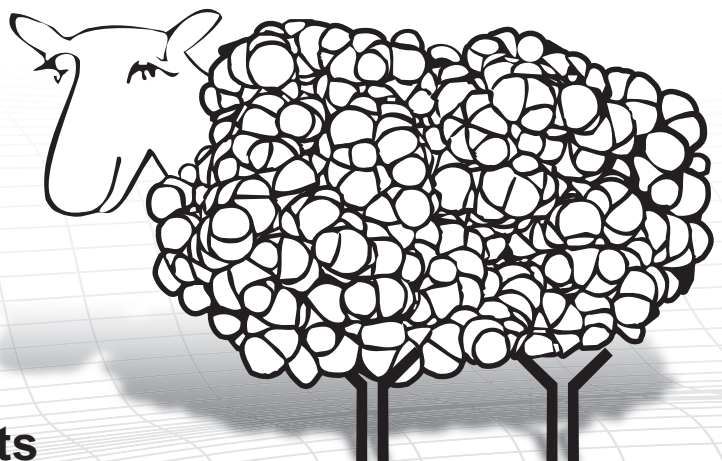


# Assay kits

- Apoptosis
- Cell Viability
- Cell damage
- DNA damage
- Metabolism
- Oxidative stress



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# Welcome to Abcam

## About Abcam



Abcam, with offices in Cambridge, U.K., Cambridge, MA, U.S.A., Tokyo, Japan and Hong Kong was founded in 1998 by Dr. Jonathan Milner, then a researcher at Cambridge University, U.K.

“Like many life science researchers, I was frustrated by the time it took to locate and select antibodies essential for my research. This was largely due to poor information and out-of-date catalogs from the vast range of suppliers who were spread across many countries. In some cases, I also experienced difficulties with companies whose products were unreliable and whose customer service was slow and unhelpful. My vision was to build a company that offered reliable cutting-edge products and great customer service.”

It was a tough vision - Abcam was created to sell the best antibodies in the world with the most comprehensive, honest and up-to-date datasheets, fast delivery, helpful customer service and comprehensive technical support. Abcam also offers an ever expanding portfolio of assay kits.

Several years on and with thousands of products across our range, Abcam ships to scientists in over 75 countries around the world. Abcam is committed to the following fundamental principles that have seen us become the first choice for thousands of life scientists throughout industry and academia:

- Quality of products and datasheets
- Helpful technical support and online technical resources
- Friendly customer service
- Fast delivery

## Comprehensive

We have a policy of honesty - our customers know everything that we know about our products, as soon as we know it. Everything we know about each product is posted on the datasheet. To achieve exceptional levels of quality for our customers we provide:

- Comprehensive datasheets
- Customers' Abreviews® of our products
- Product-specific protocols used by our customers
- Customers' technical questions and our answers for each product
- Product information and new products updated daily

## Helpful

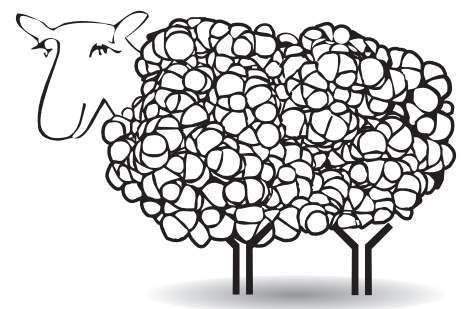
Our Scientific Support and Customer Service departments are full of scientists that have many years of experience working with the types of products that we supply to our customers.

We provide continuous order progress updates, so that you always know what is happening with your order and when you should expect to receive it.

The screenshot shows the Abcam website homepage. At the top, there is a navigation bar with links for Home, Product catalog, Scientific support, Resources, Events, and About. A search bar is prominently displayed with the text "Product search: [e.g. protein name, catalog number...]" and a "Search" button. Below the search bar, there are several sections: "Welcome to Abcam" with a tagline "The largest catalog of the best antibodies in the world", a "Product search" section with a search bar and a "Search" button, and a "Quick order" section with a form to enter an Abcam catalog number and an "Add to basket" button. There are also sections for "Announcement" (Abcam acquires MitoSciences), "Metabolism Assay Kits", and "Secondary Antibody Advanced Search Tool". At the bottom, there is a footer with "Terms | Privacy policy | Legal | Feedback" and "© 1998-2011 Abcam plc. All rights reserved."

# Abbreviations

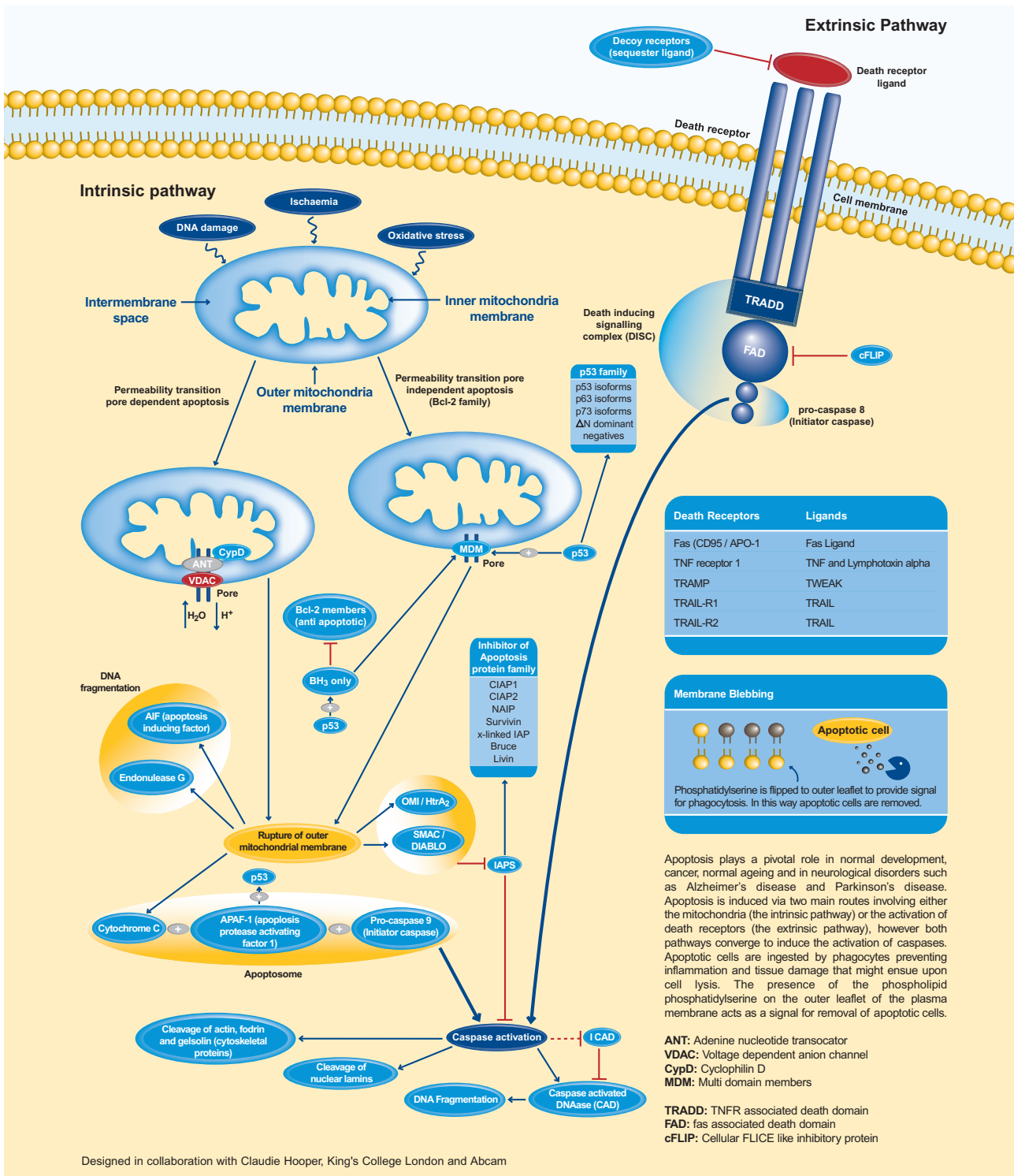
Key	Applications	Key	Applications
<b>A</b>	Absorbance/plate reader	<b>GR</b>	Glutathione reductase
<b>ADP</b>	Adenosine diphosphate	<b>GSH</b>	Glutathione reduced state
<b>AG</b>	Agarose gel	<b>GSSG</b>	Glutathione oxidized state
<b>ALP</b>	Alkaline phosphatase	<b>H</b>	Histochemistry
<b>ATP</b>	Adenosine triphosphate	<b>h</b>	Hour
<b>B</b>	Beta counter	<b>HB</b>	Beta Hydroxybutyrate
<b>BrdU</b>	Bromodeoxyuridine	<b>HDL</b>	High density lipoproteins
<b>C</b>	Colorimetric	<b>JNK</b>	c-Jun N-terminal kinase
<b>cAMP</b>	cyclic Adenosine monophosphate	<b>L</b>	Luminometer
<b>cGMP</b>	cyclic Adenosine monophosphate	<b>LDH</b>	Lactate dehydrogenase
<b>CETP</b>	Cholesterylester transfer protein	<b>LDL</b>	Low density lipoprotein
<b>Cy3</b>	Cyanine 3	<b>min</b>	Minute
<b>Cy5</b>	Cyanine 5	<b>MW</b>	Molecular weight
<b>CARD</b>	Caspase recruitment domain	<b>NAD</b>	Nicotinamide adenine dinucleotide
<b>DED</b>	Death-effector domain	<b>NADPH</b>	Nicotinamide adenine dinucleotide phosphate
<b>DMSO</b>	Dimethyl sulfoxide	<b>NO</b>	Nitric oxide
<b>ECL</b>	Enhanced chemiluminescence	<b>OD</b>	Optical density
<b>EGFP</b>	Enhanced Green Fluorescent Protein	<b>PE</b>	Phycoerythrin
<b>ELISA</b>	Enzyme-linked immunosorbent assay	<b>PK</b>	Pyruvate kinase
<b>F</b>	Fluorimetric	<b>RFU</b>	Relative fluorescence units
<b>FITC</b>	Fluorescein Isothiocyanate	<b>ROS</b>	Reactive oxygen species
<b>Flow Cyt</b>	Flow Cytometry	<b>TC</b>	Tissue culture
<b>FM</b>	Fluorescence Microscopy	<b>VLDP</b>	Very low density protein
<b>GFR</b>	Glomerular filtration rate	<b>WB</b>	Western blot



Scientific support: [www.abcam.com/technical](http://www.abcam.com/technical)  
 Assay kit resources: [www.abcam.com/assaykits](http://www.abcam.com/assaykits)

# Apoptosis

Apoptosis is a highly organized process of cell death which is essential to ensure normal development and homeostasis of all multi-cellular organisms. It counterbalances cell proliferation and differentiation pathways and removes excess and unwanted cells.



