

Agenda	
 Principle of Real-time PCR TaqMan[®] V.S. SYBR® Green Real-time PCR Application Reverse Transcription and Real-time PCR Reaction Assay design Predesigned Assay Search Primer Express 	
• QuantStudio [™] 1 Real-Time PCR System	
Thermo Fisher Cloud	
2	ThermoFisher SCIENTIFIC























Real-time PCR Chemis	Real-time PCR Chemistries						
	TaqMan [®] Assay	SYBR [®] Green I Dye					
Specificity	More specific	Less specific					
	Probe hybridization						
Sensitivity	Very high	Very high					
Flexibility	Multiplex PCR	No probe required					
	SNP detection	Screening tool					
	+/- application						
Optimization	Ready to use 20x primer/probe mix - no need to optimize	Need to optimize PCR program					
	Gold standard for MAQC	Need to check primer-dimer info					
	PCR efficiency 100±10%	Need to check PCR efficiency					
14		Thermo Fisher SCIENTIFIC					



絕對定量 (Absolute Quantitation) ▶主要應用於病毒量及病原菌偵測 ≻To determine the actual number of copies of a target nucleic acid within a sample with statistical 107 10⁶ 10⁵ 104 10³ 102 101 100 confidence. values Ċ 2333587334 Log copy number C_T is directly proportional to log of amount of input template Thermo Fisher 16







One-ste	p Workflow: Real-tir	ne PCR Re	eactio	ns				
	Component	Volume for one r	eaction	Notes				
4× TaqMan® Fast	Virus 1-Step Master Mix	5 µL		-				
TaqMan [®] Gene Ex	1 µL		If you are not using pre-formulated TaqMan [®] Gene Expression Assays, Applied Blosystems recommends primer concentrations of 400 to 900 nM and a probe concentration of 100 to 250 nM.					
Sample	Variable		Use as r allowed	nuch sample as needed, by the reaction volume.	up to the maximum			
RT-PCR Grade Wa	ater	Variable		Fill to the total reaction volume.				
Total volume per	reaction	20 µL		-				
		\bigcup						
		For sample volume	es ≤30 µL					
Run mode	Default [†]							
Thermal	Step	Stage	No. of	cycles	Temperature	Time		
conditions	Reverse transcription	1	1		50 °C‡	5 minutes		
	RT inactivation/initial denaturation	2	1		95 °C	20 seconds		
	Amplification	3	40	0	95 °C	3 seconds		
					60 °C	30 seconds		
 [†] Use the default run instruments). [‡] Reverse transcript 	n mode for your system and sample bloc ion works best between 48 °C and 55 °C	k module (that is, Fa	ist mode o	n Fast ins	truments and standard m	ode on standard		
20						Thermo Fisher		





Т	wo-step	Workflow:	Real	l-time P(CR	Rea	ctions	
Reve	rse Trans	cription : SuperS	cript	IV VILO K	Kit (Only	25 min)	
Sing	Action	Procedures For each RT reaction or No-RT Central reaction, program a	etalia Dul. sCNA disector	n reaction min in a RNasa-Irea				
1	Prepare gDNA digestion reaction mix lon icel	taba on ca with the following components: Component TEX soChase Buffer ecChase empire		Tal. Tal.		4 (n 10 min	Anneal primer	${\mathfrak g}$. Easily mix and incubate at $2^{j_0}{\mathbb C}$ for 10 minutes.
		Template RNA 11 pg tr 2.5 µg total RNA Nuclease-tree Water		to 10 pL	N	5 (10 min	Reverse transcribe	RNA Incubate at 50°C for 10 minutes.
2 (Jania	Digest gDNA	Earthy role and incubate at 32°C for 2 minutes. Briefly cert	ilups the reaction a	nd place on ice.	\rightarrow	6 (A	Inactivate enzym	se incubate at RSPC for 5 minutes.
3 🖉	Prepare RT and No RT Control reaction mixes (on ice)	Add the following components to the tube containing the T Component SuperScript [®] SVULP [®] Name Mac SuperScript [®] SVULP [®] Name Mac SuperScript [®] SVULP [®] Name Mac	ly), reaction mix for AT reaction 4.pl, 	n step 3 m km No BT Commi reaction 		7	qPCR amplificati	on
	2x TaqMat 20x Probe/ Water 2DNA	<u>IaqMan Chem</u> n Master Mix primer Assay Mix	1x 1x 1x	10μl 1μl NA 5 μl		2s F R W cI	a Power S Primer Primer Vater DNA	SYBR Chemistry SYBR Master Mix 1x 10μl optimized NA optimized NA NA 5 μl
	0. 1		Л	20µl				20µ1
	Standard mode PCR condition: 50°C, 2min 95 °C, 10 min 95 °C, 15 sec 60 °C, 1min 95 °C, 15 sec			Fast mode PCR condition: 95 °C, 2 min 95 °C, 5 sec 60 °C, 30 sec		les	SYBR Green: - Check Primer Concentration - Add Melt Curve Program	
22								Thermo Fisher SCIENTIFIC





















Pre-Designed TaqMan [®] Assay
ThermoFisher Search All Bearch Q O Contact Us Sign In - Quick Order S C I E N T I F I C Popular Applications & Techniques Shop All Products Services & Support About Us Connect Your Lab
Man Real-Time PC* Antbodes Olgos, Primers & Probes GeneArt Gene Synthesis Cell Culture Plastics
Search Applied Biosystems TaqMan Assays
With a production of the advance of the applications Image: Superson of the advance of the
33 ThermoFisher S CIENTIFIC

Pre-Designed	d TaqMan	® Assay –	- Gene e	expressio)n	
TaqMan Assays Gene Expression	gapdh				Q Build a search	
Filter your results						
Assay Attributes 👻	Species -	Gene GAPDH	Assay Design	• ⑦ Cro	ss Reactivity 👻 💮	
Select action	 Select product(s) 	Change dye for all	• Ch	ange size for all	▼ Sort by	•
Select Assay ID	Gene	Transcripts	Assay Design	Amplicon Length		Price
Hs02786624 Catalog number: Target species: H Important Inform	.g1 GAPDH 4331182 Juman aation ①	4 RefSeq (NM)	Both primers and probe map within a single exon	157	Dye: FAM-MGB Size: S: 250 rxns Availability: In Price (TWD): Co	iventoried ntact Us +
View Details - Related Re	eagents - Related Cont	trols - View Assay M	lap 🖛			
99 / 100 Citati Bioz Stars 0 50	ons: Erythropoletin Re ' GAPDH: Hs0271	Build 38.2 Hum 86624_	an Chr.12: Hs027866	24 <u>_0</u> 1		GAPCH
34		200 Show all RefS	6,536,000	6,536,000	¹ 6.537,000	6538000 □





