

Figure S2**A****Top XerC matches in Archaea**

	length	identity	SW-score	bits
<i>P. horikoshii</i>	285	0.398	485	116
<i>P. abyssi</i>	286	0.394	481	115
<i>P. furiosus</i>	286	0.377	472	113
<i>T. kodakaraensis</i>	282	0.357	501	120
<i>M. thermoautotrophicum</i>	311	0.336	482	116

Top XerD matches in Archaea

	length	identity	SW-score	bits
<i>P. abyssi</i>	286	0.371	527	126
<i>T. kodakaraensis</i>	282	0.359	490	118
<i>P. horikoshii</i>	285	0.352	494	118
<i>M. thermoautotrophicum</i>	295	0.350	489	117
<i>P. furiosus</i>	286	0.350	484	116

B**XerA similarities among *Thermococcales***

	<i>P. abyssi</i>	<i>P. horikoshii</i>	<i>P. furiosus</i>	<i>T. kodakaraensis</i>
<i>P. abyssi</i>	100%			
<i>P. horikoshii</i>	93%	100%		
<i>P. furiosus</i>	89%	89%	100%	
<i>T. kodakaraensis</i>	85%	86%	85%	100%