Why not download our apoptosis card at [www.abcam.com/Apoptosis-pathway-card](http://www.abcam.com/Apoptosis-pathway-card)

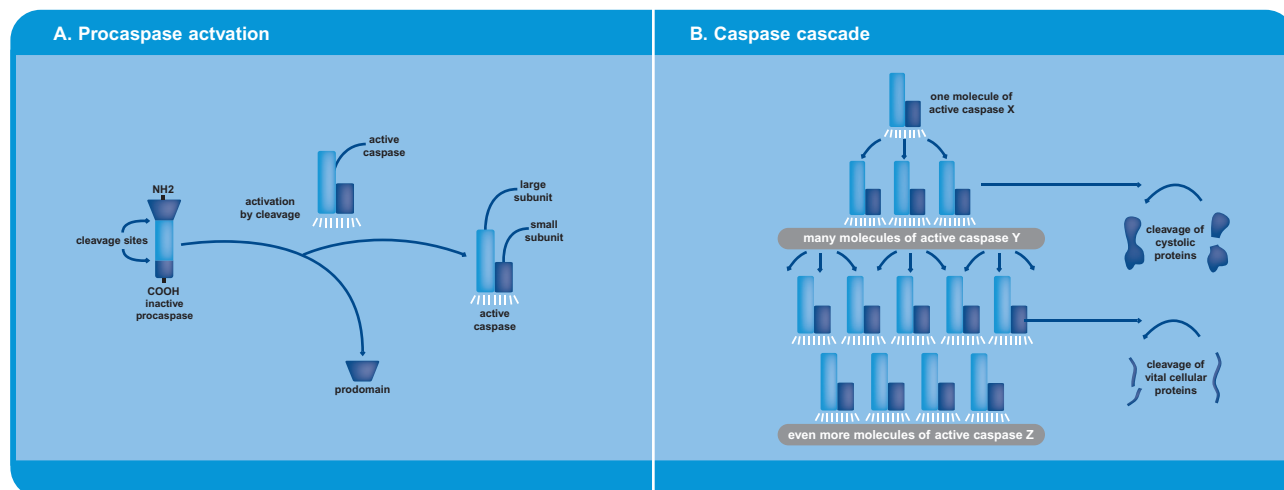
## Annexin V binding assays

A universal phenomenon of cell apoptosis is the loss of the **cell membrane's phospholipid asymmetry**, which results in the exposure of **phosphatidylserine (PS)** on the cell membrane surface. PS, which also serves as a recognition signal for phagocytes, is bound by annexin V proteins in a calcium dependent manner. As apoptotic cells become annexin V "positive" at an early stage in apoptosis, – just after nuclear condensation has started, - it is possible to quantify apoptotic cells by staining with fluorochrome conjugated annexin V. To distinguish viable, apoptotic and necrotic cells **propidium iodide (PI)** or **SYTOX green dye staining** can be performed. Our annexin V binding assays can be used in Flow Cytometry or fluorescence microscopy and use a simple one-step 10 min staining procedure.

Product name	Conjugation	Size	Datasheet www.abcam.com/...
Annexin V-Biotin Apoptosis Detection	Biotin	100 tests	ab14190
Annexin V-Biotin Apoptosis Detection Reagent	Biotin	200 tests	ab14165
Annexin V-Cy3 Apoptosis Detection	Cy3	100 tests	ab14142
Annexin V-Cy3 Apoptosis Detection Kit with SYTOX	Cy3	100 tests	ab14144
Annexin V-Cy3 Apoptosis Detection Reagent	Cy3	200 tests	ab14143
Annexin V-Cy5 Apoptosis Detection	Cy5	100 tests	ab14150
Annexin V-Cy5 Apoptosis Detection Reagent	Cy5	200 tests	ab14147
Annexin V-EGFP Apoptosis Detection	EGFP	100 tests	ab14153
Annexin V-EGFP Apoptosis Detection Reagent	EGFP	200 tests	ab14152
Annexin V-FITC Apoptosis Detection	FITC	100 tests	ab14085
Annexin V-FITC Apoptosis Detection Kit with SYTOX	FITC	100 tests	ab14086
Annexin V-FITC Apoptosis Detection Reagent 5X	FITC	200 tests	ab14082
Annexin V-PE Apoptosis Detection	PE	100 tests	ab14155
Annexin V-PE Apoptosis Detection Kit With SYTOX	PE	100 tests	ab39674
Annexin V-PE Apoptosis Detection Reagent	PE	200 tests	ab14154
Annexin V-PE-Cy5 Apoptosis Detection	PE-Cy5	100 tests	ab14159
Annexin V-PE-Cy5 Apoptosis Detection Reagent	PE-Cy5	200 tests	ab14158
Annexin V Unlabeled Apoptosis Reagent	Unlabeled	50 µg	ab14193
Annexin V Binding Buffer 1X	-	100 ml	ab32599
Annexin V Binding Buffer 10X	-	50 ml	ab14084
Propidium Iodide	-	1 ml	ab14083

## Caspases

The caspase family of highly conserved cysteine-proteases is essential for apoptosis. Initially synthesized as inactive pro-caspases, caspases become rapidly proteolytically cleaved and subsequently activated by granzymes, death receptors and apoptosome stimuli. Generally caspases can be divided into two categories: **initiator caspases** containing CARD and DED domains (these include caspase-1, caspase-2, caspase-4, caspase-5, caspase-8, caspase-9, caspase-10, caspase-11 and caspase-12) and **effector caspases** (these are caspase-3, caspase-6 and caspase-7). Abcam offers colorimetric/fluorometric assay kits to measure individual caspase activity and kits to quantify multiple caspase activities simultaneously. Also available are caspase inhibitor drug screening kits that allow an effective way for screening caspase inhibitors.



Why not download our apoptosis card at [www.abcam.com/apoptosis-pathway-card](http://www.abcam.com/apoptosis-pathway-card)

## Caspase assay kits

Product name	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Caspase 1	F	1-2 hs	100	ab39412
Caspase 1	C	1-2 hs	100	ab39470
Caspase 1 Inhibitor Drug Detection	F	1-1.5 hs	100	ab102489
Caspase 2	F	1-2 hs	100	ab39794
Caspase 2	C	1-2 hs	100	ab39830
Fluorescein Active Caspase 2 Staining	Flow Cyt/FM/A	1-2 hs	100	ab65612
Caspase 2 Inhibitor Drug Detection	F	1-1.5 hs	100	ab102490
Caspase 3	F	1-2 hs	100	ab39383
Caspase 3	C	1-2 hs	100	ab39401
Fluorescein Active Caspase 3 Staining	Flow Cyt/FM/A	1-2 hs	100	ab65613
Red Active Caspase 3 Staining	Flow Cyt/FM/A	1-2 hs	100	ab65617
Caspase 3 Inhibitor Drug Detection	F	1-1.5 hs	100	ab102491
Caspase 4	F	1-2 hs	100	ab65658
Caspase 4	C	1-2 hs	100	ab65659
Caspase 4 Inhibitor Drug Detection	F	1-1.5 hs	100	ab102492
Caspase 5	F	1-2 hs	100	ab65660
Caspase 5	C	1-2 hs	100	ab65661
Caspase 5 Inhibitor Drug Detection	F	1-1.5 hs	100	ab102493
Caspase 6	F	1-2 hs	100	ab39707
Caspase 6	C	1-2 hs	100	ab39709
Caspase 6 Inhibitor Drug Detection	F	1-1.5 hs	100	ab102494
Caspase 7 Inhibitor Drug Detection	F	1-1.5 hs	100	ab102495
Caspase 8	F	1-2 hs	100	ab39534
Caspase 8	C	1-2 hs	100	ab39700
Fluorescein Active Caspase 8 Staining	Flow Cyt/FM/A	1-2 hs	100	ab65614
Red Active Caspase 8 Staining	Flow Cyt/FM/A	1-2 hs	100	ab65618
Caspase 8 Inhibitor Drug Detection	F	1-1.5 hs	100	ab102496
Caspase 9	F	1-2 hs	100	ab65607
Caspase 9	C	1-2 hs	100	ab65608
Fluorescein Active Caspase 9 Staining	Flow Cyt/FM/A	1-2 hs	100	ab65615
Red Active Caspase 9 Staining	Flow Cyt/FM/A	1-2 hs	100	ab65619
Caspase 9 Inhibitor Drug Detection	F	1-1.5 hs	100	ab102497
Caspase 10	F	1-2 hs	100	ab65662
Caspase 10	C	1-2 hs	100	ab65663
Caspase 10 Inhibitor Drug Detection	F	1-1.5 hs	100	ab102498
Fluorescein Caspase 12 Staining	Flow Cyt/FM/A	1-2 hs	100	ab65609
Fluorescein Caspase 12 Staining	Flow Cyt/FM/A	1-2 hs	25	ab65610
Caspase 12	F	1-2 hs	100	ab65664
Caspase Family Substrate	F	-	7x25	ab102481
Caspase Family Substrate	C	-	7x25	ab102482
Caspase Family Substrate Kit II	C	-	9x25	ab102484
Caspase Family Substrate Kit II	F	-	9x25	ab102483
Caspase Family Substrate Kit Plus	F	-	7x25	ab102485
Caspase Family Substrate Kit Plus	C	-	7x25	ab102486
Caspase Family Substrate Kit II Plus	F	-	9x25	ab102487
Caspase Family Substrate Kit II Plus	C	-	9x25	ab102488
Flow Cytometric Apoptosis Detection	Flow Cyt	30 min	100	ab102499
Fluorescein Caspase Staining	Flow Cyt/FM/A	1-2 hs	100	ab65611
Red Active Caspase Staining	Flow Cyt/FM/A	1-2 hs	100	ab65616

