

- A**
 Abbott, Catherine M. 1293
 Ahmed, Asif 1237
 Amici, Mascia 1359
 Al Haj Zen, Ayman 1221
 Andre, Maud 1214
 Andrew, Jemma 1407
- B**
 Bannerman, David M. 1323
 Bao, Leyuan 1193
 Bates, David O. 1207
 Baur, Roland 1338
 Bennett, Michael V.L. 1369
 Bentley, Katie 1233
 Bicknell, Roy 1214
 Birdsey, Graeme M. 1248
 Bithell, Angela 1270
 Bonin, Robert P. 1334
 Brownstein, David 1293
 Bruns, Alexander F. 1193
 Buckley, Noel J. 1270
- C**
 Carmichael, S. Tomas 1412
 Chen, Jianhuan 1415
 Cho, Kwangwook 1359
 Clarkson, Andrew N. 1412
 Collingridge, Graham 1359
 Connolly, Christopher N. 1389
 Conway, Ann-Marie 1375
 Cooper, Thomas A. 1281
 Cross, Darren A.E. 1254
 Cross, Michael J. 1254
 Cudmore, Melissa J. 1237
- D**
 Daniel, Chammiran 1399
 Dargan, Sheila 1359
 Das, Paromita 1394
 Doherty, Andrew 1359
 Dryden, Nicola H. 1248
- E**
 Evans, Ian M. 1171
- F**
 Fang, Shisong 1415
 Fantin, Alessandro 1228
 Farrar, Charlotte 1179
 Fiedler, Lorna R. 1243
 Fisher, Simon E. 1263
- Frankel, Paul 1171
- G**
 Garonna, Elena 1179
 Gerhardt, Holger 1233
 Gong, Chenguang 1287
 Gray, Nicola K. 1261
 Greenwood, Sam M. 1389
 Griffiths, Lowri A. 1293
- H**
 Hardingham, Giles E. 1198
 Hardy, John 1276
 Harper, Steven J. 1207
 Harvey, Jenni 1364
 Heath, Victoria L. 1214
 Herbert, John M.J. 1214
 Hoareau-Aveilla, Coralie 1207
 Holmes, Katherine 1254
 Hoogland, Govert 1419
- J**
 Jakobsson, Lars 1233
 James, Allan B. 1375
 Jane, David 1359
 Janssen, Ariane 1423
 Jensen, Cathy J. 1311
 Jo, Jihoon 1359
 Johnson, Rory 1270
 Jones, Lesley 1261
- K**
 Kaur, Kuldeep H. 1338
 Krilleke, Dominik 1201
- L**
 Lalo, Ulyana 1407
 Lau, C. Geoffrey 1369
 Lee, Johanna E. 1281
 Legg, John A. 1214
 Liu, Hua 1415
 Lo, Wing-Sze 1415
 Lummis, Sarah C.R. 1343,
 1404
 Lüscher, Benjamin P. 1338
- M**
 Madeddu, Paolo 1221
 Maden, Charlotte H. 1228
 Maquat, Lynne E. 1287
 Martin, Loren J. 1334
 McDade, Donna M. 1375
- McGonigle, Ian 1404
 Mei, Lingling 1415
 Mellor, Harry 1184
 Mizielinska, Sarah M. 1389
 Mohamed, Mahmoud S. 1394
 Möhler, Hanns 1328
 Morris, Brian J. 1375
 Moss, Stephen J. 1355
 Moulton, Peter R. 1317, 1364
 Müller, Jürgen 1254
 Murphy, Jessica 1369
- N**
 Newbery, Helen J. 1293
 Ng, Yin-Shan Eric 1201
 Nicholls, David G. 1385
- O**
 Öhman, Marie 1399
 Oldfield, Brian J. 1311
 O'Leary, Timothy 1347
 Oltean, Sebastian 1207
 Orser, Beverley A. 1334
 Otton, Hannah J. 1423
- P**
 Palygin, Oleg 1407
 Pankratov, Yuriy 1407
 Pavitt, Graham D. 1298
 Pellet-Many, Caroline 1171
 Ponnambalam, Sreenivasan 1193
 Proud, Christopher G. 1298
 Pun, Frank W. 1415
- Q**
 Qiu, Yan 1207
- R**
 Rahimi, Nader 1189
 Randi, Anna M. 1248
 Rigo, Jean-Michel 1419
 Riley, Paul R. 1218
 Roberts, Owain Llŷr 1254
 Rodenas-Ruano, Alma 1369
 Rubio, Justin P. 1311
 Ruhrberg, Christiana 1228
 Ryten, Mina 1276
- S**
 Scott, Alice 1184
 Sheldon, Helen 1214
- Shen, Guofu 1394
 Shen, Hui 1378
 Shibuya, Masabumi 1161
 Shima, David T. 1201
 Sigel, Erwin 1338
 Smart, Nicola 1218
 Smith, Sheryl S. 1378
 Soares, Dinesh C. 1293
 Sperone, Andrea 1248
 Squires, Charlotte E. 1293
 Stöber, Gerald 1415
 Swain, Rajeeb Kumar 1214
 Swijsen, Ann 1419
- T**
 Takayasu, Yukihiro 1369
 Takeuchi, Koichi 1369
 Tietz, Elizabeth I. 1394
 Trabzuni, Danyah 1276
 Tsang, Shui-Ying 1415
 Tummala, Hemanth 1389
- U**
 Ule, Jernej 1278
- V**
 Verissimo, Ana Raquel 1214
 Vernes, Sonja C. 1263
 Vithlani, Mansi 1355
- W**
 Walker, John H. 1193
 Waltenberger, Johannes 1167
 Wheeler-Jones, Caroline P.D.