Custom TaqMan [®] As	ssay Design Tool - Tac	∣Man® Gene Expressi	on Assays
Custom TaqM	an [®] Assay Design Tool	i	
Home Enter Sequences Indicate Bioinformatics Tell us which species your Sector 1 bioinformatic analysis * No bioinformatic analysis * No bioinformatic analysis * No bioinformatic analysis * No bioinformatic analysis * Or R. Ensure successed • Status * OpenImport File * Rego Id Sequences of * Enter More Bequences	Open Control Additional Products Reverse & Order IP references sequences are associated with: * [It tapians (Human) •] •] syste preference:	a in length and composed solely of the nucleotides A, C, Target Position @ X Amount A After antining sequence, Galax Unces Format Zelaza d	
38			ThermoFisher SCIENTIFIC







Seq 🖸 j	uence		aannincanoi														
•		Parameters	Primers / Prob	Des Order													
	Candi	idate Primers 8	Probes														
	#	Fwd Start	Fwd Len	Fwd Tm	Fwd %GC	Rev Start	Rev Len	Rev Tm	Rev %GC	Probe Start	Probe Le	Probe Tm	Probe %GC	Amp Tm	Amp %GC	Amp Ta	Amp Ler
	1	48	18	60	61	112	26	59	46	67	17	69	47	81	52	60	65
	2	48	18	60	61	112	26	59	46	67	18	69	44	81	52	60	65
	3	48	18	60	67	112	26	59	46	68	18	70	44	81	52	60	65
	4	48	18	60	61	112	26	59	46	70	16	69	50	81	52	60	65
	5	122	22	58	50	18/	26	59	38	145	15	68	60	/9	48	58	66
	5	0.5 0E	21	23	32	101	20	56	44	/0	13	08	33	80	43	56	67
	/	95	25	58	44	101	22	59	50	121	1/	69	53	80	49	56	b/
	8	30	20	28	44 E0	107	22	29	20	140	15	20	53	8U 20	49	08	67
	3	121	21	00	52	107	20	50	38	143	10	70	33	73	40	50	67
	11	95	20	60	12	107	20	50	50	122	10	C0	62	on	40	50	67
	12	121	20	61	42 50	197	26	59	20	144	10	90	56	79	10	59	67
	12	122	22	52	50	192	27	50 E0	41	145	15	68	60	21	40	50	67
	14	48	18	61	61	115	25	59	48	67	17	69	47	81	53	ลา	68
	15	48	18	61	61	115	25	59	48	67	18	69	44	81	53	60	68
	16	48	18	61	61	115	25	59	48	68	18	70	44	81	53	60	68
	<																>
3	Secor	ndary Structur	e 	6	n	17				Haimin Cak Die	na Cana Din						
			Uligo				Length			Haupen Ser Dimers Litos Dimers							
	€ F	orward Prin	ner				18			Most Stable Structure Found							
	OR	leverse Prin	ner				26			FGTGACGGC !	P						
	OP	robe					17				21						
		ward Primer								CIGIOCCII.							
	For	GCAGTGCTC	TGCCTTT														
	For	verse Primer															
	For CG		CATAGGTACC	AGTCA	_	_											
	For CG Rev CA	COTTOTIGT	united they														
	For CG Rev CAI	CCTTCTTGT															
	For CG Rev CAI Pro	CCTTCTTGT be	111100														

Check Tm of Primers	
Elle Edt. View Tools Window Help Image: Second Seco	
Primer Probe Test Tool. Options Primer Probe Test Tool Parameters Document Type: TagMan® MGB Quantification Parameter: Default	Browse
Primers and Probes Fwd Primer ACTGATCGATCGATCGATCGCATC Rev Primer TCGATCGATCGATCGATCGC Probe 1 Probe 2	%GC Length 58.1 50 22 Tm %GC Length 59.2 53 19 ** %GC Length 0.0 0 0 Tm %GC Length 0.0 0 0 Tm %GC Length 0.0 0 0
<u>Trim</u>	Life technologies Thermo Fisher S C LENTIFIC



Lonfigure (Rea	Justom TaqMan ^s dy-to-use plates	* Array Plate with preloade	d TaqMan 4	Assays!
	Preconfigured TaqMan Array Plates	Flexible-content TaqMan Array Plates	Custom TaqMan Array Plates	Custom formatting service
Definition	Fixed, predefined gene panels	Modifiable predefined gene panels	Configurable predesigned assays	Client-requested designs
		 Convenient 	setup	
A CONTRACTOR OF A CONTRACTOR A C		 dried TaqMa just add mas 	an Assays in a 9 ster mix and you	6- or 384-well plate; ır cDNA sample
		 Flexible for choose from TaqMan Arr 	mat a preconfigured ay Plates in fast	to customizable or standard formats
		• Easy data a	nalysis	
		Applied Bios provide rapid	systems™ analys d cloud-based d	is modules help lata interpretation
				Thermo Fis S C I E N T I F





























QuantStudio [™] Design and Analysis Software	
QuertStudio* Design & Analysis Software v1.5.1 File Edit Analysis Todin Help	
Properties Method Plate Run Results Export	
Select an Option	
New Experiment	
• Similar look and feel as online software	1
https://www.chemes.chemes.chemes.chemes.chemes.chel.l.	
 <u>nttps://www.tnermonsner.com/tw/en/home/global/forms/life-</u> science/guaptstudio software download html 	
science/ quantstudio-software-download.html	
65	Thermo Fisher