## Calpain assay kit

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Calpain Activity	Lysates	F	2 hs	100	ab65308

Customer Service Tel: Europe +44-(0)1223-696000 | Hong Kong (852)-3793-3454  
Japan +81-(0)-3-6805-8450 | U.S.A. 1-617-225-2272 (Toll free: 1-888-77-ABCAM)



## Cathepsin assay kits

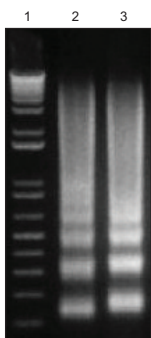
Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Cathepsin B Activity	Lysates	F	1-2 hs	100	ab65300
Cathepsin D Activity	Lysates	F	1-2 hs	100	ab65302
Cathepsin K Activity	Lysates	F	1-2 hs	100	ab65303
Cathepsin H Activity	Lysates	F	1-2 hs	100	ab65305
Cathepsin L Activity	Lysates	F	1-2 hs	100	ab65306
Cathepsin S Activity	Lysates	F	1-2 hs	100	ab65307

## DNA Ladder and Fragmentation Assays

As a consequence of cells entering apoptosis, endonucleases are activated which cleave chromatin into fragments of around 200 base pairs. These so called “**ladders**” can be visualized by agarose gel electrophoresis. Alternatively, DNA fragmentation and especially the presence of DNA nicks can be shown by **terminal deoxynucleotidyl transferase (TUNEL)** assays.

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Apoptotic DNA Ladder Isolation	Apoptotic cells and tissue	-	2-4 hs	50	ab65627
Apoptotic DNA Ladder Detection	Apoptotic cells	AG	1.5 hs	50	ab66090
Direct In situ DNA Fragmentation (TUNEL assay)	Cell culture + paraffin embedded tissue	Flow Cyt, FM	1 h	50	ab66108
High Sensitivity Apoptotic DNA Ladder Detection	DNA from apoptotic tissue	AG	1.5 hs	50	ab66093
Red Fluorescence in situ BrdU DNA Fragmentation (TUNEL assay)	Fixed cells and tissue sections	Flow Cyt	3 hs	60	ab66110

### Apoptotic DNA ladder isolation kit (ab65627)



DNA ladders were extracted from  $2 \times 10^6$  Jurkat cells treated with  $2 \mu\text{M}$  camptothecin. The kit selectively extracts DNA ladders without isolating any intact genomic DNA.

**Lane 1:** 1 kb DNA ladder

**Lane 2:** 6 hour camptothecin treated cell sample

**Lane 3:** 12 hour camptothecin treated cell sample

## Other apoptosis kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Apoptotic Cell Isolation	Cell cultures	-	1 h	30 isolations	ab65782
Apoptosis Inducer (Ready-to-use)	ActionomycinD, Camptothecin, Cycloheximide, Dexamethasone, Etoposide	-	-	-	ab102480
Camptothecin	-	-	-	1 ml	ab39758
Cytochrome c Releasing Apoptosis	Lysates	WB	3 hs	100 tests	ab65311

**Scientific support:** [www.abcam.com/technical](http://www.abcam.com/technical)  
**Assay kit resources:** [www.abcam.com/assaykits](http://www.abcam.com/assaykits)



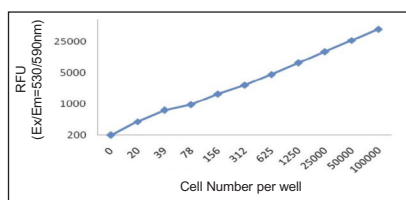
## Other apoptosis kits (continued)

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Mitochondrial Transmembrane Potential Apoptosis Detection	Live cells	Flow Cyt, FM	30 min	25 tests	ab65309
Mitochondrial Transmembrane Potential Apoptosis Detection	Live cells	Flow Cyt, FM	30 min	100 tests	ab65310
Propidium Iodide	-	-	-	1 ml	ab14083
Trypsin Activity	TC supernatants, urine, plasma, serum	A	1-2 hs	100	ab102531

## Cell viability, proliferation and senescence assay kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
ADP	Lysates, urine, plasma, serum	A/C/F	1 h	100 tests	ab83359
ADP/ATP Ratio	Lysates, urine, plasma, serum	L/B	-	100 tests	ab65313
ATP	Lysates, culture medium, urine, plasma, serum	A/C/F	1 h	200 µl	ab83355
ATP Probe (in DMSO)	-	-	-	200 tests	ab104281
Cell Viability	Lysates, urine, plasma, serum	L/B	30 min	200 tests	ab65314
Cell Proliferation	Cell culture	F	-	500 tests	ab102501
Histone Acetyltransferase Activity	Lysates	C	-	100 tests	ab65352
Lactate Dehydrogenase	Cell/tissue culture supernatant, urine, plasma, serum	A	30 min	500 tests	ab102526
LDH-Cytotoxicity	Cell culture	A	1 h	400 tests	ab65391
LDH-Cytotoxicity Assay Kit II	Cell culture	A	1 h	500 tests	ab65393
Live-Dead Cell Staining	Cell culture	FM	20 min	100 tests	ab65470
Quick Cell Proliferation	Cell culture	A	4 hs	2500 tests	ab65472
Quick Cell Proliferation	Cell culture	A	4 hs	500 tests	ab65473
Quick Cell Proliferation Assay Kit II	Cell culture	A	4 hs	2500 tests	ab65474
Quick Cell Proliferation Assay Kit II	Cell culture	A	4 hs	500 tests	ab65475
Senescence Detection	Cell culture and tissue	H	30 min	250 tests	ab65351

### Cell proliferation fluorescence assay kit (ab102501)



The Abcam cell proliferation fluorescence assay kit is by far the **most sensitive** and easiest way to quantify cell proliferation and viability. It utilizes the redox dye resazurin which upon reduction by viable metabolically active cells becomes highly fluorescent.

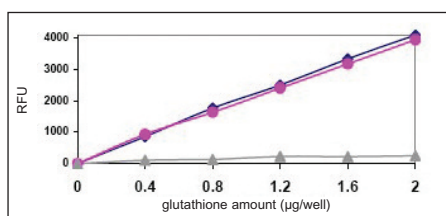
## DNA damage and cell cycle arrest assay kits

Product name	Sample type	Detection	Size (tests)	Datasheet www.abcam.com/...
Apoptosis Inducer (Ready-to-use)	ActionomycinD, Camptothecin, Cycloheximide, Dexamethasone, Etoposide	-	-	ab102480
Camptothecin	-	-	1 ml	ab39758
DNA Damage	Purified damaged DNA	C	25 tests	ab65353
Propidium Iodide	-	-	1ml	ab14083

## Glutathione assay kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Glutathione Detection	Lysates, urine, plasma, serum	F	2 hs	100	ab65322
Glutathione Peroxidase	TC, urine, plasma, serum	A	30-40 min	100	ab102530
Glutathione Reductase (GR)	TC, urine, plasma, serum	A	40 min	200	ab83461
GSH, GSSG and Total Glutathione Detection	TC, urine, plasma, serum	F	1-2 hs	100	ab65324
GST Activity	TC, urine, plasma, serum	F	1-2 hs	100	ab65325
GST Activity	TC, urine, plasma, serum	C/A	1-1.5 hs	100	ab65326

### GSH, GSSG and total glutathione detection kit (ab65324)



The kit contains an OPA (o-phthalaldehyde) probe, which reacts only with GSH (not GSSG) to generate fluorescence. This allows the specific quantification of GSH. When adding the reducing agent mix however GSSG becomes converted to GSH, so that both GSH + GSSG levels can be determined. To measure GSSG specifically, a GSH quencher is included, which removes GSH and hence prevents a reaction with OPA (while GSSG is unaffected). The reducing agent is then added to destroy the excess quencher and to convert GSSG to GSH – enabling the specific determination of GSSG levels.

- ◆ = GSH standard curve
- = GSSG standard curve (generated by adding both quencher and reducing agent mix)
- ▲ = GSSG standard without adding reducing agent mix

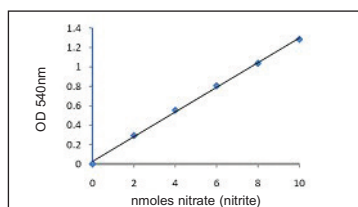
## Cellular damage and DNA damage

Each day, every cell of our body encounters thousands of damages. These can either be caused by exogenous factors such as physical damage, UV light and ionizing radiation or by endogenous factors that are often a result of lipid peroxidation and oxidative stress. The later does not only play a role in aging but also in various neurodegenerative diseases such as Parkinson's and Alzheimer's. In addition to kits measuring **nitric oxide (NO)** and **reactive oxygen species (ROS)** levels, we offer assay kits to determine the **antioxidant activities** of catalase, superoxide dismutase and glutathione peroxidase.

