000629458.1

dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	1.00E-130	81.62	235	WP_12279 2276.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	1.00E-130	81.62	233	WP_13682 3828.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	1.00E-130	81.62	234	WP_14946 5242.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	1.00E-130	81.62	241	EIH959250 8.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	1.00E-130	81.62	243	TJB60735. 1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	1.00E-130	81.62	238	EFO39837 16.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	1.00E-130	81.62	237	WP_25238 9303.1

dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	2.00E-130	81.62	259	EIC173457 5.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	2.00E-130	81.62	248	KAA06470 49.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	378	378	99%	2.00E-130	81.62	232	ENT24502 97.1
dihydrolipoyll ysine- residue succinyltrans ferase [Salmonella enterica subsp. enterica]	Salmonella enterica subsp. enterica	379	379	99%	2.00E-130	81.62	249	EHK82074 80.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	2.00E-130	81.62	260	WP_25239 1012.1
2- oxoglutarate dehydrogen ase complex dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	380	380	99%	2.00E-130	81.62	282	MDY90408 92.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	2.00E-130	81.62	259	EGE69079 64.1

dihydrolipoyl lysine- residue succinyltrans ferase [Escherichia coli]	Escherichia coli	379	379	99%	2.00E-130	81.62	259	WP_11968 2542.1
hypothetical protein ECZU26_29 390 [Escherichia coli]	Escherichia coli	379	379	99%	2.00E-130	81.62	260	GHL32114 .1
TPA: dihydrolipoyl lysine- residue succinyltrans ferase [Escherichia coli]	Escherichia coli	379	379	99%	2.00E-130	81.62	261	HAM43318 89.1
dihydrolipoyl lysine- residue succinyltrans ferase [Escherichia coli]	Escherichia coli	379	379	99%	2.00E-130	81.62	250	WP_32365 3019.1
dihydrolipoyl lysine- residue succinyltrans ferase [Escherichia coli]	Escherichia coli	379	379	99%	2.00E-130	81.62	257	MCU7719 730.1
dihydrolipoyl lysine- residue succinyltrans ferase [Escherichia coli]	Escherichia coli	379	379	99%	2.00E-130	81.62	263	WP_04765 4718.1
dihydrolipoa mide succinyltrans ferase [Escherichia coli]	Escherichia coli	379	379	99%	2.00E-130	81.62	263	OWF2620 2.1

dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli O145:H28]	Escherichi a coli O145:H28	379	379	99%	2.00E-130	81.62	264	EJH52709 77.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	378	378	99%	3.00E-130	81.62	242	WP_14951 8815.1
TPA: dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	3.00E-130	81.62	264	HAN76620 89.1
dihydrolipoa mide succinyltrans ferase component (E2) [Escherichia coli]	Escherichi a coli	379	379	99%	3.00E-130	81.62	269	VFT70387. 1
2- oxoglutarate dehydrogen ase complex dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	384	384	99%	3.00E-130	81.62	405	UIU60256. 1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	378	378	99%	3.00E-130	81.62	243	EEX56917 20.1

TPA: dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	3.00E-130	81.62	254	HDC02394 47.1
TPA: dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	378	378	99%	3.00E-130	81.62	244	HBB11862 17.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	379	379	99%	3.00E-130	81.62	255	WP_04206 6964.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	378	378	99%	3.00E-130	81.62	245	WP_13677 5487.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli O145:H28]	Escherichi a coli O145:H28	378	378	99%	3.00E-130	81.62	246	EJH51929 81.1
dihydrolipoa mide succinyltrans ferase component (E2) [Escherichia coli]	Escherichi a coli	379	379	99%	3.00E-130	81.62	269	STG69599 .1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	378	378	99%	3.00E-130	81.62	247	WP_18516 8965.1

TPA: dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	3.00E-130	81.62	265	HAP06352 11.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	3.00E-130	81.62	256	MCJ86429 09.1
dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	378	378	99%	3.00E-130	81.62	248	TJB30469. 1
dihydrolipoamide succinyltransferase [Shigella sonnei]	Shigella sonnei	380	380	99%	3.00E-130	81.62	291	CSF30971 .1
2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	380	380	99%	3.00E-130	81.62	286	WP_06064 3349.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	384	384	99%	3.00E-130	82.05	405	HDV47621 63.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	4.00E-130	81.62	286	WP_047081876.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	384	384	99%	4.00E-130	82.05	405	WP_103682200.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	378	378	99%	4.00E-130	81.62	252	MDY9032137.1
TPA: dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	378	378	99%	4.00E-130	81.62	252	HBD1696035.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	4.00E-130	81.62	287	EEZ2060122.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	378	378	99%	4.00E-130	81.62	253	TJT18798.1

dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	378	378	99%	4.00E-130	81.62	253	WP_13674 8022.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	378	378	99%	4.00E-130	81.62	253	EFH62968 58.1
2- oxoglutarate dehydrogen ase complex dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	381	381	99%	4.00E-130	81.62	321	EEY66936 70.1
2- oxoglutarate dehydrogen ase complex dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	381	381	99%	4.00E-130	81.62	324	EER83314 71.1
2- oxoglutarate dehydrogen ase complex dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	381	381	99%	4.00E-130	81.62	324	MDO4358 214.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	4.00E-130	81.62	275	WP_136750337.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	380	380	99%	4.00E-130	81.62	303	EEY6784672.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	384	384	99%	4.00E-130	82.05	405	EFD4584379.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	380	380	99%	4.00E-130	81.62	295	NAG00763.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	380	380	99%	4.00E-130	81.62	322	WP_194154148.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	380	380	99%	4.00E-130	81.62	322	MCU8601 182.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	380	380	99%	4.00E-130	81.62	312	HCO07617 33.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	380	380	99%	4.00E-130	81.62	318	MCX05063 93.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	378	378	99%	4.00E-130	81.62	253	WP_13680 1371.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	5.00E-130	81.62	270	WP_25038 2326.1