Properties	s Method	Plate	Run	Results	Export	
Experiment Propertie	15				C _b Seve	¥
Name	2019-11-15_085701			Connacto - priced		_
Barcode						
User name						
instrument type	QuantStudio** 1 System			v		
Block type	96-\Vell 0.2-mL Block			v		
Experiment type	Standard Curve			v		
Chemistry	TaqMan® Reagents			v		
Run mode	Standard			v		
	Manage chemistry details					
					Next	
No.	· · ·					
					Thermo Fish	or
66					SCIENTIFI	С





ssign Targets	and Samples						
Quick Setup	Advanced Setup					< 💿 View	~
Well Attributes						1 2	
Sample	New Sa	ample			¥	А []	
Target	New Ta	arget			•		
Well Comments	Well Co	omments				E	
Plate Attributes						/G H	
			Selec	t well and mple nam	l type nes	Wells: 🚺 0 <u>S</u> 0) N 0
			sa	mple nam	nes	Therm	io Fi

Proj	perti	es Met	thod	Plate	Ru	n Re	sults	Expor	t				
As	sigr	n Target	s and Sa	amples									
	Quic	k Setup	Advan	ced Setup						<	۲	View 🗸	
	-	Targets				+ Add		Action	*		1	2	3
		Nar	ne Re	porter G	uencher	Comments	Task	Quantity		в			
		Target	1 FAM	NF	Q-MGB		•		×	c			
										: 0			
	_	Samples				bb∆ ∓		Action	v	F			
		Gamples	Samul	o Namo		Com	nonts	Action		6	$\widetilde{\mathbf{O}}$		
		Sam	nole 1	e name		Com	incinto		×	F			
			ipre i						~	1	Wells: U	0 S 0 N	0
70											S	hermo F	isher

Define ar	nd Set Up Stand	ards	
roperties Method	Plate Run Results	Export	
ssign Targets and	d Samples		Action V 📭 Save
Quick Setup A	dvanced Setup	< s View v	Select Sample
Well Attributes	New Sample	v 1 2 3 4 5	6 7 8 Share Vor The Form
Target	New Target		
Well Comments	Well Comments	E C C C C	
Plate Attributes		G O O O O	
		Wells: 🚺 0 <u>5</u> 0 🔣 0	96 Empt
Previous			Next
			Thorms Fish
			S C I E N T I F I



Run Control						
272121 Run Starte Amplification Plot Pr	9100363 d at:02-25-2020 14:05:29 ist-Run Summary	CST Run Comp	leted at:15:00:30 CS	T		
Post-Run Summary						
Experiment Name:	2020-02-25_140623				Start Time:	02-25-2020 14:05:29 CST
Stop Time:	02-25-2020 15:00:30 CST				Run Duration:	55 minutes 1 seconds
Jser Name:	DEFAULT				Instrument Name:	2721219100363
irmware Version:	1.0.1				Software Version:	QuantStudio [®] Design & Analysis Software v1.5.1
nstrument Serial Number:	2721219100363				Sample Volume:	20.0
Cover Temperature:	105.0				Instrument Type:	QuantStudiio" 1 System
Block Type:	96-Well 0.2-mL Block				Note:	N/A
Errors Encountered:						
						ThermoFist









Properties M	Method	Plate	Run	Results	Export		
Export						Auto Export Ex	port □ _š Save ∨
Name of export file	Enter export filena	ime here		Content	Data E	Raw Data	
rile Type	QuantStudio		v	Results		Melt Curve Raw Data	
File Edit Analysis	Tools Holn		۷	Reagent Inform	mation		
New Experiment	100is Tielp	QuantStudio Design	& Ar Browse	Customize	Customize what is e	xported within each item abo	ve
Open Close	Ctrl	+ O hen complete		Options Ounify the above	re content items into o	ne file	
Save Save As Save As Locked Temp	Ctrl	+S		 Spin the above 	e content items into int	nyrouai mes	
Convert Experiment to	Template						
Import Plate Setup							
Send To PowerPoint							
Print							
Print Report							
Exit							
80							Thermo Fisher SCIENTIFIC





Thermo Fisher Cloud: Dashboar	d		
The front page of Thermo Fisher			
SCIENTIFIC Search All Search	Q 🕑 Contac	t Us Sign In - Quick	Drder 📜
https://apps.thermofisher.com/app	ps/spa/#/dashbo	oard	
E Home Powerd I	y Thermo Fisher Cloud 🔕		■ 6 °° ≛ ~
Create projects, upload files, recentor your instituments, see available apps			🚓 Upload files 🛛 🔐 Create 🖉 🗠 Q
Quick access to Files, Applications, and Instruments Welcome to your dashboard, Nai-Chen What do you want to do?	Connect an instrument	Ny Appa All Apps ion Reporter ions ions ions ions ions ions ions ions	Anage Profile witch to Region set Notifications
Upload files and create new projects 83	Check the status of connected instruments	Nest-generation Conf Sarger	Thermo Fisher
83			

The	ermo Fishe	r Cloud: Files			
=	DataConnect		Powered by Thermo Fisher Cloud 😞		🗮 🚱 M 📥 V
	Manage and share your files and proje	cts		Create a group Previous versions & Down	Mew folder
	Recently Modified	File Name	File Type	Run Date	Modified Date 🗸
	Personal Files	PCR_w_Melt_SYBR_Select_MMx_10uL.eds	EDS		27/Sept/2017 09:22:45 AM
	PS used 1.7 MB of 100 GB Get more storage				No.
84					ThermoFisher SCIENTIFIC



Analysis modules				
appliedbiosystems 20170927 053 @	Powered by Thermo Fisher Cloud 🔕			@ & ~
Manage Data Files				
HRM Files in the project		Import from local	Import from Thermo Fisher Cloud	Actions ···
SC	Instrument	Size	Run Date	
Select analysis module SC: Standard curve RQ: Relative Quntification				
(H)				1 - 1 of 1 items
. ∧ The	ermo Fisher Scientific Brand @ 2016 All Rights Reserved.			SEND FEEDBACK
86			Ther s c i	moFisher ENTIFIC