### Cell damage kits

Product name	Sample type	Detection	Assay time	Size (tests)	Datasheet www.abcam.com/...
Aconitase	TC supernatants, urine, plasma, serum	A	40 min	100	ab83459
ADP	Lysates, culture medium, urine, plasma, serum	A/C/F	1 h	100	ab83359
ADP/ATP Ratio	Lysates, culture medium, urine, plasma, serum	L/B	-	200	ab65313
ATP	Lysates, culture medium, urine, plasma, serum	A/C/F	1 h	100	ab83355
ATP Probe (in DMSO)	-	-	-	200 µl	ab104281
Ascorbic Acid	TC supernatants, urine, plasma, serum	A	40 min	100	ab65346
Ascorbic Acid (Biological Samples)	TC supernatants, urine, plasma, serum	A	10 min	100	ab65656
cAMP Direct Immunoassay	TC lysates, urine, plasma, serum	A	-	100	ab65355
cGMP Direct Immunoassay	TC lysates, urine, plasma, serum	A	-	100	ab65356
Catalase	TC supernatants, urine, plasma, serum	A/F	30-40 min	100	ab83464
Ethanol	TC supernatants, urine, plasma, serum	A/F	1 hs	100	ab65343
Glutathione Detection	Lysates, urine, plasma, serum	F	2 hs	100	ab65322
Glutathione Peroxidase	TC, urine, plasma, serum	A	30-40 min	100	ab102530
Glutathione Reductase (GR)	TC, urine, plasma, serum	A	40 min	200	ab83461
Glutamate	TC supernatants, urine, plasma, serum	A	40 min	100	ab83389
GSH, GSSG and Total Glutathione Detection	TC, urine, plasma, serum	F	1-2 hs	100	ab65324
GST Activity	TC, urine, plasma, serum	F	1-2 hs	100	ab6532
GST Activity	TC, urine, plasma, serum	C/A	1-1.5 hs	100	ab65326
Hydrogen Peroxide	TC, plasma, serum, urine	A/F	1hs	200	ab102500
Iron	TC lysates, plasma and serum, urine	A	1 hs	100	ab83366
Malate	TC supernatants, urine, plasma, serum	A	1 h	100	ab83391

#### Nitric oxide colorimetric assay kit (ab65328)



This assay allows in an easy two-step process to measure total **nitrate/nitrite levels**. The first step converts nitrate to nitrite utilizing nitrate reductase. The second step uses Griess Reagent to convert nitrite to a deep purple azo compound.

## Cell damage kits (continued)

Product name	Sample type	Detection	Assay time	Size (tests)	Datasheet www.abcam.com/...
NAD/NADH	TC lysates, urine, plasma, serum	A	2 hs	100	ab65348
NADP/NADPH	TC lysates, urine, plasma, serum	A	2 hs	100	ab65349
Nitric Oxide	TC lysates, urine, plasma, serum	F	2-3 hs	200	ab65327
Nitric Oxide	TC lysates, urine, plasma, serum	A	1-1.5 hs	200	ab65328
Superoxide Dismutase Activity	TC lysates, urine, plasma, serum	A	30 min	100	ab65354
Thioredoxin (TrxR) Reductase	TC supernatants, urine, plasma and serum	A	30-40 min	100	ab83463
Total Antioxidant Capacity	TC lysates, urine, plasma, serum	A	2 hs	100	ab65329
Uric Acid	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65344
Xanthine Oxidase	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab102522

## Cell viability, proliferation and senescence assay kits

Product name	Sample type	Detection	Assay time	Size (tests)	Datasheet www.abcam.com/...
ADP	Lysates, culture medium, urine, plasma, serum	A/C/F	1 h	100	ab83359
ADP/ATP Ratio	Lysates, culture medium, urine, plasma, serum	L/B		100	ab65313
ATP	Lysates, culture medium, urine, plasma, serum	A/C/F	1 h	100	ab83355
ATP Probe (in DMSO)	-	-	-	200 µl	ab104281
Cell Viability	Lysates, urine, plasma, serum	L/B	30 min	200	ab65314
Cell Proliferation	Cell culture	F	-	500	ab102501
Histone Acetyltransferase Activity	Lysates	C	-	100	ab65352
Lactate Dehydrogenase	Cell/tissue culture supernatant, urine, plasma, serum	A	30 min	500	ab102526
LDH-Cytotoxicity	Cell culture	A	1 h	400	ab65391
LDH-Cytotoxicity Assay Kit II	Cell culture	A	1 h	500	ab65393
Live-Dead Cell Staining	Cell culture	FM	20 min	100	ab65470
Quick Cell Proliferation	Cell culture	A	4 hs	2500	ab65472
Quick Cell Proliferation	Cell culture	A	4 hs	500	ab65473
Quick Cell Proliferation Assay Kit II	Cell culture	A	4 hs	2500	ab65474
Quick Cell Proliferation Assay Kit II	Cell culture	A	4 hs	500	ab65475
Senescence Detection	Cell culture and tissue	H	30 min	250	ab65351

## DNA damage and cell cycle arrest assay kits

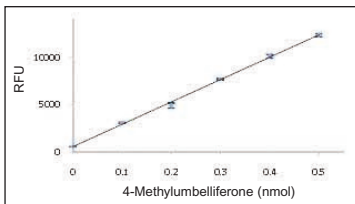
Product name	Sample type	Detection	Size	Datasheet www.abcam.com/...
Camptothecin	-	-	1 ml	ab39758
DNA Damage	Purified damaged DNA	C	25 tests	ab65353
Propidium Iodide	-	-	1 ml	ab14083

# Cell signaling

In order to develop, survive and reproduce, organisms need to be able to respond quickly to micro-environmental changes. This is ensured by a complex cell-cell communication system, also referred to as **cell signaling**. The system allows cells to communicate with each other by direct contact (juxtacrine signaling) or over short (paracrine signaling) and large distances (endocrine signalling). As a lot of cell signaling is mediated by the addition and removal of phosphate groups we offer a variety of kits to determine both **kinase** and **phosphatase activities**.

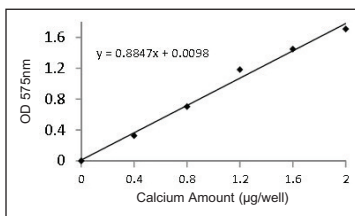
Product name	Sample type	Detection	Assay time	Size (tests)	Datasheet www.abcam.com/...
Acid Phosphatase	Lysates, urine, plasma, serum	A	-	500	ab83367
Acid Phosphatase	Lysates, urine, plasma, serum	F	1 h	500	ab83370
ADP	Lysates, culture medium, urine, plasma, serum	A/C/F	1 h	100	ab83359
ADP/ATP Ratio	Lysates, culture medium, urine, plasma, serum	L/B	-	200	ab65313
ATP	Lysates, culture medium, urine, plasma, serum	A/C/F	1 h	100	ab83355
ATP Probe (in DMSO)	-	-	-	200 µl	ab104281
AKT Activity	Lysates	WB	-	40	ab65786
Alkaline Phosphatase	Lysates, urine, plasma, serum	A	-	500	ab83369
Alkaline Phosphatase	Lysates, urine, plasma, serum	F	1 h	500	ab83371
Alkaline Phosphatase Enzyme Solution	-	-	-	10 tablets	ab107816
Ammonia	Lysates, culture medium, urine, plasma, serum	A	1 h	100	ab83360
Ammonia (Modified Berthelot Assay)	Lysates, culture medium, urine, plasma, serum	A	30 min	100	ab102509
Beta Secretase Activity	Lysates, culture medium, urine, plasma, serum	F	1 h	100	ab65357
Calcium Detection	Lysates, culture medium, urine, plasma, serum	A	20 min	250	ab102505
cAMP Direct Immunoassay	Lysates, urine, plasma, serum	A	-	100	ab65355
cGMP Direct Immunoassay	Lysates, urine, plasma, serum	A	-	100	ab65356

## Alkaline phosphatase fluorometric assay kit (ab83371)



Alkaline phosphatase (ALP) catalyzes the hydrolysis of phosphate esters and produces an organic radical and inorganic phosphate. Changes in alkaline phosphatase level and activity are associated with **various disease states in the liver and bone**. The ALP kit uses 4-methylumbelliferyl phosphate disodium salt (MUP) as an ALP substrate, which when ALP cleaved results in an intense fluorescent signal.

## Calcium colorimetric assay kit (ab102505)

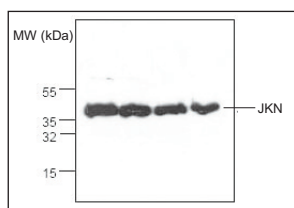


The Abcam calcium colorimetric assay kit utilizes the chromogenic complex ( $\lambda = 575$  nm) formed between calcium ions and o-cresolphthalein to easily determine calcium concentrations in the range of 0.4-100 mg/dL (0.1-25 mM).