 1179
 Wojciak-Stothard, Beata 1243
 Wood, Ian C. 1261
 Wyllie, David J.A. 1347, 1423
- X**
 Xue, Hong 1415
- Y**
 Ylä-Herttua, Seppo 1198
 Yu, Zhiliang 1415
- Z**
 Zachary, Ian C. 1171
 Zhao, Cun-You 1415
 Zukin, R. Suzanne 1369

- A**
- AAA (see ATPase associated with various cellular activities)
- A β (see amyloid β -peptide)
- acidothermophile, 23
- actin, 961, 966
- activation-induced cytidine deaminase (AID), 561
- activator protein-2 (AP-2), 1104
- adaptor protein (AP), 1355
- ADAR (see adenosine deaminase that acts on RNA)
- adenosine deaminase that acts on RNA (ADAR), 1399
- adenosylcobalamin, 336
- ADMA (see asymmetric dimethylarginine)
- adult neurogenesis, 1419
- aggregation, 36, 682
- aging, 303, 479, 819, 1050
- AGO2 (see Argonaute 2)
- agonist, 1347
- Aicardi-Goutières syndrome, 535
- AID (see activation-induced cytidine deaminase)
- Akt/protein kinase B (PKB), 217, 278
- ALG-2 (apoptosis-linked gene 2)-interacting protein X (Alix), 161, 181, 190
- Alix [see ALG-2 (apoptosis-linked gene 2)-interacting protein X]
- $\alpha_4\beta\delta$, 1378
- ALT (see alternative lengthening of telomeres)
- alternative lengthening of telomeres (ALT), 589
- alternative splicing, 1278, 1311
- Alzheimer's disease, 692, 1126
- amino acid, 289, 291, 295
- amino acid sensing, 213
- amino acid transporter, 237, 248
- α -amino-3-hydroxy-5-methylisoxazole-4-propionic acid (AMPA), 1317, 1323
- α -amino-3-hydroxy-5-methylisoxazole-4-propionic acid receptor (AMPA receptor), 1364, 1394
- AMPA (see α -amino-3-hydroxy-5-methylisoxazole-4-propionic acid)
- AMPA receptor (see α -amino-3-hydroxy-5-methylisoxazole-4-propionic acid receptor)
- amplicon, 433
- amyloid, 671
- β -amyloid, 692
- amyloid β -peptide (A β), 303
- anaemia, 796
- anaphase bridge, 553
- aneuploidy, 910, 971
- angiogenesis, 1167, 1171, 1179, 1184, 1189, 1193, 1198, 1207, 1214, 1233, 1243, 1248, 1254
- angiogenic therapy, 1161
- angioplasticity, 805
- anhedonia, 313
- ankyrin, 796
- anti-aging drug, 1050
- antipsychotic drug, 1415
- anxiety, 1328
- AP (see adaptor protein; apurinic/aprimidinic endonuclease)
- AP-2 (see activator protein-2)
- apoptosis, 137, 200
- apoptosis-linked gene 2 (ALG-2), 190
- aprataxin, 577
- apurinic/aprimidinic endonuclease (AP endonuclease), 79
- arachidonic acid, 1104, 1179
- archaeal plasmid, 23
- archaeal virus, 23, 114
- archaeon, 1, 7, 12, 18, 36, 46, 52, 65, 69, 74, 83, 88, 92, 97, 102, 114, 123, 127, 133, 151, 547
- Argonaute 2 (AGO2), 931
- arteriogenesis, 1167, 1198
- ascomycete, 772
- ASD (see autism spectrum disorder)
- assembly, 671
- asthma, 805, 824, 873, 886
- astrocyte, 1407
- asymmetric dimethylarginine (ADMA), 1243
- ASZ1, 843
- ataxia oculomotor apraxia, 577
- ataxia telangiectasia, 569
- Atg1/Ulk1 (see autophagy-related gene 1/Unc51-like kinase 1)
- ATP, 1385
- ATPase associated with various cellular activities (AAA), 118, 143
- Aurora B kinase, 976
- autism spectrum disorder (ASD), 1298
- autoinhibition, 181
- autophagy, 208, 213, 232, 253
- autophagy-related gene 1/Unc51-like kinase 1 (Atg1/Ulk1), 232
- 5-[aziridin-1-yl]-2,4-dinitrobenzamide (CB1954), 413
- B**
- bacterium, 539, 762
- bacteroidete, 772
- BAR domain (see Bin/amphiphysin/Rvs domain)
- base excision repair (BER), 79
- B-cell receptor microcluster (BCR microcluster), 1014
- BCR microcluster (see B-cell receptor microcluster)
- BDNF (see brain-derived neurotrophic factor)
- behaviour, 1133
- benzodiazepine, 1328, 1334, 1338
- benzodiazepine dependence, 1394
- BER (see base excision repair)
- β -sheet, 671, 682
- Bicaudal-D (BicD), 1066
- BicD (see bicaudal-D)
- big mitogen-activated protein kinase 1 (BMK1), 1254
- Bin/amphiphysin/Rvs domain (BAR domain), 1061
- bioanalysis, 697
- bioenergetics, 253
- biological imaging, 1042
- biomarker, 855, 868
- biomaterial, 687
- biomimetic material, 677
- biomineral, 687
- biomolecule, 687
- bionanotechnology, 665
- biorientation, 976
