

Table S2. Electrospray ionization mass spectrometric analysis of purified Ero1 β complex. Ero1 β co-purifies with PDI and both species, as well as the mixed disulfide species, are observed by mass spectrometry. Ero1 β is produced with (phospho)gluconoylation of the N-terminal His tag (Geoghegan et al, 1999), with the gluconoylated species being the major state. For clarity, the other states of the N-terminal His tag (no modification and phosphogluconoylation) are not shown. The data are indicative that 12 of the 14 Cys in Ero1 β are in a disulfide state.

NEM	Species observed	Expected mass (Da)	Experimental mass (Da)	Δmass	Explanation
-	Gluconoylated Ero1 β	51457	51444	-13Da	6 disulfides
	PDI	55425	55421	-4Da	2 disulfides
	Gluconoylated Ero1 β -PDI complex	106882	106867	-15Da	7 disulfides
+	Gluconoylated Ero1 β	51457	51569	+112Da	One NEM 6 disulfides
	Gluconoylated Ero1 β	51457	51694	+237Da	Two NEM 6 disulfides
	PDI	55425	55546	+121Da	One NEM, 2 disulfides
	PDI	55425	55670	+245Da	Two NEM, 2 disulfides