2-oxoglutarate dehydrogenase complex dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	5.00E-130	81.62	269	WP_115969540.1
2-oxoglutarate dehydrogenase complex dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	5.00E-130	81.62	269	WP_249524430.1
2-oxoglutarate dehydrogenase complex dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	5.00E-130	81.62	280	WP_320759799.1
2-oxoglutarate dehydrogenase complex dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	5.00E-130	81.62	274	RIC38964.1
dihydrolipoamide succinyltransferase component (E2) [Escherichia coli]	Escherichia coli	381	381	99%	5.00E-130	81.62	332	STM59242.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	380	380	99%	5.00E-130	81.62	300	MBA18400 94.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	381	381	99%	5.00E-130	81.62	338	MDY87122 51.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	384	384	99%	6.00E-130	82.05	405	EGX88180 27.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	384	384	99%	6.00E-130	82.05	405	ENF30858 91.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	6.00E-130	81.62	274	MDY89641 83.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	384	384	99%	6.00E-130	82.05	405	ENL26460 46.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	379	379	99%	6.00E-130	81.62	292	WP_19449 8297.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	381	381	99%	6.00E-130	81.62	337	WP_04822 4949.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	377	377	98%	6.00E-130	81.55	230	EGE78434 44.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	383	383	99%	7.00E-130	81.62	405	EKM54644 37.1

TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	383	383	99%	7.00E-130	82.05	405	HAN95207 59.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	381	381	99%	7.00E-130	81.62	354	MBE97801 12.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	380	380	99%	8.00E-130	81.62	328	WP_22900 2757.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	383	383	99%	8.00E-130	81.62	400	HDI93510 51.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	383	383	99%	8.00E-130	82.05	405	WP_11291 6033.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	383	383	99%	8.00E-130	82.05	405	WP_024234840.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	383	383	99%	8.00E-130	82.05	405	WP_302422103.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	381	381	99%	9.00E-130	81.62	358	WP_368270211.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	380	380	99%	9.00E-130	81.62	332	HCN8464961.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	383	383	99%	9.00E-130	82.05	405	HDS6732478.1

dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	383	383	99%	9.00E-130	81.62	405	EFO27894 61.1
TPA: 2- oxoglutarate dehydrogen ase complex dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	383	383	99%	1.00E-129	81.62	405	HEI323515 2.1
2- oxoglutarate dehydrogen ase complex dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	380	380	99%	1.00E-129	81.62	331	WP_04206 8848.1
TPA: 2- oxoglutarate dehydrogen ase complex dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	383	383	99%	1.00E-129	81.62	405	HDK89209 24.1
TPA: 2- oxoglutarate dehydrogen ase complex dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	382	382	99%	1.00E-129	81.62	375	HBB38354 21.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	381	381	99%	1.00E-129	81.62	366	MXS49548.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	383	383	99%	1.00E-129	81.62	405	WP_103572461.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	380	380	99%	1.00E-129	81.62	345	MBA1060735.1

Supplemental Table 10: Protein BLAST results based on consensus sequence of automated model building on a 4.00 Å low-pass filtered volume map

Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. ident	Acc. Len	Accession
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	99%	7.00E-120	73.62	239	EEZ3479170.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	99%	7.00E-120	73.62	235	WP_250378311.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	99%	7.00E-120	73.62	238	EFO3983716.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia]	Escherichia	352	352	99%	7.00E-120	73.62	236	WP_000629458.1
TPA: dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	99%	8.00E-120	73.62	240	HDY2775515.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli O157:H7]	Escherichia coli O157:H7	352	352	99%	8.00E-120	73.62	240	EFC3643281.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	351	351	99%	9.00E-120	73.62	234	WP_149465242.1

dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	99%	9.00E-120	73.62	233	WP_13682 3828.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	99%	1.00E-119	73.62	237	WP_25238 9303.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	99%	1.00E-119	73.62	241	EIH959250 8.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	352	352	99%	1.00E-119	73.62	243	TJB60735. 1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	1.00E-119	73.93	232	ENT24502 97.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	99%	1.00E-119	73.19	235	WP_12279 2276.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	242	WP_14951 8815.1

dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	243	EEX56917 20.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	248	KAA06470 49.1
TPA: dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	244	HBB11862 17.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	352	352	98%	2.00E-119	73.93	257	MCU7719 730.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	245	WP_13677 5487.1
dihydrolipoyl ysine- residue succinyltrans ferase [Salmonella enterica subsp. enterica]	Salmonella enterica subsp. enterica	351	351	98%	2.00E-119	73.93	249	EHK82074 80.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli O145:H28]	Escherichi a coli O145:H28	351	351	98%	2.00E-119	73.93	246	EJH51929 81.1

dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	247	WP_18516 8965.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	259	EGE69079 64.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	259	WP_11968 2542.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	248	TJB30469. 1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	259	EIC173457 5.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	260	WP_25239 1012.1
TPA: dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	254	HDC02394 47.1

dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	255	WP_04206 6964.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli O145:H28]	Escherichi a coli O145:H28	352	352	98%	2.00E-119	73.93	264	EJH52709 77.1
hypothetical protein ECZU26_29 390 [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	260	GHL32114 .1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	250	WP_32365 3019.1
dihydrolipoa mide succinyltrans ferase component (E2) [Escherichia coli]	Escherichi a coli	352	352	98%	2.00E-119	73.93	269	VFT70387. 1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	252	MDY90321 37.1
TPA: dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	351	351	98%	2.00E-119	73.93	252	HBD16960 35.1

dihydrolipoamide succinyltransferase component (E2) [Escherichia coli]	Escherichia coli	352	352	98%	2.00E-119	73.93	269	STG69599.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	351	351	98%	2.00E-119	73.93	253	TJT18798.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	351	351	98%	2.00E-119	73.93	253	WP_136748022.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	351	351	98%	2.00E-119	73.93	253	EFH6296858.1
TPA: dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	351	351	98%	2.00E-119	73.93	261	HAM4331889.1
TPA: dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	351	351	98%	2.00E-119	73.93	265	HAP0635211.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	351	351	98%	2.00E-119	73.93	256	MCJ8642909.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	2.00E-119	73.93	269	WP_115969540.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	2.00E-119	73.93	269	WP_249524430.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	3.00E-119	73.93	282	MDY9040892.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	351	351	98%	3.00E-119	73.93	270	WP_250382326.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	3.00E-119	73.93	280	WP_320759799.1

dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichia coli	351	351	98%	3.00E-119	73.93	263	WP_04765 4718.1
dihydrolipoa mide succinyltrans ferase [Escherichia coli]	Escherichia coli	351	351	98%	3.00E-119	73.93	263	OWF2620 2.1
TPA: dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichia coli	351	351	98%	3.00E-119	73.93	264	HAN76620 89.1
dihydrolipoa mide succinyltrans ferase [Shigella sonnei]	Shigella sonnei	352	352	98%	3.00E-119	73.93	291	CSF30971 .1
2- oxoglutarate dehydrogena se complex dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichia coli	351	351	98%	3.00E-119	73.93	274	MDY89641 83.1
2- oxoglutarate dehydrogena se complex dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichia coli	352	352	98%	3.00E-119	73.93	287	EEZ20601 22.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	356	356	99%	3.00E-119	74.04	405	WP_136803128.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	356	356	99%	3.00E-119	74.04	405	WP_096845185.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	350	350	98%	3.00E-119	73.93	253	WP_136801371.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	4.00E-119	73.93	286	WP_060643349.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	351	351	98%	4.00E-119	73.93	274	RIC38964.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	351	351	98%	4.00E-119	73.93	275	WP_136750337.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	4.00E-119	73.93	312	HCO0761733.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	4.00E-119	73.93	295	NAG00763.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	356	356	99%	5.00E-119	74.04	405	MDY9786167.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	5.00E-119	73.93	292	WP_194498297.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	5.00E-119	73.93	303	EEY67846 72.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	351	351	98%	5.00E-119	73.93	286	WP_04708 1876.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	353	353	98%	5.00E-119	73.93	321	EEY66936 70.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	356	356	98%	5.00E-119	73.93	405	WP_19245 9758.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	353	353	98%	5.00E-119	73.93	324	EER83314 71.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	353	353	98%	5.00E-119	73.93	324	MDO4358 214.1
TPA: dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	350	350	99%	5.00E-119	73.62	250	HBI367206 5.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	5.00E-119	73.93	300	MBA18400 94.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	353	353	98%	5.00E-119	73.93	338	MDY87122 51.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli O157:H7]	Escherichia coli O157:H7	349	349	98%	6.00E-119	73.82	231	EEW1174 705.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	6.00E-119	73.93	318	MCX05063 93.1
dihydrolipoyl succinyltransferase component (E2) [Escherichia coli]	Escherichia coli	353	353	98%	6.00E-119	73.93	332	STM59242 .1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	6.00E-119	73.93	322	WP_19415 4148.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	6.00E-119	73.93	322	MCU8601 182.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	353	353	98%	7.00E-119	73.93	328	WP_22900 2757.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	355	355	98%	7.00E-119	74.36	405	MDF1405070.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	355	355	98%	7.00E-119	74.36	405	EEZ9068234.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	353	353	98%	8.00E-119	73.93	332	HCN8464961.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	353	353	98%	8.00E-119	73.93	337	WP_048224949.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	352	352	98%	8.00E-119	73.93	331	WP_042068848.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	353	353	98%	8.00E-119	73.93	345	MBA10607 35.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	353	353	98%	9.00E-119	73.93	354	MBE97801 12.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	355	355	98%	9.00E-119	73.93	405	EKM54644 37.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	355	355	98%	1.00E-118	74.36	405	WP_03221 0407.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	355	355	98%	1.00E-118	74.36	405	HAH85246 27.1

dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	349	349	98%	1.00E-118	73.93	253	WP_34707 9825.1
2- oxoglutarate dehydrogena se complex dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	355	355	98%	1.00E-118	74.36	405	EIR654457 0.1
TPA: 2- oxoglutarate dehydrogena se complex dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	355	355	98%	1.00E-118	73.93	405	HCP80299 24.1
2- oxoglutarate dehydrogena se complex dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia]	Escherichi a	355	355	98%	1.00E-118	74.36	405	WP_00009 9817.1
2- oxoglutarate dehydrogena se complex dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	350	350	98%	1.00E-118	73.93	279	WP_24716 6683.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	355	355	99%	1.00E-118	73.31	405	UIU60256.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	355	355	98%	1.00E-118	74.36	405	HCT2454644.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	353	353	98%	1.00E-118	73.93	366	MXS49548.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia albertii]	Escherichia albertii	355	355	99%	1.00E-118	73.62	400	WP_131109862.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	355	355	98%	1.00E-118	74.36	405	ENL2646046.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	355	355	98%	1.00E-118	74.36	405	WP_112916033.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	355	355	98%	1.00E-118	74.36	405	HAN9520759.1