## Cell Signaling (continued)

Product name	Sample type	Detection	Assay time	Size (tests)	Datasheet www.abcam.com/...
Chloride	TC supernatants, urine, plasma, serum	A	20 min	100	ab83372
Cobalt Quantification	TC supernatants, urine, plasma, serum	A	20 min	100	ab102510
Ethanol	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab65343
Glutamate Dehydrogenase Detection	TC supernatants, urine, plasma, serum	A	-	100	ab102527
Hemin	TC supernatants, urine, plasma, serum	A	30 min	100	ab65332
Histone Acetyltransferase Activity	Lysates	A	-	100	ab65352
Iron	TC lysates, plasma and serum, urine	A	1 h	100	ab83366
JNK Activity Screening	Lysates	WB	-	40	ab65784
JNK Activity	Lysates	Wb	-	40	ab65785
Magnesium Detection	Lysates, culture medium, urine, plasma, serum	A	30 min	100	ab102506
Nitric Oxide	Lysates, urine, plasma, serum	F	2-3 hs	200	ab65327
Nitric Oxide	Lysates, urine, plasma, serum	A	1-1.5 hs	200	ab65328
Phosphate	Lysates, urine, plasma, serum	A	30 min	500	ab65622
Phosphate	Lysates, urine, plasma, serum	F	2 hs	500	ab102508
Pyruvate Kinase (PK)	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab83432
Zinc Quantification	Lysates, culture medium, urine, plasma, serum	A	15 min	100	ab102507

### JNK activity assay kit (ab65785)



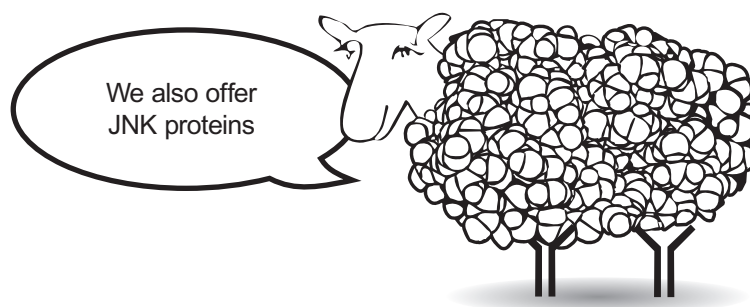
Western blot analysis of phospho c-Jun levels in Jurkat cells lysates using the JNK activity assay kit (ab65785).

Lane 1 = 400  $\mu$ g

Lane 2 = 200  $\mu$ g

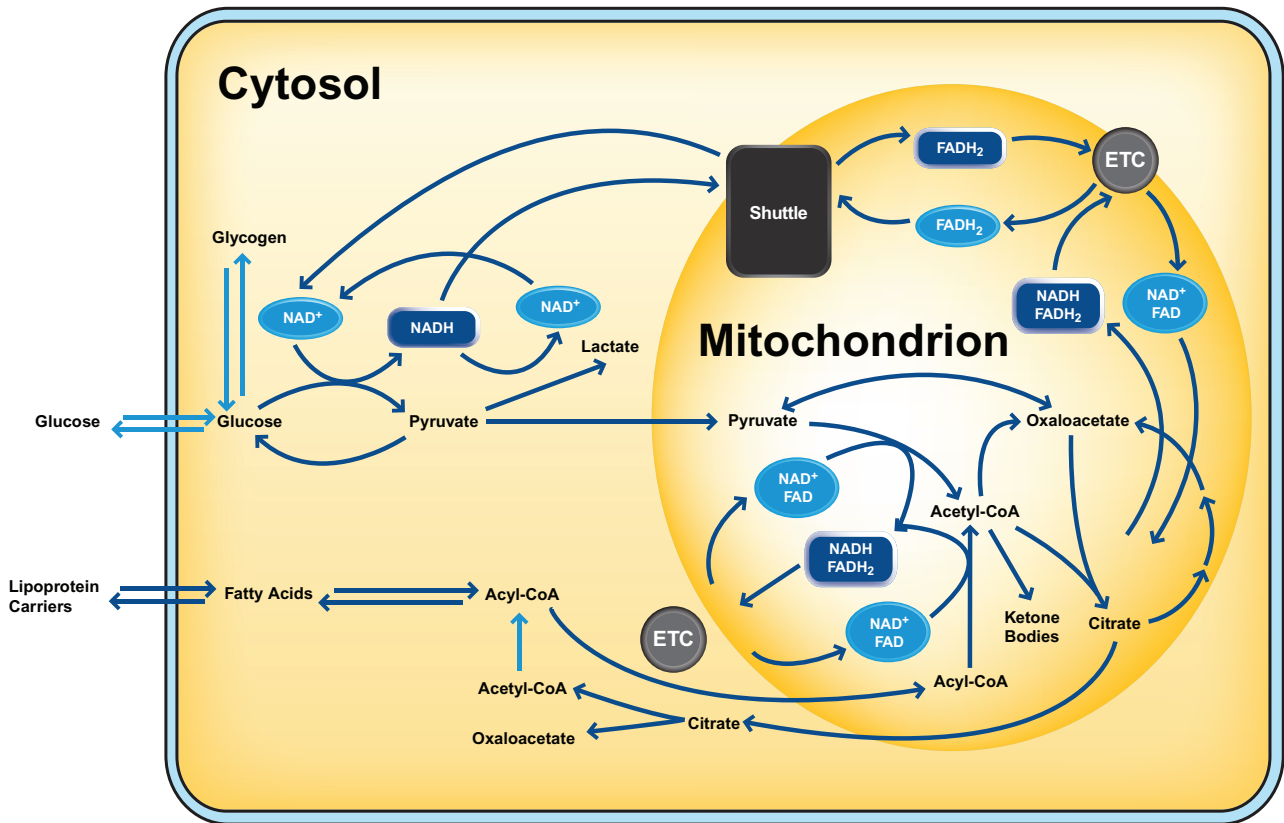
Lane 3 = 100  $\mu$ g

Lane 4 = 50  $\mu$ g



## Cell Metabolism kits

Metabolic processes are essential for all living beings and are divided into two main categories: **anabolic processes**, which consume energy for the synthesis of cellular components such as proteins and nucleic acids and **catabolic processes**, which release energy by breaking down organic compounds. Abcam offers assay kits to quickly and reproducibly measure metabolic processes in **96-well microtiter plates** by **fluorometric/colorimetric detection** methods.

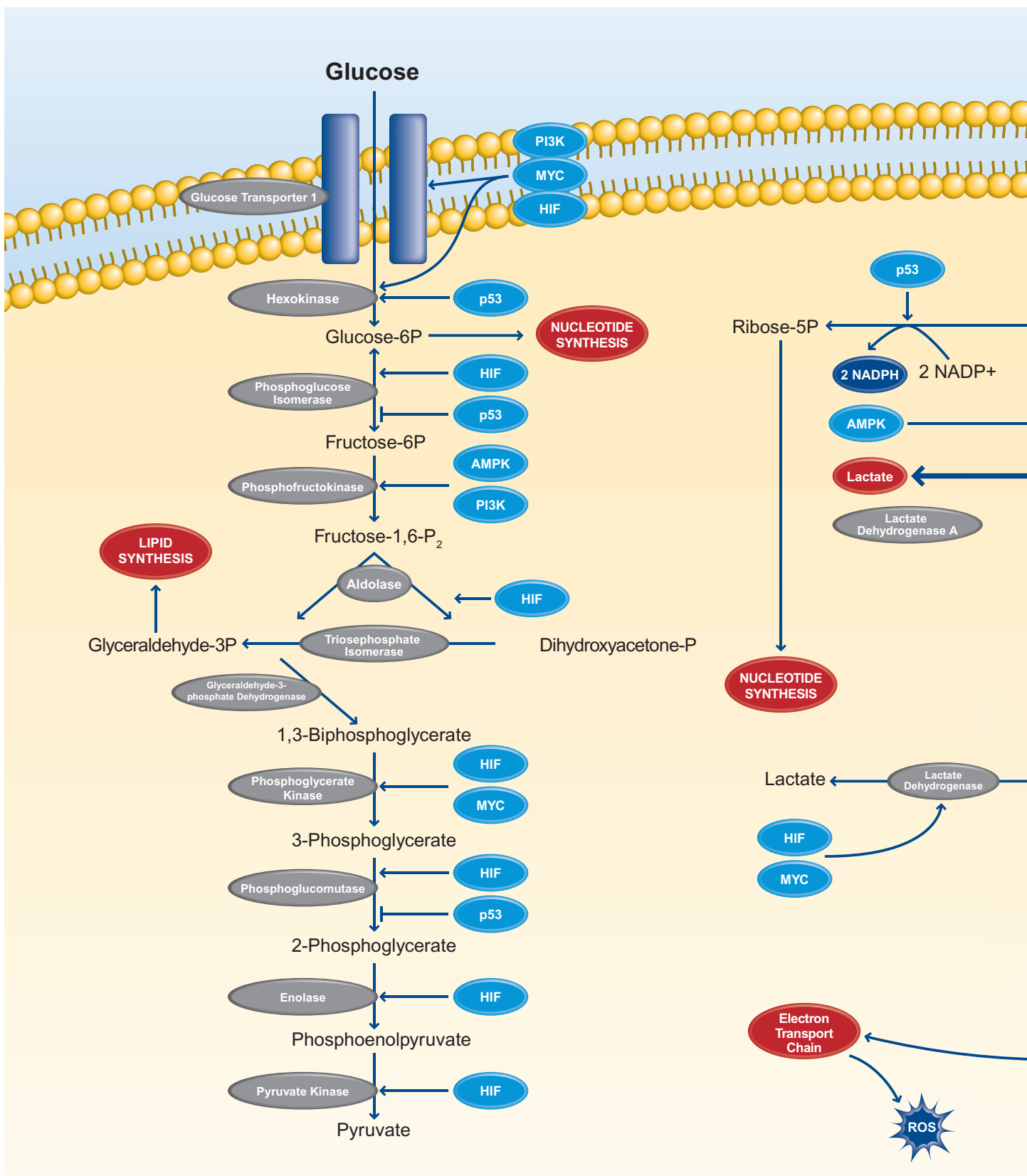


Why not download our metabolic pathways card at [www.abcam.com/metabolism-assay-kits](http://www.abcam.com/metabolism-assay-kits)