Review target	Analysis Export						Cq S	lettings Re-analyz	e Cq Actio	nalyze ns v
	Plot: Amplification ~	Gr	oup By:	— Nor	10	v Sho	w Flag Details			
10 I argets	Amplification		Well ~		Omit ~	CT	CT (Post IC)	Ϋ́ Eq. Cτ	Amp Status	-
Display	Multicomponent	1	C24			Undetermined	Undetermined	Undetermined	NOAMP	0
	Standard curve	2	C24			Undetermined	Undetermined	Undetermined	NOAMP	0
1		3	G7			19.369	19.369	19.369	AMP	1
		4	G6			19.292	19.292	19.292	AMP	1
		5	G7			19.168	19.168	19.168	AMP	1
0.1 0.071	٠	6	G5			19.131	19.131	19.131	AMP	1
		7	E7			21.106	21.106	21.106	AMP	1
10-2		8	E5			21.025	21.025	21.025	AMP	1
		9	G6			19.131	19.131	19.131	AMP	1
		10	C7			17.514	17.514	17.514	AMP	1
	26 28 30 32 34 36 38 40	11	E6			21.098	21.098	21.098	AMP	1
Cycle Brain Heart Lung	Liver			4					SEND F	¥ EEDBACK

G	ene E	xpress	ion	Plot	ts in A	naly	ysis S	ecti	on							
RQ Pl 3 24 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Overview F lot	nate Setup Data R	teview Al	Biogroups d	port	RQ Ple Box pl Correl Heat M Volcar	ots ots ation Ple Map no Plots	ots						Cota	Ut Analysis Group DC Vie Plot Type Graph Type Craph Type Show Error B No Label Value Label	 Setting C Analysis Setting C Analysis Adversive Adversive Adversive Setting C and analysis Setting C and analysis Setting C analysis Sett
05 0 45 -1	81.57	_		- 1	Hor			I	±	-					Sample Labe X.Zoom To 100 Y Avis Max Result Detail Cq Space Quant Space	a 1961 (7894) (8894) (2894)
	bain			Heat	0			E Long				E Des		5		
< _					-				_		_		_			•
Results Det	ails jusing equivalent Cr	values where the original Cr val	ues are projected to	e 100% tanget efficie	ncy) YClear filler											
* Target	[▼] Sample	* Biological Group	∀ Мах Ст	Y Cr Mean	Y Adjusted Cr Mean	T CT SE	[™] ∆Cr Mean	^Ψ ΔCT SE	▼ F-Factor	^Ψ ΔΔCτ	Ψ ΔΔCτ - Fσ	Ψ ΔΔCτ + Fσ	Ÿ RQ	[▼] RQ Min	T RQ Max	
ACTB	Brain		40.000	17.265	17.265	0.038										
ACTB	Heart		40.000	18.136	18.136	0.054										
ACTB	Liver		40.000	19.202	19.202	0.045										
ACIB	Lung		40.000	18.254	18,254	0.055										SEND FEEDBAC
91															Ther scie	NTIFIC