Supplemental Table 11: Protein BLAST results based on consensus sequence of automated model building on a 4.25 Å low-pass filtered volume map

Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. ident	Acc. Len	Accession
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	305	305	95%	1.00E-101	66.08	226	WP_074164196.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	304	304	99%	4.00E-101	64.68	239	EEZ3479170.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia]	Escherichia	304	304	99%	4.00E-101	64.68	236	WP_000629458.1
TPA: dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	304	304	99%	5.00E-101	64.68	240	HDY2775515.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli O157:H7]	Escherichia coli O157:H7	304	304	99%	5.00E-101	64.68	240	EFC3643281.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	304	304	99%	5.00E-101	64.68	238	EFO3983716.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	304	304	99%	5.00E-101	64.68	243	TJB60735.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	304	304	99%	6.00E-101	64.68	237	WP_252389303.1

dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	304	304	99%	6.00E-101	64.68	241	EIH959250 8.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	99%	7.00E-101	64.68	235	WP_25037 8311.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	7.00E-101	64.96	232	ENT24502 97.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	99%	7.00E-101	64.68	234	WP_14946 5242.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	99%	8.00E-101	64.68	233	WP_13682 3828.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli O157:H7]	Escherichi a coli O157:H7	303	303	97%	9.00E-101	64.66	231	EEW1174 705.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	99%	9.00E-101	64.68	235	WP_12279 2276.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	242	WP_14951 8815.1

dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	243	EEX56917 20.1
TPA: dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	244	HBB11862 17.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	245	WP_13677 5487.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli O145:H28]	Escherichi a coli O145:H28	303	303	98%	1.00E-100	64.96	246	EJH51929 81.1
hypothetical protein ECZU22_19 390 [Escherichia coli]	Escherichi a coli	303	303	95%	1.00E-100	65.64	227	GHL08040 .1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	304	304	98%	1.00E-100	64.96	257	MCU7719 730.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	247	WP_18516 8965.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	95%	1.00E-100	65.64	226	EER22483 80.1

dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	256	MCJ86429 09.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	248	TJB30469. 1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	250	WP_32365 3019.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	97%	1.00E-100	64.94	230	EGE78434 44.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	302	302	95%	1.00E-100	65.64	227	EIH243655 3.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	248	KAA06470 49.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	302	302	95%	1.00E-100	65.64	228	WP_22902 4141.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	259	EIC173457 5.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	252	MDY90321 37.1

TPA: dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	252	HBD16960 35.1
dihydrolipoyll ysine-residue succinyltrans ferase [Salmonella enterica subsp. enterica]	Salmonella enterica subsp. enterica	303	303	98%	1.00E-100	64.96	249	EHK82074 80.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	304	304	98%	1.00E-100	64.96	263	WP_04765 4718.1
dihydrolipoa mide succinyltrans ferase [Escherichia coli]	Escherichi a coli	304	304	98%	1.00E-100	64.96	263	OWF2620 2.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	253	TJT18798. 1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	253	WP_13674 8022.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	1.00E-100	64.96	253	EFH62968 58.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli O177]	Escherichi a coli O177	302	302	95%	1.00E-100	65.64	229	EFA88547 54.1

dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	1.00E-100	63.83	236	MDN7188851.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	303	303	98%	2.00E-100	64.96	253	WP_136801371.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	303	303	98%	2.00E-100	64.96	255	WP_042066964.1
TPA: dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	303	303	98%	2.00E-100	64.96	264	HAN7662089.1
dihydrolipoyllysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Virginia]	Salmonella enterica subsp. enterica serovar Virginia	303	303	99%	2.00E-100	64.26	237	MEA7606579.1
hypothetical protein ECZU26_29390 [Escherichia coli]	Escherichia coli	303	303	98%	2.00E-100	64.96	260	GHL32114.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	303	303	98%	2.00E-100	64.96	260	WP_252391012.1
TPA: dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	303	303	98%	2.00E-100	64.96	254	HDC0239447.1

dihydrolipoyl lysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumonia e	303	303	99%	2.00E-100	63.83	242	WP_22695 6088.1
TPA: dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	2.00E-100	64.96	265	HAP06352 11.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	2.00E-100	64.96	259	EGE69079 64.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	303	303	98%	2.00E-100	64.96	259	WP_11968 2542.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli O145:H28]	Escherichi a coli O145:H28	303	303	98%	2.00E-100	64.96	264	EJH52709 77.1
dihydrolipoyl lysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumonia e	303	303	99%	2.00E-100	63.83	241	WP_00289 5034.1
dihydrolipoyl lysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumonia e	303	303	99%	2.00E-100	63.83	246	MBD74602 89.1
dihydrolipoa mide succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumonia e	302	302	99%	2.00E-100	63.83	238	KTG74015 .1

dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	302	302	95%	2.00E-100	65.64	227	ENU31179 23.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	2.00E-100	63.83	244	WP_01787 9867.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	2.00E-100	63.83	245	WP_07725 3825.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	2.00E-100	63.83	243	EIW91726 19.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	2.00E-100	63.83	246	WP_09666 0644.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	302	302	99%	2.00E-100	63.83	237	WP_15137 0611.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	2.00E-100	63.83	247	WP_15136 8547.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	304	304	98%	2.00E-100	64.96	282	MDY90408 92.1

dihydrolipoyl ysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	2.00E-100	63.83	244	PTB11879. 1
TPA: dihydrolipoyl ysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	2.00E-100	63.83	248	HDG80330 15.1
TPA: dihydrolipoyl ysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	2.00E-100	63.83	248	HBT58809 24.1
TPA: dihydrolipoyl ysine-residue succinyltrans ferase [Klebsiella quasipneumo niae subsp. similipneumo niae]	Klebsiella quasipneumo niae subsp. similipneumo niae	303	303	99%	2.00E-100	63.83	245	HBT47946 23.1
dihydrolipoyl ysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	2.00E-100	63.83	249	PCR33351 .1
dihydrolipoyl ysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	302	302	99%	2.00E-100	63.83	235	WP_13493 3365.1
dihydrolipoyl ysine-residue succinyltrans ferase [Salmonella enterica subsp. enterica serovar Reading]	Salmonella enterica subsp. enterica serovar Reading	302	302	99%	2.00E-100	64.26	241	EDV16208 25.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	304	304	98%	2.00E-100	64.96	280	WP_320759799.1
dihydrolipoyl succinyltransferase component (E2) [Escherichia coli]	Escherichia coli	303	303	98%	2.00E-100	64.96	269	STG69599.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	2.00E-100	63.83	250	WP_097405167.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	308	308	98%	2.00E-100	65.38	405	HFG3098669.1
TPA: dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	303	303	98%	2.00E-100	64.96	261	HAM4331889.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	303	303	98%	2.00E-100	64.96	274	RIC38964.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	303	303	98%	2.00E-100	64.96	275	WP_136750337.1
dihydrolipoyl succinyltransferase component (E2) [Escherichia coli]	Escherichia coli	303	303	98%	3.00E-100	64.96	269	VFT70387.1
TPA: dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	3.00E-100	63.83	252	HCD8671197.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	304	304	98%	3.00E-100	64.96	286	WP_060643349.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	302	302	99%	3.00E-100	63.83	244	WP_129312831.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	302	302	99%	3.00E-100	63.83	239	RCA06870.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	3.00E-100	63.83	249	WP_134921021.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	304	304	98%	3.00E-100	64.96	286	WP_047081876.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	3.00E-100	63.83	253	WP_265509381.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	302	302	99%	3.00E-100	63.83	249	NEZ34953.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	3.00E-100	63.83	251	RYI69693.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	303	303	99%	3.00E-100	63.83	252	RYI67680.1
dihydrolipoyllysine-residue succinyltransferase [Klebsiella pneumoniae]	Klebsiella pneumoniae	302	302	99%	3.00E-100	63.83	240	RCA07230.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	303	303	98%	3.00E-100	64.96	270	WP_250382326.1

dihydrolipoyll ysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumonia e	302	302	99%	3.00E-100	63.83	243	RYI67076. 1
dihydrolipoyll ysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumonia e	303	303	99%	3.00E-100	63.83	254	WP_22898 6048.1
dihydrolipoyll ysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumonia e	302	302	99%	3.00E-100	63.83	234	WP_19732 4887.1
TPA: dihydrolipoyll ysine-residue succinyltrans ferase [Klebsiella pneumoniae]	Klebsiella pneumonia e	303	303	99%	3.00E-100	63.83	255	HBY00754 28.1
dihydrolipoyll ysine-residue succinyltrans ferase [Salmonella enterica]	Salmonella enterica	302	302	99%	3.00E-100	64.26	241	EEN76926 97.1
2- oxoglutarate dehydrogena se complex dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	304	304	98%	3.00E-100	64.96	287	EEZ20601 22.1
TPA: 2- oxoglutarate dehydrogena se complex dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	305	305	98%	3.00E-100	64.96	312	HCO07617 33.1

2-oxoglutarate dehydrogenase complex dihydrolipoyl lysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	304	304	98%	3.00E-100	64.96	292	WP_194498297.1
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Supplemental Table 12: Protein BLAST results based on consensus sequence of automated model building on a 4.50 Å low-pass filtered volume map

Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. ident	Acc. Len	Accession
dihydrolipoamide acyltransferase SucB [Shewanella livingstonensis]	Shewanella livingstonensis	162	162	87%	5.00E-45	52.73	333	BAL45917.1
dihydrolipooyllysine-residue succinyltransferase [Enterobacter hormaechei]	Enterobacter hormaechei	133	218	97%	2.00E-34	46.15	256	KAB2506993.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	97%	2.00E-34	46.15	218	MCJ8727037.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	97%	4.00E-34	46.15	234	WP_149465242.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	4.00E-34	46.15	233	WP_136823828.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	4.00E-34	46.15	235	WP_250378311.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia]	Escherichia	131	131	97%	4.00E-34	46.15	236	WP_000629458.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli O157:H7]	Escherichia coli O157:H7	131	131	97%	5.00E-34	46.15	231	EEW1174705.1

dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	5.00E-34	46.15	232	ENT24502 97.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	5.00E-34	46.15	237	WP_25238 9303.1
TPA: dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	5.00E-34	46.15	240	HDY27755 15.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli O157:H7]	Escherichi a coli O157:H7	131	131	97%	5.00E-34	46.15	240	EFC36432 81.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	5.00E-34	46.15	241	EIH959250 8.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	5.00E-34	46.15	238	EFO39837 16.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	5.00E-34	46.15	239	EEZ34791 70.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	6.00E-34	46.15	235	WP_12279 2276.1

dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	97%	6.00E-34	46.15	248	KAA06470 49.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	6.00E-34	46.15	243	TJB60735. 1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	6.00E-34	46.15	242	WP_14951 8815.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	6.00E-34	46.15	243	EEX56917 20.1
TPA: dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	6.00E-34	46.15	244	HBB11862 17.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	6.00E-34	46.15	245	WP_13677 5487.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli O145:H28]	Escherichi a coli O145:H28	131	131	97%	7.00E-34	46.15	246	EJH51929 81.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	7.00E-34	46.15	247	WP_18516 8965.1

dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	7.00E-34	46.15	248	TJB30469.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	97%	7.00E-34	46.15	256	MCJ8642909.1
dihydrolipoyllysine-residue succinyltransferase [Salmonella enterica subsp. enterica]	Salmonella enterica subsp. enterica	131	131	97%	7.00E-34	46.15	249	EHK8207480.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	7.00E-34	46.15	250	WP_323653019.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	8.00E-34	46.15	255	WP_042066964.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	8.00E-34	46.15	252	MDY9032137.1
TPA: dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	8.00E-34	46.15	252	HBD1696035.1
TPA: dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	8.00E-34	46.15	250	HBI3672065.1

dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	8.00E-34	46.15	253	WP_34707 9825.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	8.00E-34	46.15	253	TJT18798. 1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	8.00E-34	46.15	253	WP_13674 8022.1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	8.00E-34	46.15	253	EFH62968 58.1
TPA: dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	8.00E-34	46.15	254	HDC02394 47.1
dihydrolipoa mide succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	8.00E-34	46.15	251	NYZ48214 .1
dihydrolipoyl lysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	9.00E-34	46.15	253	WP_13680 1371.1
2-oxo acid dehydrogena se subunit E2 [Acinetobact er baumannii]	Acinetobac ter baumannii	128	128	66%	9.00E-34	56	146	MDC4397 105.1

dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	9.00E-34	46.15	257	MCU7719 730.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	1.00E-33	46.15	259	EIC173457 5.1
TPA: dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	97%	1.00E-33	46.15	261	HAM43318 89.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli O177]	Escherichi a coli O177	130	130	96%	1.00E-33	46.11	229	EFA88547 54.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	220	97%	1.00E-33	46.15	260	WP_25239 1012.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	220	97%	1.00E-33	46.15	259	EGE69079 64.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	220	97%	1.00E-33	46.15	259	WP_11968 2542.1
dihydrolipoyll ysine-residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	221	97%	1.00E-33	46.15	263	WP_04765 4718.1

dihydrolipoamide succinyltransferase [Escherichia coli]	Escherichia coli	131	221	97%	1.00E-33	46.15	263	OWF26202.1
dihydrolipoamide succinyltransferase component (E2) [Escherichia coli]	Escherichia coli	131	131	97%	1.00E-33	46.15	269	VFT70387.1
hypothetical protein ECZU26_29390 [Escherichia coli]	Escherichia coli	131	220	97%	1.00E-33	46.15	260	GHL32114.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	130	130	96%	1.00E-33	46.11	230	EGE7843444.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli O145:H28]	Escherichia coli O145:H28	131	220	97%	1.00E-33	46.15	264	EJH5270977.1
TPA: dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	220	97%	1.00E-33	46.15	264	HAN7662089.1
TPA: dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	220	97%	1.00E-33	46.15	265	HAP0635211.1
dihydrolipooyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	130	130	95%	1.00E-33	46.37	228	WP_229024141.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	1.00E-33	46.15	269	WP_115969540.1
dihydrolipoyl succinyltransferase component (E2) [Escherichia coli]	Escherichia coli	131	131	97%	1.00E-33	46.15	269	STG69599.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	1.00E-33	46.15	269	WP_249524430.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	134	134	97%	1.00E-33	46.7	405	WP_097415199.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	1.00E-33	46.15	270	WP_250382326.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	1.00E-33	46.15	280	WP_320759799.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	134	224	97%	1.00E-33	46.7	405	MCW7185905.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	1.00E-33	46.15	275	WP_136750337.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	2.00E-33	46.15	274	MDY8964183.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	2.00E-33	46.15	274	RIC38964.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	2.00E-33	46.15	279	WP_247166683.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Shigella flexneri 2a]	Shigella flexneri 2a	131	131	97%	2.00E-33	46.15	273	HFT4085970.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	2.00E-33	46.15	282	MDY9040892.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	2.00E-33	46.15	286	WP_047081876.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	2.00E-33	46.15	286	WP_060643349.1

2-oxo acid dehydrogenase subunit E2 [Klebsiella pneumoniae]	Klebsiella pneumoniae	127	127	66%	2.00E-33	56	167	WP_211540998.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	2.00E-33	46.15	295	NAG00763.1
dihydrolipoyl succinyltransferase [Shigella sonnei]	Shigella sonnei	131	221	97%	2.00E-33	46.15	291	CSF30971.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	2.00E-33	46.15	292	WP_194498297.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	129	129	93%	2.00E-33	46.29	226	WP_074164196.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	2.00E-33	46.15	287	EEZ2060122.1
hypothetical protein EIMP300_69380 [Escherichia coli]	Escherichia coli	128	128	93%	2.00E-33	45.98	187	BBU85538.1

TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	97%	3.00E-33	46.15	312	HCO0761733.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	95%	3.00E-33	46.07	318	HCJ6193756.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	3.00E-33	46.15	303	EEY6784672.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	3.00E-33	46.15	300	MBA1840094.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	95%	3.00E-33	46.37	335	MCF2049886.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	95%	3.00E-33	46.07	318	MBW2856955.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	133	133	97%	3.00E-33	46.15	405	WP_192459758.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Shigella sonnei]	Shigella sonnei	132	132	95%	3.00E-33	46.37	334	WP_077134249.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	95%	3.00E-33	46.37	336	HDI5831311.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	221	97%	3.00E-33	46.15	322	WP_194154148.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	221	97%	3.00E-33	46.15	322	MCU8601 182.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	221	97%	3.00E-33	46.15	321	EEY66936 70.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Vibrio sp. FNV 38]	Vibrio sp. FNV 38	132	132	95%	3.00E-33	46.37	327	MDR9828 261.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	95%	3.00E-33	46.37	327	HDH94298 52.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	4.00E-33	46.15	324	EER83314 71.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	97%	4.00E-33	46.15	324	MDO4358 214.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	222	97%	4.00E-33	46.15	331	WP_04206 8848.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	95%	4.00E-33	46.37	328	HDH28347 59.1
dihydrolipoamide succinyltransferase component (E2) [Escherichia coli]	Escherichia coli	132	222	97%	4.00E-33	46.15	332	STM59242 .1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	133	133	97%	4.00E-33	46.7	405	EEZ90682 34.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	221	97%	4.00E-33	46.15	318	MCX05063 93.1
dihydrolipoyl succinyltransferase component (E2) [Salmonella enterica subsp. enterica]	Salmonella enterica subsp. enterica	128	128	96%	4.00E-33	45.56	212	VEA37457 .1

Supplemental Table 13: Protein BLAST results based on consensus sequence of automated model building on a 4.75 Å low-pass filtered volume map

Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. ident	Acc. Len	Accession
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	134	134	94%	5.00E-35	39.57	226	WP_074164196.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli O157:H7]	Escherichia coli O157:H7	132	132	96%	3.00E-34	38.72	231	EEW1174705.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia]	Escherichia	132	132	96%	3.00E-34	38.72	236	WP_000629458.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	3.00E-34	38.72	233	WP_136823828.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	3.00E-34	38.72	232	ENT2450297.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	3.00E-34	38.72	234	WP_149465242.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	3.00E-34	38.72	235	WP_122792276.1

dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	4.00E-34	38.72	237	WP_25238 9303.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	4.00E-34	38.72	238	EFO39837 16.1
hypothetical protein ECZU22_19 390 [Escherichia coli]	Escherichi a coli	131	131	94%	4.00E-34	39.13	227	GHL08040 .1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	4.00E-34	38.72	235	WP_25037 8311.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	4.00E-34	38.72	242	WP_14951 8815.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	4.00E-34	38.72	243	EEX56917 20.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	4.00E-34	38.72	239	EEZ34791 70.1

TPA: dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	4.00E-34	38.72	240	HDY27755 15.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	94%	4.00E-34	39.13	227	EIH243655 3.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli O157:H7]	Escherichi a coli O157:H7	132	132	96%	4.00E-34	38.72	240	EFC36432 81.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	94%	4.00E-34	39.13	226	EER22483 80.1
TPA: dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	4.00E-34	38.72	244	HBB11862 17.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	4.00E-34	38.72	245	WP_13677 5487.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli O145:H28]	Escherichi a coli O145:H28	132	132	96%	4.00E-34	38.72	246	EJH51929 81.1

dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	4.00E-34	38.72	247	WP_18516 8965.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	94%	5.00E-34	39.13	228	WP_22902 4141.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	248	KAA06470 49.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	243	TJB60735. 1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	248	TJB30469. 1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	96%	5.00E-34	38.72	241	EIH959250 8.1
TPA: dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	250	HBI367206 5.1

dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli O177]	Escherichi a coli O177	131	131	94%	5.00E-34	39.13	229	EFA88547 54.1
dihydrolipoyl ysine- residue succinyltrans ferase [Salmonella enterica subsp. enterica]	Salmonella enterica subsp. enterica	132	132	96%	5.00E-34	38.72	249	EHK82074 80.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	255	WP_04206 6964.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	252	MDY90321 37.1
TPA: dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	252	HBD16960 35.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	96%	5.00E-34	38.89	230	EGE78434 44.1
hypothetical protein ECZU26_29 390 [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	260	GHL32114 .1

dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	253	TJT18798. 1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	253	WP_13674 8022.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	253	EFH62968 58.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	257	MCU7719 730.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	253	WP_34707 9825.1
TPA: dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	5.00E-34	38.72	261	HAM43318 89.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	6.00E-34	38.72	259	EGE69079 64.1

dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	6.00E-34	38.72	259	WP_11968 2542.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	6.00E-34	38.72	250	WP_32365 3019.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	6.00E-34	38.72	256	MCJ86429 09.1
TPA: dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	6.00E-34	38.72	254	HDC02394 47.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	6.00E-34	38.72	260	WP_25239 1012.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli O145:H28]	Escherichi a coli O145:H28	132	132	96%	6.00E-34	38.72	264	EJH52709 77.1
dihydrolipoyl ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	94%	6.00E-34	39.13	227	ENU31179 23.1