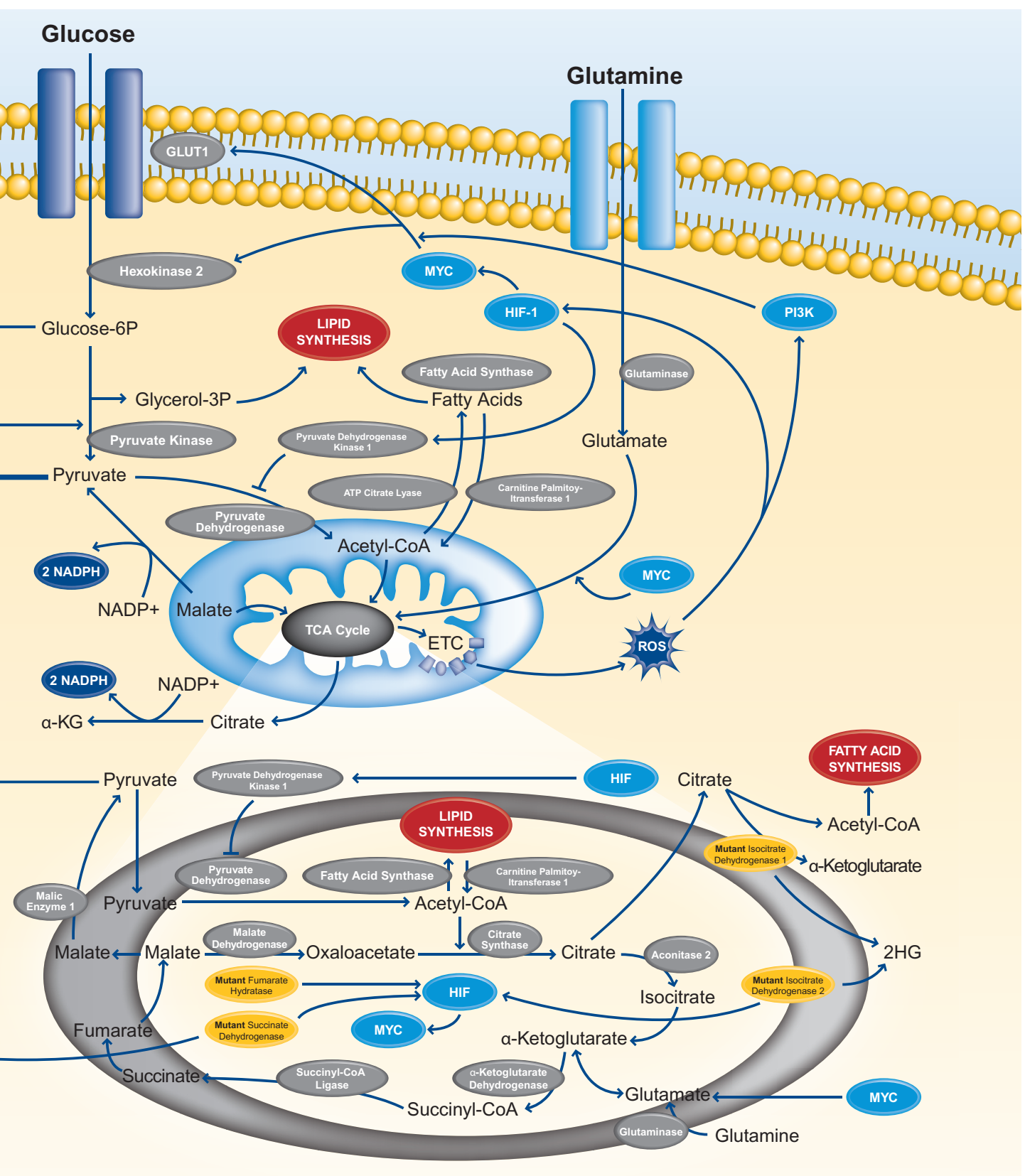
### Alcohol assay kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet <a href="http://www.abcam.com/...">www.abcam.com/...</a>
Alcohol Dehydrogenase Detection	TC supernatants, urine, plasma, serum	A/F	-	100	ab102533
Ethanol	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab65343
Free Glycerol	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65337

# Pathway | Cancer Metabolism







Metabolism

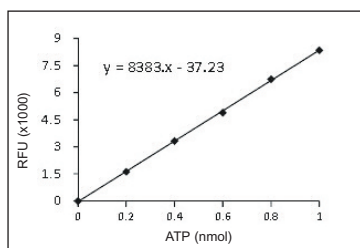
## Amino acid assay kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Alanine Transaminase Activity	Lysates, culture medium, urine, plasma, serum	A/F	-	100	ab105134
Ammonia (Modified Berthelot Assay)	Lysates, culture medium, urine, plasma, serum	A	30 min	100	ab102509
Asparaginase	Lysates	A/F	40min	100	ab107922
Aspartate Assay Kit	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab102512
Branched Chain Amino Acid	TC supernatants, urine, plasma, serum	A	40 min	100	ab83374
Glutamate	TC supernatants, urine, plasma, serum	A	40 min	100	ab83389
Glutamate Dehydrogenase Detection	TC supernatants, urine, plasma, serum	A	-	100	ab102527
Glutamic Oxaloacetic Transaminase Activity	TC supernatants, urine, plasma, serum	A	-	100	ab105135
L-Alanine	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab83394
L-Amino Acid	TC supernatants, urine, plasma, serum	A/F	30 min	100	ab65347
L-Carnitine	TC supernatants, urine, plasma, serum	A/F	30 min	100	ab83392
Phenylalanine	TC supernatants, urine, plasma, serum	F	30 min	100	ab83376
Sarcosine	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab65338
Urea	Lysates, urine, plasma, serum	A	1 h	100	ab83362

## Coenzyme and Cofactor assay kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
ADP/ATP Ratio	Lysates, culture medium, urine, plasma, serum	L/B	-	200	ab65313
ADP	Lysates, culture medium, urine, plasma, serum	A/F	1 h	100	ab83359
ATP	Lysates, culture medium, urine, plasma, serum	A/F	1 h	100	ab83355
ATP Probe (in DMSO)	-	-	-	200 µl	ab104281
Coenzyme A Detection	Lysates, urine, plasma, serum	A/F	1 hs	100	ab102504
Glutathione Peroxidase	TC, urine, plasma, serum	A	30-40 min	100	ab102530
Glutathione Reductase (GR)	TC, urine, plasma, serum	A	40 min	200	ab83461

### ATP colorimetric/fluorometric assay kit (ab83355)



ATP is the key source of energy in the body. If ATP levels are too low to perform basic metabolic process cells will die. The ATP colorimetric/fluorometric assay kit is **highly sensitive** and can detect ATP levels as low as 50 picomol.

Example of fluorometric ATP assay standard curve

## Coenzyme and Cofactor assay kits (continued)

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
GSH, GSSG and Total Glutathione Detection	TC, urine, plasma, serum	F	1-2 hs	100	ab65324
GST Activity	TC, urine, plasma, serum	F	1-2 hs	100	ab65325
GST Activity	TC, urine, plasma, serum	C/A	1-1.5 hs	100	ab65326
NAD/NADH	Lysates, urine, plasma, serum	A	2 hs	100	ab65348
NADP/NADPH	Lysates, urine, plasma, serum	A	2 hs	100	ab65349
PicoProbe™ Acetyl CoA	Lysates, urine, plasma, serum	F	-	100	ab87546

## Ion and Metal assay kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Aconitase	TC supernatants, urine, plasma, serum	A	40 min	100	ab83459
Calcium Detection	Lysates, Culture medium, Urine, Plasma and serum	A	20 min	250	ab102505
Chloride	TC supernatants, urine, plasma, serum	A	20 min	100	ab83372
Cobalt Quantification	TC supernatants, urine, plasma, serum	A	20 min	100	ab102510
Hemin	TC supernatants, urine, plasma, serum	A	30 min	100	ab65332
Iron	Lysates, urine, plasma, serum	A	1 h	100	ab83366
Magnesium Detection	Lysates, culture medium, urine, plasma, serum	A	30 min	100	ab102506
Zinc Quantification	Lysates, culture medium, urine, plasma, serum	A	15 min	100	ab102507

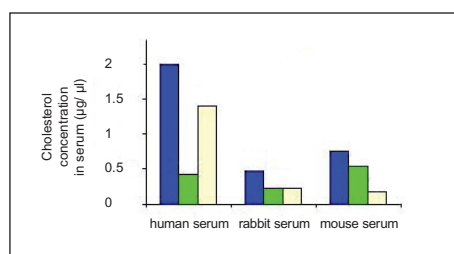
## Citric acid cycle/Intermediary metabolism kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Alpha Ketoglutarate (alpha KG)	TC supernatants, urine, plasma, serum	A/F	30 min	100	ab83431
Citrate	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab83396
Fumarate Detection	TC supernatants, urine, plasma, serum	A	40 min	100	ab102516
Isocitrate	TC supernatants, urine, plasma, serum	A	40 min	100	ab83424
Isocitrate Dehydrogenase	TC supernatants, urine, plasma, serum	A	-	100	ab102528
Malate	TC supernatants, urine, plasma, serum	A	1 h	100	ab83391
NAD/NADH	Lysates, urine, plasma, serum	A	2 hs	100	ab65348
NADP/NADPH	Lysates, urine, plasma, serum	A	2 hs	100	ab65349
Oxaloacetate	TC supernatants, urine, plasma, serum	A	-	100	ab83428
PicoProbe™ Acetyl CoA	Lysates, urine, plasma, serum	F	-	100	ab87546
Pyruvate	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65342
Pyruvate Kinase (PK)	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab83432