Export Image: Ender export filemant Nere: Ender export filemant Must name file first File yee: Image: Image: Intere: Ender export filemant Image: Verticated in: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: </th <th>Image: Ender orgont filestame Must name file first File regont filestame Introduct Risk Introduct Risk File regont drows Reaux Introduct Risk Introduct Risk Verduct Risk Baselen Introduct Risk Introduct Risk Verduct Risk Baselen Introduct Risk Introduct Risk Introduct Risk Verduct Risk Baselen Interview Paget Sample Reaux Interview Interview</th> <th>Customize your export Image: Source Sour</th>	Image: Ender orgont filestame Must name file first File regont filestame Introduct Risk Introduct Risk File regont drows Reaux Introduct Risk Introduct Risk Verduct Risk Baselen Introduct Risk Introduct Risk Verduct Risk Baselen Introduct Risk Introduct Risk Introduct Risk Verduct Risk Baselen Interview Paget Sample Reaux Interview	Customize your export Image: Source Sour
Instead Description Filt syst Image: Series Results Series Results	Immini	Image: Ender opport filterarm Must name file first File year Image: Image
Fartyse: Instantion Comments: Instantion Instantion Instantion Instantin Insta	Fail year Instant or c.svr formats Netadd R: Starsja Rauda <li< th=""><th>Fartyre: Image: Curver of the set of the s</th></li<>	Fartyre: Image: Curver of the set of the s
Courses: Lxt or .csv formats Include in: Steps Rest Steps Rest	Converse: Instantion Instantion Instantinstantion Insterior	Currents: Ixt or .csv formats Indud ri
Included in : Starpic Results Starpic	Individual in: Stanging Group Results	Induction in: Stanger Group Reacts Image: Stanger Reacts Image: Stanger Reacts
Bongia Brauti Songia Francis Songia S	Stomize your export	Customize your export
Parties Results Weit Results Weit Results Overview Parties Results Overview Parties Results Overview Parties Results Overview Overview Parties Overview Overview Overview Parties Overview Overview Parties Overview Parties Parties Second	Stomize your export Overview Pate Setup Data Review Analysis Export Stomize	Customize your export Converse Pairs Statu Data Review Analysis Eport Converse Pairs Statu Converse Analysis Eport Converse Pairs Statu Converse Converse </th
V Wit RestAS () Boom A Vision Poda C Vision Poda Target Saryle Rack () Nov Restar Controls Target Saryle Rack () Nov Restar Controls Restar Controls Re	With Results Based A registration Dials Export Bill O'coare Pic Data Export Bill Togoti Sergio Files OF Export Bill Togoti Sergio Files OF Export Bill Stomize your export Export Bills	With Results Baser A registration Data
Angletano Data Compare Plance Compare	Export Export <th>Anythetation Data Export Base Exercise Integration Data Integrater Integration Data Integrati</th>	Anythetation Data Export Base Exercise Integration Data Integrater Integration Data Integrati
Under Perd Data Begraph France 1 Begraph France 1 Marries A (1) Stars Factorial (1) Stars Factoria (1) Stars Factorial (1) Stars <th< th=""><th>Under Place Data Except Name 1 Excep</th><th>Customize your export Figure france Figure france</th></th<>	Under Place Data Except Name 1 Excep	Customize your export Figure france
Independencies of Several (1999 Several (1999 Several (1999 Several (1999 Several (1999 Several (1999)	Improvember dial of the state A1 low provide the	Customize your export Same A (1990) (Customize for the sector of the secto
Construction D05,314 A2 Userand Burn A Charanta, C Statular D05,314 A3 Userand Burn A V More D05,314 D05,314 A3 Userand Burn A V More D05,314 D05,314 A11 Userand Burn A V Topic Name D05,314 D05,314 A11 Userand Burn A V Topic Name D05,314 D05,314 A11 Userand Burn A	Stomize your export Parent time Comparison Parent time Comparison Parent time Comparison A2 United Parent A78 Stomize Your export Comparison Comparison A3 United Parent A78 Stomize Your export Comparison Comparison A1 United Parent Origo Stomize Your export Parent Comparison Compa	Customize your export Enemesting (Comparing C) (Comparing C)
W Brende DDS_3N+ WL_Comparing_C A.3 Detected Ban A.1 V Bringto Organ Iran DDS_3N+ WL_Comparing_C A.11 Detected Dos 0 V Bringto Organ Iran DDS_3N+ WL_Comparing_C A.11 Detected Dos 0 V Bringto Organ Iran DDS_3N+ WL_Comparing_C DDS Detected Ban 0	M Branch (M) (M) (M) (M) (M) (M) (M) (M) (M) (M)	Customize your export Image State 052,01 (Mig.Comparing.cl.) A3 Umand Ban AC19 Customize your export State 052,01 (Mig.Comparing.cl.) A1 Umand Ban AC19 Customize your export State 052,01 (Mig.Comparing.cl.) A1 Umand Ban AC19 V Image State State 052,01 (Mig.Comparing.cl.) A1 Umande Ban AC19 V Image State State 052,01 (Mig.Comparing.cl.) C5 Umande Ban AC19 V Tation State 052,01 (Mig.Comparing.cl.) C5 Umande Her 0.040 V Tation Virg.Comparing.cl. C5 Umande Her 1.010 V Tation Virg.Comparing.cl. C5 Umande Lug 1.010 V Tation Virg.Comparing.cl. C5 E14 Tated Lug UPC
V Biospire Once Turne 055_354 A11 Ubbend Bion 0 V Straptic Turne 055_354 005_354 0 Ubbend 0 V Target Turne 055_354 005_354 0 Ubbend 0	Stomize your export Mark bit with with with with with with with wi	Customize your export Image of the set of the se
Comparison C	stomize your export Image Summary Comparison 050,000 050,000 0400 0400 Image Summary Comparison 050,000 050,000 050,000 0400 0400 Image Summary Comparison 050,000 050,000 050,000 0400 0400 0400 Image Summary Comparison 050,000 050,000 050,000 050,000 0400 0400	Customize your export Sense have and and an and and an and and and an and and and and and and and and and and and and and and and
WeijCorpersitive_Ct	stomize your export Twin Twin Comparing C. C5 Union Here Union Comparing C. C5 Union C C5 Unio C C5 Union C C5	Customize your export Task Task Cost Cost Cost Her UNIX © Task © Statk © Statk C Statk C Statk C Statk UNIX UNIX © Cost © Cost © Cost © Cost E Statk C Statk UNIX UNIX © Cost © Cost © Cost © Cost E Statk E Statk UNIX UNIX
Q50,384	Stomize your export Val_Companie 0. CTB United Heat Unit (2Amp State Companie 0. EH Tested Unit Unit	Customize your export Image: Arry State Mail: Comparing C. C13 Desired Heat UPINT If Any State Integrating C. C13 Desired Heat UPINT If Any State Integrating C. E14 Tweed Long UPINT If Any Efficient Mail: Comparing C. E19 Trend Long UPIC
Customize your export	V Ampistaus Usig_394 E14 Treated Lung UPIN1	W Are status UDU_UH EH Tweed Long UPUT W Opposition QL EH Tweed Long UPUT W Opposition QL Toget Efficiency DDS_TH E19 Tweed Long UPC