TPA: dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	7.00E-34	38.72	265	HAP06352 11.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	96%	7.00E-34	38.72	253	WP_13680 1371.1
TPA: dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	7.00E-34	38.72	264	HAN76620 89.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	131	131	96%	7.00E-34	38.72	259	EIC173457 5.1
2- oxoglutarate dehydrogena se complex dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	7.00E-34	38.72	280	WP_32075 9799.1
dihydrolipoa mide succinyltrans ferase component (E2) [Escherichia coli]	Escherichi a coli	132	132	96%	8.00E-34	38.72	269	STG69599 .1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	8.00E-34	38.72	285	MSH88871.1
dihydrolipoamide succinyltransferase component (E2) [Escherichia coli]	Escherichia coli	132	132	96%	8.00E-34	38.72	269	VFT70387.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	8.00E-34	38.72	279	WP_247166683.1
dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	131	131	96%	8.00E-34	38.72	263	WP_047654718.1
dihydrolipoamide succinyltransferase [Escherichia coli]	Escherichia coli	131	131	96%	8.00E-34	38.72	263	OWF26202.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	8.00E-34	38.72	270	WP_250382326.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	8.00E-34	38.72	269	WP_115969540.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	8.00E-34	38.72	269	WP_249524430.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	8.00E-34	38.72	274	RIC38964.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	8.00E-34	38.72	282	MDY9040892.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	9.00E-34	38.72	275	WP_136750337.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	9.00E-34	38.72	286	WP_060643349.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	9.00E-34	38.72	286	WP_047081876.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	1.00E-33	38.72	287	EEZ2060122.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	1.00E-33	38.72	274	MDY8964183.1
dihydrolipoamide succinyltransferase [Shigella sonnei]	Shigella sonnei	132	132	96%	1.00E-33	38.72	291	CSF30971.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	134	134	96%	1.00E-33	39.15	405	MCW7185905.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	1.00E-33	38.72	292	WP_194498297.1
dihydrolipoyllysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	130	130	97%	1.00E-33	38.98	232	WP_080094185.1
dihydrolipoyllysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	130	130	97%	1.00E-33	38.98	231	WP_128277741.1
dihydrolipoyllysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Typhimurium]	Salmonella enterica subsp. enterica serovar Typhimurium	130	130	97%	1.00E-33	38.98	233	ECY4747990.1
dihydrolipoyllysine-residue succinyltransferase [Salmonella enterica]	Salmonella enterica	130	130	97%	1.00E-33	38.98	241	EEN7692697.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	1.00E-33	38.72	295	NAG00763 .1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	2.00E-33	38.72	303	EEY67846 72.1
dihydrolipoyllysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Virginia]	Salmonella enterica subsp. enterica serovar Virginia	130	130	97%	2.00E-33	38.98	237	MEA76065 79.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	2.00E-33	38.72	300	MBA18400 94.1
dihydrolipoyllysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Enteritidis]	Salmonella enterica subsp. enterica serovar Enteritidis	130	130	97%	2.00E-33	38.98	233	EIF460424 1.1

dihydrolipoyll ysine- residue succinyltrans ferase [Salmonella enterica subsp. enterica serovar Reading]	Salmonella enterica subsp. enterica serovar Reading	130	130	97%	2.00E-33	38.98	241	EDV16208 25.1
dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	129	129	91%	2.00E-33	39.56	221	EFA17846 11.1
dihydrolipoyll ysine- residue succinyltrans ferase [Salmonella enterica subsp. enterica serovar Anatum]	Salmonella enterica subsp. enterica serovar Anatum	129	129	94%	2.00E-33	38.7	226	EDV92831 31.1
2- oxoglutarate dehydrogena se complex dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	134	134	96%	2.00E-33	39.15	405	ELW73274 77.1
TPA: 2- oxoglutarate dehydrogena se complex dihydrolipoyll ysine- residue succinyltrans ferase [Escherichia coli]	Escherichi a coli	132	132	96%	2.00E-33	38.72	312	HCO07617 33.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	2.00E-33	38.72	318	MCX05063 93.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	134	134	96%	2.00E-33	38.72	405	WP_19245 9758.1
TPA: 2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	134	134	96%	2.00E-33	39.15	405	HAY04354 31.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	134	134	96%	2.00E-33	39.15	405	WP_28661 5287.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	134	134	96%	2.00E-33	39.15	405	WP_22040 5777.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	3.00E-33	38.72	322	WP_194154148.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	3.00E-33	38.72	322	MCU8601182.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	3.00E-33	38.72	321	EEY6693670.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	3.00E-33	38.72	324	EER8331471.1
2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Escherichia coli]	Escherichia coli	132	132	96%	3.00E-33	38.72	324	MDO4358214.1

2-oxoglutarate dehydrogenase complex dihydrolipoyllysine-residue succinyltransferase [Citrobacter koseri]	Citrobacter koseri	133	133	96%	3.00E-33	38.72	406	WP_200077452.1
dihydrolipoyllysine-residue succinyltransferase [Salmonella enterica subsp. enterica serovar Wilhelmsburg]	Salmonella enterica subsp. enterica serovar Wilhelmsburg	130	130	97%	3.00E-33	38.98	257	TGC90782.1
hypothetical protein SM286126_07181 [Salmonella enterica subsp. enterica serovar Typhi]	Salmonella enterica subsp. enterica serovar Typhi	130	130	97%	3.00E-33	38.98	262	AYU11211.1