## Lipid metabolism/Insulin signaling/Diabetes assay kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Adipogenesis Detection	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab102513
beta Hydroxybutyrate (beta HB)	TC supernatants, urine, plasma, serum	A	40 min	100	ab83390
CETP Activity	TC supernatants, urine, plasma, serum	F	1 h	100	ab65383
CETP Inhibitor Drug Screening	TC supernatants, urine, plasma, serum	F	1 h	100	ab65385
Cholesterol/Cholesteryl Ester Quantitation	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab65359
Cholesterol/Cholesteryl Ester Detection	TC supernatants, urine, plasma, serum	A	1 h	100	ab102515
Choline/Acetylcholine	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65345
Free Fatty Acid Quantification	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65341
Free Glycerol	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65337
Glucose	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65333
Glucose Detection	TC supernatants, urine, plasma, serum	A	30 min	100	ab102517
Glycogen	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65620
Glucose and Sucrose	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65334
HDL and LDL/VLDL Cholesterol	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab65390
HDL Precipitation Buffer	-	-	-	10 ml	ab105138
JNK Activity Screening	Lysates	WB	-	40	ab65784
JNK Activity	Lysates	WB	-	40	ab65785
Lactate Dehydrogenase	TC supernatants, urine, plasma, serum	A	30 min	500	ab102526
Lactate Dehydrogenase	TC supernatants, urine, plasma, serum	A	30 min	500	ab102526
L-Carnitine	TC supernatants, urine, plasma, serum	A/F	30 min	100	ab83392
Lipase Detection	TC supernatants, urine, plasma, serum	A	1-1.5 hs	100	ab102524
Lipase Detection kit II (for High-throughput)	TC supernatants, urine, plasma, serum	A	1-1.5 hs	100	ab102525
Phosphatidylcholine	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab83377
PicoProbe™ Acetyl CoA	Lysates, urine, plasma, serum	F	-	100	ab87546

### HDL and LDL/VDL cholesterol assay kit (ab65390)



Measurement of total **cholesterol**, **HDL**, **LDL/VLDL** from serum samples. Total cholesterol (blue), HDL (green) and LDL/VLDL (cream) cholesterol were measured following the HDL and LDL/VDL cholesterol assay kit protocol.

■ Total cholesterol  
■ HDL  
■ LDL/VLDL

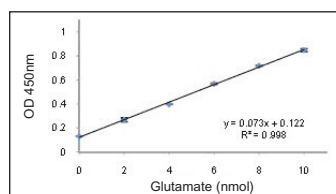
## Lipid metabolism/Insulin signaling/Diabetes assay kits (continued)

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
PLTP Activity	TC supernatants, urine, plasma, serum	F	40 min	100	ab65386
PLTP Inhibitor Drug Screening	TC supernatants, urine, plasma, serum	F	40 min	100	ab65387
Triglyceride Quantification	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab65336
Uric Acid	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65344

## Oxidative stress assay kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Aconitase	TC supernatants, urine, plasma, serum	A	40 min	100	ab83459
Ascorbic Acid	TC supernatants, urine, plasma, serum	A	40 min	100	ab65346
Ascorbic Acid (Biological Samples)	TC supernatants, urine, plasma, serum	A/F	10 min	100	ab65656
ADP/ATP Ratio (Bioluminescent)	Lysates, culture medium, urine, plasma, serum	L/B	-	200	ab65313
ADP	Lysates, culture medium, urine, plasma, serum	A/F	1 h	100	ab83359
ATP	Lysates, culture medium, urine, plasma, serum	A/F	1 h	100	ab83355
ATP Probe (in DMSO)	-	-	-	200 µl	ab104281
Catalase	TC supernatants, urine, plasma, serum	A/F	30-40 min	100	ab83464
cAMP Direct Immunoassay	Lysates, urine, plasma, serum	A	-	100	ab65355
cGMP Direct Immunoassay	Lysates, urine, plasma, serum	A	-	100	ab65356
Ethanol	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab65343
Glutamate	TC supernatants, urine, plasma, serum	A	40 min	100	ab83389
Glutathione Peroxidase	Tissue culture, plasma and serum, urine	A	30-40 min	100	ab102530
Glutathione Reductase (GR)	Tissue culture, plasma and serum, urine	A	40 min	200	ab83461
GSH, GSSG and Total Glutathione Detection	Tissue culture, plasma and serum, urine	F	1-2 hs	100	ab65324
GST Activity	Tissue culture, plasma and serum, urine	F	1-2 hs	100	ab65325
GST Activity	Tissue culture, plasma and serum, urine	C/A	1-1.5 hs	100	ab65326

### Glutamate assay kit (ab83389)



The glutamate assay kit provides a **sensitive detection** method of glutamate: the glutamate enzyme mix recognizes glutamate as a specific substrate resulting in a proportional development of color. The amount of glutamate can hence be easily quantified by colorimetric detection (spectrophotometry at  $\lambda = 450\text{nm}$ ).

Glutamate standard curve obtained using ab83389

## Oxidative stress assay kits (continued)

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Hydrogen Peroxide	Tissue culture, plasma and serum, urine	A/F	1 h	200	ab102500
Iron	Lysates, urine, plasma, serum	A	1 h	100	ab83366
Malate	TC supernatants, urine, plasma, serum	A	1 h	100	ab83391
Nitric Oxide	Lysates, urine, plasma, serum	F	2-3 hs	200	ab65327
Nitric Oxide	Lysates, urine, plasma, serum	A	1-1.5 hs	200	ab65328
NAD/NADH	Lysates, urine, plasma, serum	A	2 hs	100	ab65348
NADP/NADPH	Lysates, urine, plasma, serum	A	2 hs	100	ab65349
Uric Acid	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65344
Xanthine Oxidase	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab102522

## Sugar assay kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Ascorbic Acid	TC supernatants, urine, plasma, serum	A	40 min	100	ab65346
Amylase	TC supernatants, urine, plasma, serum	A	40 min	100	ab102523
Fructose	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab83380
Galactose	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab83382
Galactose and Lactose	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab83378
Glucose 6 Phosphate	TC supernatants, urine, plasma, serum	A	40 min	100	ab83426
Glucose 6 phosphate (High sensitivity)	TC supernatants, urine, plasma, serum	F	40	100	ab107923
Glucose 6 Phosphate Dehydrogenase	TC supernatants, urine, plasma, serum	A	1 h	100	ab102529
Glucose Dehydrogenase	TC supernatants, urine, plasma, serum	A	2 hs	100	ab102532
Glucose and Sucrose	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65334
D-Lactate	TC supernatants, urine, plasma, serum	A	40 min	100	ab83429
Lactate Assay	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab65330
Lactate	TC supernatants, urine, plasma, serum	A	40 min	100	ab65331
Lactate Dehydrogenase	TC supernatants, urine, plasma, serum	A/F	30 min	500	ab102526
Lactose	TC supernatants, urine, plasma, serum	A	1 h	100	ab83384
Malate	TC supernatants, urine, plasma, serum	A	1 h	100	ab83391
Maltose	TC supernatants, urine, plasma, serum	A	1 h	100	ab83388
Maltose and Glucose	TC supernatants, urine, plasma, serum	A	1 h	100	ab65335
Pyruvate	TC supernatants, urine, plasma, serum	A	40 min	100	ab65342
Pyruvate Kinase (PK)	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab83432

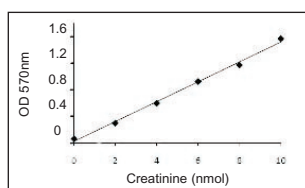
## Sugar assay kits (continued)

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Sialic Acid (NANA)	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab83375
Starch	TC supernatants, urine, plasma, serum	A/F	40 min	100	ab83393
Sucrose	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab83387

## Other metabolism kits

Product name	Sample type	Detection	Time	Size (tests)	Datasheet www.abcam.com/...
Creatine	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab65339
Creatinine	TC supernatants, urine, plasma, serum	A/F	1 h	100	ab65340
Hemin	TC supernatants, urine, plasma, serum	A	30 min	100	ab65332
Trypsin Activity	TC supernatants, urine, plasma, serum	A	1-2 hs	100	ab102531
Urea	Lysates, urine, plasma, serum	A	1 h	100	ab83362

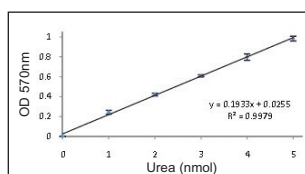
### Creatinine assay kit (ab65340)



Levels of **creatinine**, a break-down product of creatine phosphate, are fairly constant in the human body. Upon renal failure however creatinine does not get filtered out by the kidneys resulting in a rise in creatinine levels. This makes creatinine an ideal marker for measuring the **glomerular filtration rate (GFR)**. The creatinine kit can be used to determine creatinine concentrations in body fluids such as urine, serum and cerebrospinal fluid.

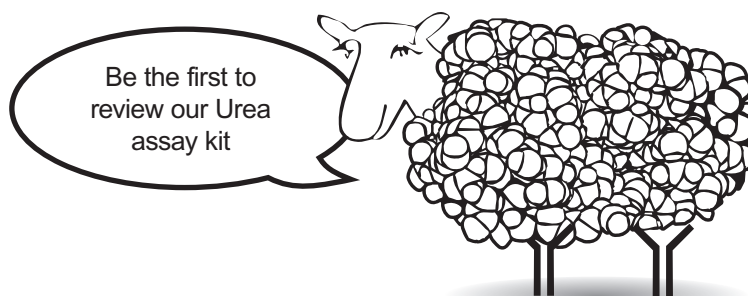
Creatinine standard

### Urea assay kit (ab83362)



Urea in the presence of the enzyme mix (kit component) forms a product that reacts with the OxiRed probe to generate color (Lambda=570nm). The optical density of the produced color can be measured and has a direct relationship with the urea concentration in the solution. The kit can detect urea in the range of **0.5 nmol-10 µM** per well.