V Any status G20,264 aV Viet_Comparison_C1 E14 Treated Lung U	Cq Conf Pre_comparative_co	Target Efficiency 052,94 UK2, Comparison, CC. E19 Treated Lung LIPC
V Trept Efficiency 015,184 UV Comparison, CL. E19 Treated Lung LL	Target Efficiency 1920-2014 EI9 Treated Lung UPC	
✓ Cr Cr Cr Cr		Cr 058,384 E24 No Serve 041
	Criffent (D) Wei Companie C E24 No Semple 0H1	CELEVAL CONVERTING CELEVAL
✓ Eq. Cr	Image: Constraint of the	(∀) of the two in the Descendence of the Descenden
Cr 000,004 E24 No Sande 0	The second state of the se	Co. 055,344 E24 No Sample 041
Teget Efficiency GS5_364 Weil_Comparative_CL E19 Treated Lung U	v Target Efficiency Val Concentration Cr. E19 Treated Lung UPC	
	Cq.Corf 000,394 E19 Tweed Lung UPC	Weil_Comparative_Ct
	Co Conf Hellowing Contraction	Zaget Efficiency 026,204 E19 Treated Ling LIPC Wei, Comparison, C
	THE COMPANY OF	GC C0 C07
V Arp Statu C5, 594 E14 Treated Line U	- Wall Comparison Ct	V Co Conf Mic Companity (D Mic Companity (D <t< td=""></t<>
Customize your export	We concerning Ct. E14 Treated Lung UPINT	Construint_Comparing_C EM Tweed Log UPIN ✓ Opport DDS_MIL DDS_MIL E19 Tweed Log UPIN ✓ Trapet Efformy DDS_MIL DDS_MIL E19 Tweed Log UPIN
Customize your export	US2_384 US2_384 E14 Treated Lung LPIN1	(✓) Area Status ODS_314 E.H Taxael Lung UP311 (✓) Togat Blockery MS_COMPARING_C E.H Taxael Lung UP311 (✓) Togat Blockery MS_COMPARING_C E.19 Taxael Lung UP32
Customize your export	Via Comparison C E14 Treated Lung UPIN1	Operation Operating Constraints EH Tended Long UPIN Image Efform Operating Constraints Operating Constraints E19 Tended Long LPC
	With the second	Constraint Opport Opport EM Travel Log UN1 V C Cost Mag.Companing.C EM Travel Log UN1 V Travel filterray Opp.V.L. E19 Travel Log UN2
Customize your export	US2_384 US2_384 E14 Treated Lung LPIN1	(√) Area Status ODS_314 E.H Taxael Long UP31 (√) Argut Blockery Argut Blockery Argut Blockery DS_314 E.H Taxael Long UP31 (√) Taget Blockery Argut Blockery DS_314 E.9 Taxael Long UP3
Customize your export	Amp Datus 055,264 W Amp Datus 055,264 DEVENDENTIA D	Image: Construction OPS_March E14 Tenind Ling Units Image: Construction Image: Construction OPS_March E19 Tenind Ling
Customize vour export - Cis Unested Heat U	Contract	Controlline form capetr mm, company. mm, com, com, company. mm, com, com, company
Charter million worker and City University Heat	Ang Sone Yell, Comparing CL One	Custoninize your export Image: Comparing CL. Up Up Up Image: Comparing CL. Up Up Up Image: Comparing CL. EN Trained Up
Q50 294	Stomize your export Rest Unit Unit Unit Unit Unit Unit Unit Uni	Customize your export Image: Comparing 0 C15 Ummed Heat Uhit Image: Comparing 0 Image: Comparing 0 C15 Ummed Heat Uhit Image: Comparing 0 Image: Comparing 0 C15 Ummed Heat Uhit Image: Comparing 0 Image: Comparing 0 E14 Tenned Long UPC
	Stomize your export View State	Customize your export Image: Customize your export Cost Cost United Part UPART Image: Customize your export Image: Customize your export Cost
C Task	stomize your export → May State May S	Customize your export The first 000 Min 010 Unsure Heat Unit © two firsts © two firsts 000 Min 000 Min 000 Min 010 Unsure Unit © two firsts © two firsts 000 Min 000 Min 000 Min Unit Unit © top firsts 000 Min 000 Min 000 Min 000 Min Unit Unit
Wel_Comparative_CL Voi of the set of the	stomize your export Stomize your export	Customize your export Customize your export Custom
Wel_Comparative_CL.	stomize your export Stomize your export	Customize your export Customize your export Custom
Wel_Comparative_CL.	stomize your export	Customize your export Image: State of the state
Val_Comparative_Ct C6 Untreaded Heart 0	Stomize your export Image: Name Stage: Stomize your export Stomiz	Customize your export Tage time Sug Comparing Co. C5 Utward And Add/04 V Tage time Social Science C5 Utward Heat UPon V Tage time Social Science C5 Utward Heat UPon V Tage time Social Science C5 Utward Heat UPon V Tage time Social Science C5 E14 Taged Urg V Tage time Social Science C5 E19 Tennel Log UPC
Tappt Name 05,394 Wei Companying Ci C5 Untested Heart 0	Stomize your export Traje faire Traje fai	Customize your export Togetham ODS_MA OS Unexed Heric 0.400H V Tay Task Value Task OS Unexed Heric 0.400H V Task Task Task OS Unexed Heric 0.400H V Task Task Task OS Unexed Heric 0.400H V Task Task OS Unexed Heric 0.400H V Task Value OS Unexed Heric 0.400H V Task Value OS Unexed Heric 0.400H V Task Value Value Value 0.400H Value 0.400H Value Value Value Value Value 0.400H Value 0.400H
Campe Name Campe Name Campa Nam Campa Name Campa Name Campa Name Campa Name Ca	stomize your export To dawn live To the	Customize your export Same have The fill of the fi
Comparison (C) Compari	stomize your export	Customize your export Image time Image timage timage time Image time Image time </td
If Brouged Draw Brave D05_M ar A11 Unmered Draw 0 If Draw Brave Image: Draw Brave D05_M ar A11 Unmered Draw 0 If Tray Brave D05_M ar D05_M ar <td>Stomize your export Tange frame (* appendixed) Stoppendixed (* appendixed) A11 United (* appendixed) Out Stomize your export * Tank (* app frame) * Tank (* app frame) * Tank (* app frame) * C5 United (* appendixed) * C6 * C6 United (* appendixed) * C6 * C6<!--</td--><td>Customize your export Building to the time of the</td></td>	Stomize your export Tange frame (* appendixed) Stoppendixed (* appendixed) A11 United (* appendixed) Out Stomize your export * Tank (* app frame) * Tank (* app frame) * Tank (* app frame) * C5 United (* appendixed) * C6 * C6 United (* appendixed) * C6 * C6 </td <td>Customize your export Building to the time of the</td>	Customize your export Building to the time of the
Vote Vote Vote Vote Vote Vote Vo	stomize your export	Customize your export Image design Imag
♥ We Marginal Grana Name Marginal Grana Name Arr Unterest Binity of Grana Name Arr ♥ Reinginal Grana Name ♥ Stage Name Grana Name Arr Unterest Binity of Grana Name Binity of Grana Name Arr Unterest Binity of Grana Name Binity of Grana Name Arr Unterest Binity of Grana Name Binity of Grana Name Binity of Grana Name Arr Unterest Binity of Grana Name Binity of Grana Nam Binity of Grana Name	Stomize your export Vertex Max Consumance. Arr Utered Bank Arr Stomize your export Tests Stomize or Constraint or Const	One Owner Marcine Comparison (C) Arr Other and Basis Arr Customize your export Status