- biosensor, 445
- bipolar depression, 1080
- bipolar disorder, 1077, 1085, 1090, 1096, 1099, 1104, 1110, 1115, 1121, 1126, 1133, 1139
- bipolar spindle formation, 1045
- blood-brain barrier, 329
- blood vessel, 1228
- Bloom's syndrome, 553
- Bloom's syndrome protein (BLM), 553
- BMK1 (see big mitogen-activated protein kinase 1)
- 53BP1 (see p53-binding protein 1)
- Bragg peak, 893
- brain, 1261, 1276, 1334
- brain-derived neurotrophic factor (BDNF), 1270, 1412
- brain functional change, 1085
- BRCA1 (see breast cancer 1 early-onset)
- breast cancer 1 early-onset (BRCA1), 597
- Bud32, 29
- budding, 156
- buried residue, 727
- C**
- 3C (see chromosome conformation capture)
- CA1 hippocampus, 1378
- CACH (see childhood ataxia with central nervous system hypomyelination)
- calcium, 190, 200, 1369
- calcium signalling, 1198
- cancer, 167, 204, 265, 479, 483, 511, 605, 615, 918, 1126, 1171, 1201
- cancer diagnosis, 424
- cancer dissemination, 966
- cancer risk, 527
- cancer therapy, 483
- cancer treatment, 413
- carbon monoxide, 1237
- carcinoma sample, 1207
- cardiovascular regenerative medicine, 1218
- cargo transport, 1066
- caspase, 200
- catalase/peroxidase (KatG), 772
- catalytic cycle, 354
- catechol-O-methyltransferase (COMT), 1090
- CCT (see chaperone containing t-complex polypeptide 1)
- CD19, 1014
- CD200 receptor, 811
- Cdc6 (see cell-division cycle 6)
- Cdc45, 926
- Cdc48 (see cell-division cycle 48)
- CDK9-cyclin T (see cyclin-dependent kinase 9-cyclin T)
- cell culture, 660
- cell cycle, 483, 926, 931
- cell-cycle control, 527
- cell-division cycle 48 (Cdc48), 118

- cell-division cycle 6 (Cdc6), 7
 cell growth, 232, 278
 cell migration, 1072
 cell motility, 966, 1072
 cell-replacement therapy, 323
 central carbohydrate metabolism, 58
 central nervous system (CNS), 1399
 centrosome, 910
 ceramide, 253
 cerebral ischaemia, 1412
 CFTR (see cystic fibrosis conductance regulator)
 chaperone, 46
 chaperone containing t-complex polypeptide 1 (CCT), 46
 chaperonin, 46
 Charcot-Marie-Tooth disease, 1027
 charged multivesicular body protein (CHMP), 156
 charged multivesicular body protein 2B (CHMP2B), 208
 checkpoint, 926
 chemical interaction, 955
 chemically induced dynamic nuclear polarization (CIDNP), 358, 382
 chemotaxis, 1110, 1214
 childhood ataxia with central nervous system hypomyelination (CACH), 1298
 ChIP (see chromatin immunoprecipitation)
 chlorophyll biosynthesis, 354
 chlorophyllide, 387
 CHMP (see charged multivesicular body protein)
 CHMP2B (see charged multivesicular body protein 2B)
 cholesterol, 955
 chromatin immunoprecipitation (ChIP), 843, 1263
 chromatin modification, 605
 chromatin structure, 569
 chromophore, 441
 chromosome, 971, 976
 chromosome conformation capture (3C), 843
 chromosome replication, 108
 chronic checkpoint activation, 535
 chronic lung disease, 868
 chronic obstructive pulmonary disease (COPD), 814, 819, 824, 855, 886
 CIDNP (see chemically induced dynamic nuclear polarization)
cis regulatory element, 1311
 CLASP [see cytoskeletal linker protein 170 (CLIP-170)-associated protein]
 class switch recombination, 561
 clathrin, 1355
 clathrin-coated vesicle, 1022
 clathrin-independent endocytosis, 1061
 clathrin-mediated endocytosis, 1022
 CLIP (see cross-linking and immunoprecipitation)
 cluster of regularly interspaced palindromic repeats (CRISPR), 23
 CNS (see central nervous system)
 CNTNAP2 (see contactin-associated protein-like 2)
 co-activator, 52
 co-amplification at lower denaturation temperature-PCR (COLD-PCR), 427
 coding potential, 778
 codon model, 783
 coenzyme B₁₂, 336
 coenzyme Q, 707
 co-evolution, 768
 cognition, 1328
 coiled-coil structural motif, 653
 COLD-PCD (see co-amplification at lower denaturation temperature-PCR)
 comet assay, 914
 comparative genomics, 734
 Compound I, 373
 computer simulation, 914
 COMT (see catechol-O-methyltransferase)