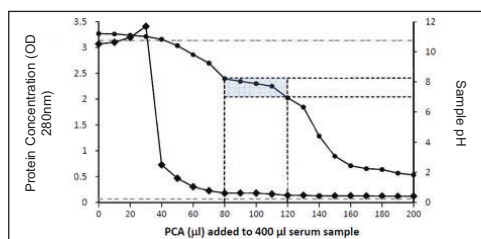
Urea standard curve obtained using ab83362



## Molecular biology kits

Protein name	Sample type	Applications/ Detection method	Assay time	Size (tests)	Datasheet www.abcam.com/...
Apoptotic Cell Isolation	Cell culture	-	1 h	30 isolations	ab65782
Apoptotic DNA Ladder Detection	Apoptotic cells and tissue	-	2-4 hs	50	ab65627
Apoptotic DNA Ladder Isolation	Apoptotic cells	AG	1.5 h	50	ab66090
Beta Galactosidase Detection	Culture cells	Microscopy/ Expression check	-	200	ab102534
Cytosol/Particulate Rapid Separation	Cell culture, tissue	WB, ELISA	1 h	50	ab65398
Deproteinizing Sample Preparation	Cell culture, serum, plasma, high protein samples	-	20 min	200	ab93299
Direct In situ DNA Fragmentation	DNA from apoptotic tissue	AG	1.5 h	50	ab66093
Genomic DNA Isolation	Cell culture, tissue	-	2 hs	50	ab65358
High Sensitivity Apoptotic DNA Ladder Detection	Cell culture and paraffin embedded tissue	Flow Cyt, FM	1 h	50	ab66108
Mammalian Cell Extraction	Cell culture, tissue	-	20 min	500	ab65399
Mitochondria/Cytosol Fractionation	Cell culture, tissue	WB, ELISA	3-4 hs	100	ab65320
Mitochondria/Cytosol Fractionation	Cell culture, tissue	WB, ELISA	3-4 hs	25	ab65395
Mitochondrial DNA Isolation	Cell culture, tissue	-	2 hs	50	ab65321
PEG Virus Precipitation Kit	Retroviruses, baculoviruses, lentiviruses, phages in cell culture medium/environmental samples	-	-	50	ab102538
Plasma Membrane Protein Extraction	Cell culture, tissue	WB, 2D gels, enzyme analysis	1 h	50	ab65400
Protease Inhibitor Cocktail Formulation (DMSO)	-	-	-	sufficient for 125 ml of sample	ab65621
Proteasome Activity	Lysates	F	30-60 min	100	ab107921
Red Fluorescence In situ BrdU DNA Fragmentation	Fixed cells and tissue sections	Flow Cyt	3 hs	60	ab66110
10kD Spin Column	-	-	-	25	ab93349

### Deproteinizing Sample Preparation kit (ab93299)



Many bioassays for measuring small molecules such as **cAMP**, **cGMP**, **glycogen**, **glutathione**, and **antioxidants** require removal of excess proteins and interfering enzymes from biological samples. The Abcam deproteinizing kit uses perchloric acid precipitation in order to remove excess amounts of protein and to stabilize many of the small molecule analytes.

Deproteinization of serum samples

### 10kD spin columns (ab93349)



The 10kD spin columns are disposable ultrafiltration devices for the concentration of biological samples. The maximum initial sample volume is 500 µl.

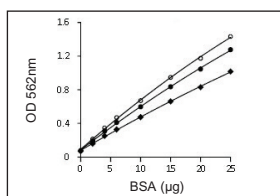


# Protein detection

In addition to offering Western blot reagents such as ECL, our assay kit catalogue includes 2 protein quantitation kits. These utilize bicinchoninic acid (BCA) or an improved Coomassie blue G reagent which allow you to accurately determine your protein concentrations – enabling equal Western blot loading.

Protein name	Detection	Size (tests)	Datasheet www.abcam.com/...
BCA Protein Quantification	C	1000	ab102536
ECL Western Blotting Substrate	WB	50	ab65623
ECL Western Blotting Substrate	WB	500	ab65628
Protease Inhibitor Cocktail Formulation	-	sufficient for 125 ml of sample	ab65621
Proteasome Activity	F	100	ab107921
Protein Quantitation	C	1000	ab102535

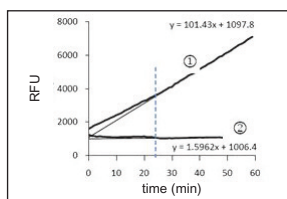
## BCA protein quantitation kit (ab102536)



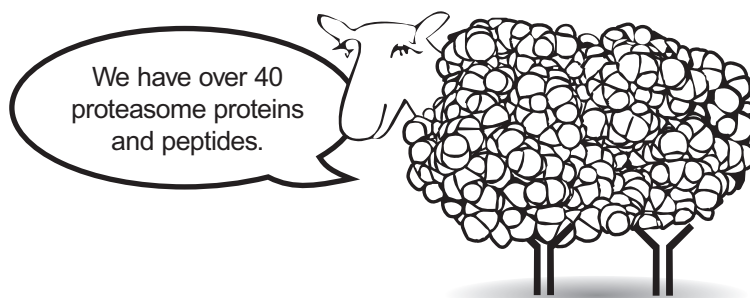
The BCA Protein assay (or Smith assay) is a biochemical assay for determining the total level of protein in a solution. The total protein concentration is determined by measuring the color change of the sample solution from green to purple, which is proportional to the protein concentration.

- = 90 min
- = 60 min
- ◆ = 30 min

## Proteasome activity assay kit (ab107921)



Kinetics of proteasome activity assay in the absence (1) and presence (2) of the proteasome inhibitor MG-132. Equations represent the best fit of lines during the linear portion of the reaction.



# Troubleshooting guide

Problem	Reason	Solution
<b>Assay not working</b>	Assay buffer at wrong temperature	Assay buffer must not be chilled - needs to be at room temperature to work optimally
	Skipping a step in the protocol	Re-read and follow the datasheet exactly
	Plate read at incorrect wavelength	Make sure you are using the appropriate reader and filter settings (refer to datasheet if in doubt)
	Use of an unsuitable microtiter plate	Fluorescence: black plates (clear bottoms); Luminescence: white plates; Colorimetry: clear plates. If critical, datasheet will indicate whether to use flat- or U-shaped wells.
<b>Samples with inconsistent readings samples</b>	Use of an unsuitable sample type	Refer to datasheet for details about incompatible samples
	Samples were prepared in a non-recommended buffer	Use the assay buffer provided with the kit or refer to datasheet for instructions
	Samples were not deproteinized (indicated on datasheet)	Use the <b>10kDa spin column (ab93349)</b> or the <b>Deproteinizing sample preparation kit (ab93299)</b>
	Cell/tissue samples were not sufficiently homogenized	Increase sonication time, number of strokes with the Dounce homogenizer; monitor progress of lysis under a microscope
	Too many freeze-thaw cycles	Aliquot samples in order to reduce the number of freeze-thaw cycles
	Samples contain impeding substances	Troubleshoot and also consider deproteinizing samples
	Samples are too old or incorrectly stored	Use freshly made samples and store at recommended temperature until use
<b>Lower/ Higher readings in samples and standards</b>	Use of not fully thawed kit components	Wait for components to thaw completely and gently mix prior to use
	Use of out-of-date kit or incorrectly stored reagents	Always check the expiry date and store kit components as recommended on the datasheet
	Allowing the reagents to sit for extended periods on ice	Try to prepare a fresh reaction mix prior to each use
	Incorrect incubation time or incubation temperature	Refer to datasheet for recommended incubation time and temperature
	Incorrect amounts used	Check whether your pipette is calibrated correctly; always use the smallest volume pipette that can pipette the entire volume
<b>Standard curve is not linear</b>	Use of partially thawed components	Wait for components to thaw completely and gently mix prior to use
	Pipetting errors when setting up the standard curve	Try to avoid pipetting small volumes
	Incorrect pipetting when preparing the reaction mix	Always prepare a master mix
	Air bubbles in wells	Air bubbles will interfere with readings; try to avoid producing air bubbles and always remove bubbles prior to reading plates
	Concentration of standard stock is incorrect	Re-check datasheet for recommended concentrations of standard stocks
	Errors in standard curve calculations	Refer to datasheet and re-check the calculations
	Using other reagents than those provided with the kit	Use fresh components from the same kit
<b>Unexpected results</b>	Measured at wrong wavelength	Make sure you are using the appropriate reader and filter settings (refer to datasheet, if in doubt)
	Samples contain impeding substances	Troubleshoot and also consider deproteinizing samples
	Use of an unsuitable sample type	Recommended sample types are listed on the datasheet
	Sample readings are outside the linear range	In order to be in the linear range concentrate or dilute samples

## Contact details

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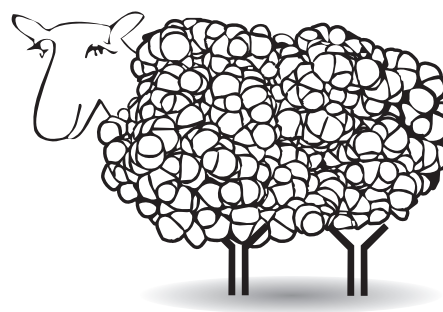
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