Image: Second	Stomize your export Stom 202,34 A3 Unservice A278 Stomize your export Stomy frame Stomy frame Stomy frame Stomy frame A3 Unservice Stomy frame Stomy frame <td< td=""><td>Customize your export Image from the set of the</td></td<>	Customize your export Image from the set of the
C Brande OSS_MA A3 United Brain A C Build Order Street Build Order Street DSS_MA A11 United Brain A C Build Order Street DSS_MA DSS_MA A11 United Brain A C Target Street DSS_MA DSS_MA A11 United Brain A C Target Street DSS_MA DSS_MA A11 United Brain A D Target Street DSS_MA DSS_MA DSS_MA A11 United Brain A	Image: Strength of Strengt of Strengt of Strength of Strength of Strength of Strength of St	Customize your export Image: Comparison of the second of the
Ima: Distance Dist. Dis. Dist. Dist. <t< td=""><td>Stomize your export Total Mark <t< td=""><td>Customize your export Image of many film Imag</td></t<></td></t<>	Stomize your export Total Mark Total Mark <t< td=""><td>Customize your export Image of many film Imag</td></t<>	Customize your export Image of many film Imag
Operative Tune Data (Decide) A2 Decide A0 V Operative Tune 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364 000,364	Comment Name A3 Unstead Bann A78 W Comment Name Max Comment Acc. A3 Unstead Bann A78 W Comment Acc. A3 Unstead Bann A78 Unstead Bann A78 W Comment Acc. A3 Unstead Bann A78 Unstead Bann A78 W Comment Acc. A3 Unstead Bann A78 Unstead Bann A78 W Comment Acc. Bann A1 Unstead Bann A61 A61 W Comment Acc. Bann A1 Unstead Bann A61 W Comment Acc. Bann Bann Bann A61 Bann A61 W Comment Acc. Bann Bann Bann Bann Bann A61 W Comment Acc. Bann Bann Bann Bann Bann A61 W Comment Acc. Bann Bann Bann Bann Bann Bann W Any State	Construction Sources Nume A2 United Ban A2 United Ban A2 V Systematic V Syste
If Exerciser time D05,84 mitComparture A2 Unmard Bain A If annuh D05,84 mitComparture A3 Unmard Bain A If annuh D05,84 mitComparture A3 Unmard Bain A If annuh D05,84 mitComparture A3 Unmard Bain A If annuh D05,84 mitComparture A1 Unmard Bain A If annuh D05,84 mitComparture A11 Unmard Bain A If annuh D05,84 mitComparture A11 Unmard Bain A If annuh D05,84 mitComparture A11 Unmard Bain A If annuh D05,84 mit D05,84 mit C5 Unmard Bain A	Stomize your export Stopstart time St	Customize your export Pagement tume (Remain Comparing Q) 052.84 (Remain (Remaining Q) A2 Unmedia Ban A718 Customize your export Similar (Remaining Q) Main Usered (Remaining Q) Main Usered (Remaining Q) Ban A718 Customize your export Similar (Remaining Q) Main Usered (Remaining Q) Main Usered (Remaining Q) Ban A718 Customize your export Similar (Remaining Q) Main Usered (Remaining Q) Main Usered (
Steel Codemits ODS_MA A2 Unstant Ban A V Encode Version ODS_MA A3 Unstant Ban A V Encode Version ODS_MA A3 Unstant Ban A V Encode Version ODS_MA A1 Unstant Ban A V Encode Version ODS_MA A1 Unstant Ban A V Toget Have ODS_MA ODS_MA A1 Unstant Ban A V Toget Have ODS_MA ODS_MA A1 Unstant Heart A	Stom Calculation Openand Name Openand Name A2 Universet Brain A2/19 Image: Comparent Name Image: Comparent Name Openand Name Openand Name A3 Universet Brain A2/19 Image: Comparent Name Openand Name Openand Name Openand Name A3 Universet Brain A1/19 Image: Comparent Name Openand Name <	Seed Coderis Seed Coderis<
Seed Contents Display France Display France <thdisplay france<="" th=""> Display F</thdisplay>	Set Control DSL_3ML (Control Tune) DSL_3ML (Control Tune) A2 Urensed Ban A7B Standa Standa DSL_3ML (Control Tune) A3 Urensed Ban A7B Standa Standa DSL_3ML (Control Tune) A3 Urensed Ban A7B Standa Standa DSL_3ML (Control Tune) A3 Urensed Ban A7B Standa Standa A3 Urensed Ban A7B Standa Standa DSL_3ML (Control Tune) A3 Urensed Ban A7B Standa Standa DSL_3ML (Control Tune) A3 Urensed Ban A7B Standa Standa Standa Standa Ban A7B Ban A7B Standa Standa Standa Standa Ban A7B Ban A7B Standa Standa Standa Ban A7B Ban A7B Standa Standa Ban Standa Ban <	Seed Contents Seed Con
Select Contents Exception Status Balance Ven X Balance Select Contents Select Content Select Content Sele	Storight control Story	Sted Control Sted Control<
Foundation Second 1 how Sec	Stomize your export Stant Al low Fourient Rev (Signame frame) Fourient Rev (Signame fr	Customize your export Sect 41 (100) Function Fun
Topp/StrapsPiles 00 /r Samt. /l (1900 Fear Control Excode Mod. Biological Gross. Samt. /r Topp/StrapsPiles 00 /r Samt.	Toppt/Sergis/Price Ori Search All Nove Sector Controls In Sector Control Controls In Sector Control Controls In Sector Control Control In Sector Control In Sector Contre In Sector Control In Sector Control In Sector Control	Customize your export Sect. /1 (htm Exprime Ram Rescole Heid Comment Employee Ram Comment <th< th=""></th<>
TagetSamplePlaceOr Semic A1 (Nov Semic Contents Functional Mathematic Description Fun	TaperSample/Factor 00 Non-KA 11 Nove Non-KA 12 Nove Non-KA 12 Nove Taper Kame Taper Kame </th <th>Customize your export Fundamentation Fundamentation</th>	Customize your export Fundamentation
Experie Name Experie Name<	Engent Number 1 Fund frame Fu	Expendence / Expenden
Underson Pland Data Bengran Plands 1 High Result I High Result High Result I Hig	Under Product Expert France Expert F	Under Piel das Begraf Hands 1 Hadi Rault Target Sampe Hauss 1 Hadi Rault Bend Al 1 fore
Underson Piels Carlas Bergrame Financia Total Example Financia Total Example Financia Bergrame Financia	Orders Per Data Regret Reveal Tetraff Serget Reveal Tetraff Serget Reveal Tetraff Serget Reveal Reveal Notes A Biological Groups Reveal	Orace Petrod Call Regret Result Interface Regret Result Interface Result Result <thr< td=""></thr<>
Option Piec Data Expose Financia 1: Exception Reads 1: Exceptin Reads 1: Exception Reads 1: Exception Reads 1: Exception Read	Image: Service Piez Data Figure Revise 1 Sample Revise 1 S	Orders Pia Data Function Pia Data Function Pia Data Function Pia Data TraperServicePia Data TraperServicePia Data Function Pia
Exception Exception <t< th=""><th>Comparison Export End <</th><th>Customize your export Export</th></t<>	Comparison Export End <	Customize your export
Angefication Date Votem P Rob Date Toget/Sample Prote OCP Seques Produe 1 Serget France 1 <u>Other Serget France</u> Toget/Sample Prote OCP Seques Produe 1 <u>Serget France</u> Toget/Sample Prote OCP Seques France 1 <u>Other Serget France</u> Serget France Serget Serget Serget Serget Serget Serget Serge	Export Export<	Customize your export