 concatenated subunit, 1338
 conductance, 1334, 1347
 conformational change, 354, 387
 conjugation, 88
 contactin-associated protein-like 2 (CNTNAP2), 1263
 controlled delivery, 702
 COPD (see chronic obstructive pulmonary disease)
 copy control, 42
 copy number variant, 734
 corpus callosum, 1096
 cortactin-binding protein 2 (CTTNBP2), 843
 corticosteroid, 824
 cowpea mosaic virus (CPMV), 665
 COX (see cyclo-oxygenase)
 CPMV (see cowpea mosaic virus)
 crenarchaeon, 23, 58
 CRISPR (see cluster of regularly interspaced palindromic repeats)
 cross- β diffraction, 671
 cross-linking, 713
 cross-linking and immunoprecipitation (CLIP), 1278
 cross-talk, 1407
 crystal structure, 190
 CTTNBP2 (see cortactin-binding protein 2)
 CUG-binding protein 1 (CUGBP1), 1281
 CUGBP1 (see CUG-binding protein 1)
 CUG repeat, 1281
 cyclin-dependent kinase 9-cyclin T (CDK9-cyclin T), 627
 cyclo-oxygenase (COX), 1179
 Cys-loop, 1343, 1404
 cystic fibrosis, 863
 cystic fibrosis transmembrane conductance regulator (CFTR), 843
 cytochrome, 368
 cytokine receptor, 873
 cytokinesis, 156
 cytoskeletal linker protein 170 (CLIP-170) associated protein (CLASP), 1002
 cytoskeleton reorganization, 1014
D
 damage-response signalling, 569
 database analysis, 745
 DDAH (see dimethylarginine dimethylaminohydrolase)
 deletion mutant, 97
 Delta-like 4 (Dll4), 1233
 dendrite, 1389
 dendritic bead, 1389
de novo gene formation, 778
 Denys-Drash syndrome, 1207
 depression, 313, 1085
 desorption/ionization on silicon (DIOS), 905
 deubiquitinase, 937
 developing country, 419
 developing world, 419
 DHFR (see dihydrofolate reductase)
 DHS (see DNase I-hypersensitive site)
 diabetes mellitus, 1167
 diagnosis, 419
Dictyostelium, 1110
 diffraction data collection, 378
 diffusion, 343
 diffusion tensor imaging (DTI), 1096
 dihydrofolate reductase (DHFR), 349, 354
 dimethylarginine dimethylaminohydrolase (DDAH), 1243
 DIOS (see desorption/ionization on silicon)
 dioxygenase, 408
 directed evolution, 740
 DISC1 (see disrupted in schizophrenia 1) disease, 1298
 disease mechanism, 855
 disrupted in schizophrenia 1 (DISC1), 308
 dissolved oxygen/nitrogen, 466
 Dll4 (see Delta-like 4)
 DM1 (see myotonic dystrophy type 1)
 DMPK (see dystrophin myotonia protein kinase)
 DNA amplification, 427
 DNA analysis, 438
 DNA-binding protein, 343
 DNA damage, 479, 483, 495, 926
 DNA-damage response, 583, 597
 DNA delivery, 713
 DNA detection, 441
 DNA 3' exonuclease, 535
 DNA hybridization, 445
 DNA ligase, 539
 DNA microarray, 471, 1090
 DNA polymerase, 65
 DNA purity, 466
 DNA quantification, 466
 DNA repair, 36, 479, 483, 527, 539, 605
 DNA replication, 1, 7, 108, 605, 926
 DNA replication and repair, 65
 DNase I-hypersensitive site (DHS), 843
 DNase III, 535
 DNA sequence, 343
 DNA supercoiling, 893
 DNA topology, 69
 domain shuffling, 751
 domain superfamily, 745
 dopamine, 313
 Dot1, 897
 double-strand break, 597
 double-strand break repair, 569
Drosophila, 204, 232, 1404
 drug binding, 583
 drug withdrawal, 1394
 DTI (see diffusion tensor imaging)
 dual-coding sequence, 756
 duplication, 768
 dynamic instability, 997, 1007
 dynamin, 1022

- dynein, 961, 991, 1066
dystrophin myotonia protein kinase (DMPK), 1281
- E**
EB1 (see end-binding 1)
4E-BP1 (see eukaryotic initiation factor 4E-binding protein 1)
ECSCR (see endothelial-cell-specific chemotaxis regulator)
EDF-1 (see endothelial cell differentiation factor 1)
eEF1A1 (see eukaryotic elongation factor 1A1)
eEF1A2 (see eukaryotic elongation factor 1A2)
eEF2k (see eukaryotic elongation factor 2 kinase)
Eg5, 1045
EGF (see epidermal growth factor)
EGFR (see epidermal growth factor receptor)
eIF2B (see eukaryotic initiation factor 2B)
eIF4E (see eukaryotic initiation factor 4E)
EJC (see exon junction complex)
EKC (see endopeptidase-like kinase chromatin-associated)
electron-density map, 378
electron transfer, 382, 392, 400, 413
electron transfer chain, 358
