

Table S2. Comparison of secretory pathway genes regulated by enforced expression of ATF6 α (1-373) and XBP1(S) in NIH-3T3 fibroblasts

Targeting and translocation			Protein folding		
Gene symbol	ATF6 α (1-373)	XBP1(S)	Gene symbol	ATF6 α (1-373)	XBP1(S)
Signal recognition particle			Chaperones		
<i>Srp9</i>		↑	<i>Dnajb9</i>	↑	↑
<i>Srp19</i>		↑	<i>Dnajb10</i>		↑
<i>Sp54</i>		↑	<i>Dnajb11</i>	↑	↑
<i>Srp68</i>		↑	<i>Dnajc1</i>		↑
<i>Srpr</i>		↑	<i>Dnajc10</i>	↑	↑
<i>Srprb</i>		↑	<i>Fkbp1b</i>		↑
			<i>Fkbp2</i>	↑	↑
Signal sequence receptor			<i>Fkbp7</i>	↑	↑
<i>Ssr1</i>		↑	<i>Fkbp10</i>		↑
<i>Ssr2</i>		↑	<i>Fkbp11</i>	↑	↑
<i>Ssr3</i>	↑	↑	<i>Fkbp14</i>	↑	↑
<i>Ssr4</i>		↑	<i>Hspa5</i>	↑	↑
			<i>Hsp90bl</i>	↑	↑
Translocon			<i>Hyoul</i>	↑	↑
<i>Sec61a1</i>		↑	<i>Ppib</i>	↑	↑
<i>Sec61b</i>		↑	<i>Stch</i>		↑
<i>Sec61g</i>		↑			
<i>Sec63</i>	↑	↑	Disulfide bond formation		
<i>Tram1</i>		↑	<i>Ero1b</i>	↑	↑
			<i>Erp29</i>	↑	↑
Signal peptidase			<i>Pdia3</i>	↑	↑
<i>Spes2</i>		↑	<i>Pdia4</i>	↑	↑
<i>Spes3</i>		↑	<i>Pdia6</i>	↑	↑
<i>Sec11l1</i>	↑	↑	<i>Selm</i>		↑
<i>Sec11l3</i>	↑	↑	<i>Txndc4</i>	↑	↑
			<i>Txndc5</i>		↑
			<i>Txndc11</i>	↑	↑

Vesicular trafficking and transport					
Gene symbol	ATF6 α (1-373)	XBP1(S)	Gene symbol	ATF6 α (1-373)	XBP1(S)
Anterograde transport (ER→Golgi)			Retrograde transport (ER←Golgi)		
COPII vesicles			COPI vesicles		
<i>Sec23a</i>	↑	↑	<i>Arcn1</i>		↑
<i>Sec23b</i>	-	↑	<i>Arfgap3</i>	↑	↑
<i>Sec24d</i>	↑	↑	<i>Copb1</i>		↑
<i>Sec3111</i>	↑	↑	<i>Copb2</i>		↑
<i>Yipf5</i>		↑	<i>Copbe</i>		↑
<i>Yif1a</i>	↑	↑	<i>Copbg</i>	-	↑
			<i>Copbz1</i>	↑	↑
Cargo receptors			Cargo receptors		
<i>Lman1</i>		↑	<i>Kdelr2</i>	-	↑
<i>Mfd2</i>	↑	↑	<i>Kder3</i>	↑	↑
SNAREs			<i>Lman2</i>		↑
<i>Bet1</i>	-	↑	Transport/recycling in Golgi		
<i>Bet11</i>	↑	↑	<i>Blzf1</i>	↑	↑
<i>Sec22b</i>		↑	<i>Cog3</i>	-	↑
Exocytosis			<i>Cog6</i>		↑
SNAREs			<i>Gosr2</i>	-	↑
<i>Syb11</i>		↑	<i>Rab33b</i>		↑
<i>Stx5a</i>	↑	↑	<i>Vdp</i>	↑	↑
<i>Stx18</i>		↑	Exocytosis		
<i>Vamp2</i>		↑	SNAREs		
<i>Vamp4</i>	-	↑	<i>Syb11</i>		↑
Small GTPases			<i>Stx5a</i>	↑	↑
<i>Rab3a</i>	↑	↑	<i>Stx18</i>	-	↑
<i>Vdp</i>	↑	↑	<i>Vamp2</i>		↑
			<i>Vamp4</i>	-	↑
			Small GTPases		
			<i>Rab3a</i>	↑	↑

Others		
Gene symbol	ATF6 α (1-373)	XBP1(S)
ER proteins		
<i>Atp2a2</i>	↑	↑
<i>Bfar</i>		↑
<i>Creb3</i>	↑	↑
<i>Creb3l1</i>		↑
<i>Crebl1</i>		↑
<i>Dolpp1</i>		↑
<i>Eif2ak3</i>	↑	↑
<i>Ggcx</i>	↑	↑
<i>H13</i>		↑
<i>Hmox</i>	↑	↑
<i>Leprel</i>		↑
<i>Ormdl3</i>	↑	↑
<i>Rrbp1</i>	↑	↑
<i>Rcn3</i>	↑	↑
<i>Piga</i>	↑	↑
<i>Sdf2l1</i>	↑	↑
<i>Surf4</i>	↑	↑
<i>Wfs1</i>	↑	↑
Golgi proteins		
<i>Golga3</i>	↑	↑
<i>Golga4</i>		↑
<i>Golgb1</i>	↑	↑
<i>Gcc1</i>	↑	↑
<i>Golph3</i>		↑
<i>Golph3l</i>		↑
<i>Gopc</i>	↑	↑
<i>Gorasp2</i>		↑
<i>Rabac1</i>	↑	↑

N-Linked glycosylation		
Gene symbol	ATF6 α (1-373)	XBP1(S)
Core oligosaccharide synthesis		
<i>Alg2</i>		↑
<i>Alg12</i>	↑	↑
<i>Mgat2</i>		↑
Oligosaccharyltransferase		
<i>Ddost</i>	↑	↑
<i>Dad1</i>		↑
<i>Rpn1</i>	↑	↑
<i>Rpn2</i>	↑	↑
Oligosaccharide processing		
<i>Gcs1</i>		↑

ER-associated degradation		
<i>Der1l</i>	↑	↑
<i>Edem1</i>	↑	↑
<i>Herpud1</i>	↑	↑
<i>Syvn1</i>	↑	↑

Affymetrix microarray analysis revealed that genes encoding proteins that function in the secretory pathway were upregulated in ATF6 α (1-373)- and XBP1(S)-transduced NIH-3T3 fibroblasts (≥ 2 -fold as compared with empty vector controls; $P < 0.05$). These genes are grouped according to function and/or location.
blank, no change; ↑, upregulated 2-fold or higher.