Export Export <th>Export Export Export<</th> <th>Customize your export Export Image Result Image Result Export Image Result Export Image Result Image Result<!--</th--></th>	Export Export<	Customize your export Export Image Result Image Result Export Image Result Export Image Result Image Result </th
With Realth Bookman Amplification Data Export Image: Series Files and Series Files Files and Series Files Files and Series Files and S	Voter Part Control Stomize your export	Customize your export Export End family Customize (or port export) End family
Wei Reutin Booking Creative Plake Setup Data Review Analysis Export Image of the setup Application Data Araphration Data Export Image of the setup Image of the se	Wat Results Book Converse Pauls Statup Data Results Analysis Export Export Exerct Analysis Viscone Pac Data Target Sampa Price or Pauls Target Sampa Price or Pauls Stormize your export Target Sampa Price Target Sampa Price or Pauls Target Sampa Price or Pauls Target Sampa Price or Pauls Export Itaria Export Itaria Export Itaria Export Price or Pauls Export Pauls Exp	Customize your export Mark Base Counter Fast Ship Cash Review Addyins Eport Export Ex
Export Export <td>Export Main Description <th< td=""><td>Customize your export Market Market</td></th<></td>	Export Main Description Main Description <th< td=""><td>Customize your export Market Market</td></th<>	Customize your export Market
Image: Sample Result Image: Sample Result <td>Image: Service Partice Service Partice Service Analysis Export Image: Service Partice Service Service Analysis Export Image: Service Partice Service Image: Service Partice Service Service Image: Service Partice Service Service</td> <td>Customize your export Customize former Customize form</td>	Image: Service Partice Service Partice Service Analysis Export Image: Service Partice Service Service Analysis Export Image: Service Partice Service Image: Service Partice Service Service Image: Service Partice Service	Customize your export Customize former Customize form
Image: Sample Reacts Convolver Plade Setup Data Review Analysis Export Image: Setup Image: Setup Export Image: Setup Image: Setup </td <td>Stomize your export Image: Series Image: S</td> <td>Customize your export Bit Overview Pata Setto Data Review Analysis Eport End to the setto Data Review Analysis End to the setto Data Review Analysis Eport End to the setto Data Review Analysis End to the setto Data Review Analysis Eport End to the sett</td>	Stomize your export Image: Series Image: S	Customize your export Bit Overview Pata Setto Data Review Analysis Eport End to the setto Data Review Analysis End to the setto Data Review Analysis Eport End to the setto Data Review Analysis End to the setto Data Review Analysis Eport End to the sett
Bengual Onde Reult Sergio Reult Overview Num State Control Target/Sergio/Parts 0.5 Target/Sergio/Parts 0.5 Sergio Reult 1	Stomize your export	Customize your export Mage Share Ma
Pladogad Group Results Surgio Results View R	Stomize your export Stomize	Customize your export
Iredided in:	Model N: Starging Reads Converse Paids Salag Case of the salag Converse Case of the salag Case of t	Customize your export Busged may Reuse Customize for an intervent of an intervent
Included in 1	Stomize your export	Image: Customize your export
Included I: Biological drose Result Sample Result<td>Moduled H: Stopper Results Stopper Results Stopper Results Voide Results Diagonal drouge Results Compared Results Diagonal drouge Results Stoppin Results Diagonal drouge Results Traget Serger Results Diagonal drouge Results Stoppin Results Diagonal drouge Results Traget Serger Results Diagonal drouge Results Traget Serger Results Diagonal drouge Results Traget Serger Results Diagonal drouge Results <td>Include II: Balageal Group React: Simple React: Wirk React: Wirk React: Wirk React: Wirk React: Simple React: <lis< td=""></lis<></td></td>	Moduled H: Stopper Results Stopper Results Stopper Results Voide Results Diagonal drouge Results Compared Results Diagonal drouge Results Stoppin Results Diagonal drouge Results Traget Serger Results Diagonal drouge Results Stoppin Results Diagonal drouge Results Traget Serger Results Diagonal drouge Results Traget Serger Results Diagonal drouge Results Traget Serger Results Diagonal drouge Results <td>Include II: Balageal Group React: Simple React: Wirk React: Wirk React: Wirk React: Wirk React: Simple React: <lis< td=""></lis<></td>	Include II: Balageal Group React: Simple React: Wirk React: Wirk React: Wirk React: Wirk React: Simple React: <lis< td=""></lis<>
	NetWork Excel Cut X-S Y KOTHINKS Indudd II: • Baspiel Graph Reads • Well	Customize your export Image lower is any intervention of the second of
Commers: Ltt or .csv formats roused in: Subject of the service servi	Converses: Itst for .csv formats Vocadel in: Basigned drave Reads Stomize your export Service Reads	Currents:
Converses LXL OF .CSV formats bedude it Bedigae Once Reads Bedigae Once Reads Bed	Converse: Instantion Lxt or .csv formats Instant of the serve frame Serve frame Serve frame Serve frame Serve frame Serve frame V tios of the frame Serve frame Serve frame V tios of the frame Serve frame Serve frame V tios of the frame Serve frame Serve frame V tios of the frame Serve frame Serve frame Stormize your export Serve frame Serve frame Serve frame	Converse Lxt or .csv formats Include R
Conners: Included in Included in Image: Barging Results Stanging Results Image: Barging Results With Results Image: Barging Results With Results Image: Barging Results Image: Barging Results Image: Barging Results Image:	Converses Institute Institute	Converse I.xt or .csv formats induded i:
First tyse: Institute of the second of the periods	Far year Instruments Converses: Instruments Violated H1: Instruments Stomize your export Instruments	Firstysi Ltt or .csv formats Include in
Pie type:	Fail year I.xt or .csv formats Unuded n: Stangel dama Reads Stangel dama Dass Stangel dama I and I an	Fire type: I.xt or .csv formats Indiate in:
Field para Included if: Stangen Results With Result () Book With Result () Bo	Flarger Instant Converter Except of case Resets Sterges Resets	Firstys: I.xt or .csv formats roundel n:





On-Line Support Center