electroporation, 88
elongation factor, 227
emphysema, 819
end-binding 1 (EB1), 997
endocytosis, 178, 1019, 1027, 1072, 1184, 1193
endopeptidase-like kinase chromatin-associated (EKC), 29
endoplasmic reticulum, 961, 1399
endosomal recycling, 1072
endosomal-recycling compartment, 1032
endosomal sorting complex required for transport (ESCRT), 137, 143, 146, 151, 161, 167, 173, 181, 185, 195, 200, 204
endosomal sorting complex required for transport III (ESCRT-III), 156, 208
endosome, 146, 167, 178, 204, 208, 1019
endosymbiosis, 792
endothelial cell, 1179, 1189, 1248, 1254
endothelial cell differentiation factor 1 (EDF-1), 52
endothelial dysfunction, 1167
endothelial homeostasis, 1248
endothelial progenitor cell (EPC), 805
endothelial-cell-specific chemotaxis regulator (ECSCR), 1214
ENU (see *N*-ethyl-*N*-nitrosourea)
enzyme activity space, 740
enzyme kinetics, 707
enzyme mechanism, 373
enzyme promiscuity, 740
enzyme system, 378
enzymology, 333
EPC (see endothelial progenitor cell)
epicardium, 1218
epidermal growth factor (EGF), 877
epidermal growth factor receptor (EGFR), 146, 173
epilepsy, 1126
epithelial cell, 1072
epithelial-mesenchymal transition, 882
epithelium, 849
ERK5 (see extracellular-signal-regulated kinase 5)
Escherichia coli nitroreductase, 413
ESCRT (see endosomal sorting complex required for transport)
ESCRT-III (see endosomal sorting complex required for transport III)
ESE (see exonic splicing enhancer)
ethanol, 1423
ETS transcription factor, 1248
eukaryotic cell, 1056
eukaryotic elongation factor 1A1 (eEF1A1), 1293
eukaryotic elongation factor 1A2 (eEF1A2), 1293
eukaryotic elongation factor 2 kinase (eEF2k), 284
eukaryotic initiation factor 2B (eIF2B), 1298
eukaryotic initiation factor 4E (eIF4E), 1287
eukaryotic initiation factor 4E-binding protein 1 (4E-BP1), 284
evanescent wave, 445
evolution, 12, 561, 787, 792, 796
evolutionary analysis, 762
evolutionary rate, 778
excitotoxicity, 1385, 1389
exon junction complex (EJC), 1287
exonic splicing enhancer (ESE), 756
exonuclease, 83
exosome, 83
expression profiling, 855
extracellular-signal-regulated kinase 5 (ERK5), 1254
- F**
FAAH (see fatty acid amide hydrolase)
FancJ (see Fanconi's anaemia complementation group J)
Fanconi's anaemia, 597
Fanconi's anaemia complementation group J (FancJ), 547
fatty acid amide hydrolase (FAAH), 363
fetal growth restriction, 295
fibrinogen, 329
fibrosis, 882
filopodium, 1214
fission, 1022
flavin radical, 382
flavopiridol, 627
fluorescence microscopy, 1056
fluorescence recovery after photobleaching (FRAP), 986
fMRI (see functional magnetic resonance imaging)
forensic genetics, 438
forkhead box A2 (FOXA2), 877
forkhead box P2 (FOXP2), 1263
Fourier-transform infrared (FTIR), 387
FOXA2 (see forkhead box A2)
FOXP2 (see forkhead box P2)
fragile site, 553
Fragile X mental retardation-related protein 1 (FXR1), 931
FRAP (see fluorescence recovery after photobleaching)
free fetal DNA, 460
free fetal RNA, 460
free radical, 336
frontal cortex, 1090
frontotemporal dementia (FTD), 208
FTD (see frontotemporal dementia)
FTIR (see Fourier-transform infrared)
functional divergence, 783
functional innovation, 734
functional magnetic resonance imaging (fMRI), 1080, 1085
functional orthogonality, 740
functionalized nanoparticle, 697
fungal soluble SNARE, 787
fungus, 772
fusion, 981
FXR1 (see Fragile X mental retardation-related protein 1)
- G**
G-quadruplex, 583
GABA (see γ -aminobutyric acid)
GABA receptor (see γ -aminobutyric acid receptor)
 γ -aminobutyric acid (GABA), 1317, 1338, 1355, 1407, 1412
 γ -aminobutyric acid receptor (GABA receptor), 1404
 γ -aminobutyric acid type A receptor (GABA_A receptor), 1328, 1334, 1338, 1343, 1355, 1375, 1378, 1394, 1399, 1415, 1423
 γ -aminobutyric acid type C receptor (GABA_C receptor), 1343
gamma oscillation, 1080
GCN (see general control non-derepressible)
GEN1, 519
gene duplication, 723, 734, 778
gene expression, 1248, 1261, 1276
gene knockout, 92
general control non-derepressible (GCN), 237
gene regulation, 918
gene sharing, 762
gene therapy, 1198
genetic analysis, 108
genetic disease, 796
genetics, 97, 838
genetic testing, 427
genetic variation, 1311
genome instability, 479
genome stability, 69, 910, 926
genome-wide association study (GWAS), 1276
genomic DNA, 450
genotyping, 433, 460
glia, 329
glial biology, 299
glutamate, 1317, 1347, 1385, 1389, 1423
glutamate plasticity, 1394
glutathione transferase (GST), 740
glycine, 1347, 1423
glycogen phosphorylase, 627

- glycogen synthase kinase 3 (GSK3), 1077, 1133
glycogen synthase kinase 3 β (GSK3 β), 1121
glycosylphosphatidylinositol-linked protein (GPI-linked protein), 1061
goblet cell, 877
GPI-linked protein (*see* glycosylphosphatidylinositol-linked protein)
GRAF1 (*see* GTPase regulator associated with focal adhesion kinase-1)
green fluorescent protein, 1042
growth factor, 717
growth factor receptor, 137
GSK3 (*see* glycogen synthase kinase 3)
GSK3 β (*see* glycogen synthase kinase 3 β)
GST (*see* glutathione transferase)
GTPase, 1022, 1037
GTPase regulator associated with focal adhesion kinase-1 (GRAF1), 1061
GWAS (*see* genome-wide association study)
- H**
H⁺-*myo*-inositol transporter (HMIT), 1139
H2AX (*see* histone 2AX)
haem, 373, 408
haem-copper oxidase, 392
haem oxygenase-1 (HO-1), 1237
haloarchaeon, 108
Haloflex volcanii, 133
halophile, 133
HCV (*see* hepatitis C virus)
HD (*see* Huntington's disease)
HD-PTP (*see* His domain phosphotyrosine phosphatase)
heat shock, 123
heat-shock protein 60 (Hsp60), 46
Hel308, 74
HeLa cell, 914
helicase, 7, 69, 74, 83, 547
 α -helix, 1037
heparan sulfate proteoglycan, 1201
heparin-binding domain, 1201
hepatitis C virus (HCV), 986
heritability, 814
heterochromatin, 569
high-resolution imaging, 1014
high-resolution melting (HRM), 433
hippocalcin, 1359
hippocampal pyramidal neuron, 1334
hippocampus, 1323, 1359, 1364, 1419
His domain phosphotyrosine phosphatase (HD-PTP), 146
histone 2AX (H2AX), 897
histone methylation, 897
HIV, 185
HIV-1, 181
HMIT (*see* H⁺-*myo*-inositol transporter)
HO-1 (*see* haem oxygenase-1)
Holliday junction, 519
Holliday junction dissolution, 553
homeostatic control of genes, 1287
homologous recombination, 88, 102, 597
hopping, 343
horizontal gene transfer, 723, 792 (*see also* lateral gene transfer)
- HRM (*see* high-resolution melting)
Hsp60 (*see* heat-shock protein 60)
human vitreous fluid, 1207
huntingtin, 1270
Huntington's disease (HD), 323, 1270
hydride, 387
hydride transfer, 413
hydrogel, 660
hydrogen bond, 727
hydrogen tunnelling, 333, 336
hydrogen tunnelling reaction, 349
hydroxylation, 373
hyperexcitability, 1419
hyperthermophile, 36, 69, 92, 123
hyperthermophilic archaeon, 79
hypoxanthine, 65
hypoxia, 284, 1221
- I**
identity testing, 438
idiopathic pulmonary fibrosis, 849
Ignicoccus, 127
IL-1 β (*see* interleukin 1 β)
IL-4 (*see* interleukin 4)
IL-13 (*see* interleukin 13)
IL-13R α 1 (*see* interleukin 13 receptor α -chain 1)
imaging, 329
immunoassay, 697
immunoglobulin superfamily, 751
IMPase (*see* inositol monophosphatase)
indoleamine 2,3-dioxygenase, 408
inducible nitric oxide synthase inhibitor (iNOS inhibitor), 886
inflammation, 805, 830, 863
inflammatory marker, 814
influenza, 811
inhibitor design, 363
initiation factor, 227
innate immunity, 811
inner nuclear membrane, 242
inorganic material, 687
iNOS inhibitor (*see* inducible nitric oxide synthase inhibitor)
inositol, 1133
inositol depletion, 1099, 1110
inositol-depletion theory, 1077
inositol monophosphatase (IMPase), 1121
inositol phosphate, 1099
insulin, 223, 682
insulin-like growth factor, 882
insulin resistance, 981
integration of sample processing and PCR, 424
integrin, 849
inter-hemispheric connectivity, 1096
interleukin, 830
interleukin 1 β (IL-1 β), 303
interleukin 4 (IL-4), 873
interleukin 13 (IL-13), 873, 877
interleukin 13 receptor α -chain 1 (IL-13R α 1), 873
intermediate trapping, 378
intracellular trafficking, 1184
invasion, 511
in vivo imaging, 830
ion beam, 893
ion channel, 318, 1347
- iron-sulfur-cluster-binding domain, 547
ischaemia, 1198, 1218, 1385
ischaemic disease, 1221
- J**
jumping, 343
- K**
KatG (*see* catalase/peroxidase)
Kea1 (*see* kinase-associated endopeptidase 1)
KEOPS (*see* kinase, endopeptidase and other proteins of small size)
kinase, 971
kinase-associated endopeptidase 1 (Kae1), 29
kinase, endopeptidase and other proteins of small size (KEOPS), 29
kinesin, 961
kinesin-5, 1045
kinesin-13, 1007
kinetic isotope effect, 336
kinetics, 333
kinetochore, 971
kinetochore-microtubule attachment, 976
knockout mouse, 1121
Ku, 539
- L**
LAM (*see* lymphangioliomyomatosis)
lamotrigine, 1080
language, 1263
laser desorption, 905
latent transcription factor, 242
lateral gene transfer, 772 (*see also* horizontal gene transfer)
lateral self-organization, 955
leptin, 1364
lesion, 1323
leucine, 223
leukostasis, 1201
ligand-gated ion channel, 1343, 1419
light microscopy, 1042
lineage-specific biology, 734
linear ubiquitin, 937
lipid A, 863
lipid droplet, 986, 991, 1050
lipid droplet assembly, 981
lipid raft, 1056
lipopolysaccharide, 863
lithium, 1077, 1090, 1104, 1115, 1121, 1133
localization, 289
local structural environment, 727
longevity, 1050
long-period fibre grating (LPFG), 445
long-term potentiation (LTP), 303, 1334, 1375, 1412
LPFG (*see* long-period fibre grating)
LTP (*see* long-term potentiation)
lung, 805, 855
lung development, 838
lung disease, 838, 886
lung inflammatory disease, 811
lymphangiogenesis, 1198
lymphangioliomyomatosis (LAM), 259

- lysine linkage, 937
lysosome, 151, 178, 1019
- M**
macrophage, 185
magnetic circular dichroism, 368
magnetic field effect, 358
MALDI (see matrix-assisted laser-desorption ionization)
malt whisky, 1423
mammalian evolution, 734
mammalian target of rapamycin (mTOR), 213, 223, 227, 248, 259, 265, 284, 289, 291, 295
mammalian target of rapamycin complex (mTORC), 217
mammalian target of rapamycin complex 1 (mTORC1), 278
MAP (see microtubule-associated protein)
MAPK (see mitogen-activated protein kinase)
marker gene, 92
mass spectrometry, 905
mathematical model, 914
matrix-assisted laser-desorption ionization (MALDI), 905
MBA (see membrane-bound ATPase associated with various cellular activities)
MBF1 (see multiprotein bridging factor 1)
MBNL1 (see muscleblind-like 1)
MCM (see minichromosome maintenance)
MDA (see multiple displacement amplification)
MDC1 (see mediator of DNA-damage checkpoint 1)
MDM2 (see murine double minute 2)
Mec1, 495
mediator of DNA-damage checkpoint 1 (MDC1), 897
medium spiny neuron, 323
membrane, 161
membrane antigen, 1014
membrane-bound ATPase associated with various cellular activities (MBA), 118
membrane fusion, 787
membrane lipid order, 1056
membrane order, 955
membrane protein, 392, 400, 643
membrane protrusion, 966
membrane trafficking, 1032
membrane transporter, 295
Mendelian disease, 1276
metabolic reconstruction, 792
metabolism, 278, 291, 295, 511
metal surface, 697
metazoan SNARE, 787
Methanococcus maripaludis, 1
methyl pyruvate, 253
MHC class I, 178
microarray, 855
microbiology, 454
microfluidic device, 424
microglial activation, 303
microribonucleoprotein (miRNP), 931
microRNA (miRNA), 918, 1270, 1278
microscopy, 914
microtubule, 961, 991, 1002
microtubule assembly and disassembly regulation, 1007
microtubule-associated protein (MAP), 997, 1007
microtubule-dependent transport, 1066
microtubule dynamics, 1007
microtubule plus end, 1002
migraine, 1126
migration, 961
mineral, 687
mineralization, 665
miniaturized device, 424
minichromosome maintenance (MCM), 1, 7
minisatellite, 589
minisequencing, 454
MIP-synthase (see myo-inositol-1-phosphate synthase)
miR-21, 918
miRNA (see microRNA)
miRNP (see microribonucleoprotein)
mitochondrion, 1385, 1389
mitogen-activated protein kinase (MAPK), 237, 273, 824, 1254
mitosis, 976
mitotic checkpoint, 910, 971
mitotic commitment, 273
molecular epidemiology, 527
molecular evolution, 547
molecular model, 583
molecular motor, 1045
monastrol, 1045
mood, 313
motility, 991, 1243
motor neuron disease, 1293
mRNA, 227
mRNA localization, 1066
MS (see multiple sclerosis)
MSCT (see multi-slice computed tomography)
mTOR (see mammalian target of rapamycin)
mTORC (see mammalian target of rapamycin complex)
mTORC1 (see mammalian target of rapamycin complex 1)
MUC5AC, 877
mucin, 868
multicellularity, 787
multidomain protein, 751
multimolecular assembly, 1056
multiple displacement amplification (MDA), 450
multiple sclerosis (MS), 329
multiplex screening, 454
multiprotein bridging factor 1 (MBF1), 52
multi-slice computed tomography (MSCT), 814
multivesicular body (MVB), 143, 146, 151, 156, 167, 173, 178, 195, 208, 1019
murine double minute 2 (MDM2), 511
muscleblind-like 1 (MBNL1), 1281
mutagenesis, 838, 1343
mutant model, 308
mutation detection, 433, 454
mutation scanning, 433
MVB (see multivesicular body)
Mycobacterium tuberculosis, 333
myogenesis, 1287
myosin VI, 966
myotonic dystrophy type 1 (DM1), 1281
myo-inositol, 1099
myo-inositol-1-phosphate synthase (MIP-synthase), 1139
- N**
Nanoarchaeum, 127
nanobiotechnology, 643
nanocrystalline electrode, 368
nanomanipulation, 702
nanoparticle, 441, 665, 682
nanopipette, 702
nanosensor, 702
nanostructure, 660
nanostructure assembly, 653
nanotechnology, 643
NCS (see neuronal calcium sensor)
necrosis, 1050
Nedd4 (see neural-precursor-cell-expressed developmentally down-regulated 4)
NEDDylation, 937
negative regulator, 811
neovascularization, 1218
N-ethyl-*N*-nitrosourea (ENU), 838
neural blockade, 318
neural crest, 1228
neural-precursor-cell-expressed developmentally down-regulated 4 (Nedd4), 181
neuregulin-1, 308
neurite outgrowth, 1027
neurodegeneration, 167, 299, 303, 1027, 1198, 1293
neurodevelopmental disorder, 1263
neuron, 200, 1171, 1228
neuronal calcium sensor (NCS), 1359
neuronal cell biology, 1110
neuronal disease, 1261
neuronal dysfunction, 1270
neuron-glia communication, 1407
neuron-restrictive silencer element (NRSE), 1375
neuropilin, 1228
neuroplasticity, 318
neuroprotection, 1198
neuroregeneration, 299
neutrophilic respiratory disease, 830
NHEJ (see non-homologous end-joining)
nitrate stress, 886
nitric oxide, 368, 392, 886, 1243
nitric oxide synthase (NOS), 333, 373
nitrite reductase, 368
nitrous oxide, 392
NMD (see nonsense-mediated mRNA decay)
NMDA (see *N*-methyl-*D*-aspartate)
NMDA receptor (see *N*-methyl-*D*-aspartate receptor)
N-methyl-*D*-aspartate (NMDA), 1317, 1323, 1407
N-methyl-*D*-aspartate (NMDA receptor), 1198, 1347, 1364, 1369, 1394, 1423
non-homologous end-joining (NHEJ), 539
non-invasive prenatal diagnosis, 460

- nonsense-mediated mRNA decay (NMD), 1287
- noradrenaline, 318
- NOS (see nitric oxide synthase)
- Notch, 137, 1233
- Notch intracellular domain, 1221
- Notch signalling, 1221
- NRSE (see neuron-restrictive silencer element)
- nuclear-spin polarization, 382
- nucleic acid, 471
- nucleic acid amplification test, 419
- nucleic acid measurement, 466
- nucleic acid sequence analysis, 441
- nucleosome, 756
- nutrient sensing, 237, 242
- nutrient stress, 273
- nutrient-transporter protein, 253
- O**
- oedema, 1161
- oligonucleotide, 88
- oligophrenin, 1061
- oncomir, 918
- optical device, 643
- optical fibre, 445
- optical spectroscopy, 441
- ORC (see origin of replication)
- origin of replication (ORC), 7
- orphan gene, 778
- OSGEP (see O-sialoglycoprotein endopeptidase)
- O-sialoglycoprotein endopeptidase (OSGEP), 29
- oxidative phosphorylation, 707
- oxidative stress, 819, 1198, 1385
- 2-oxoglutarate, 291
- oxygen-DNA interaction, 466
- P**
- P2X purinoreceptor, 1407
- p53, 511
- p53-binding protein 1 (53BP1), 897
- p53-related protein kinase (PRPK), 29
- p85, 615
- p110, 615
- pain, 299, 318, 1328
- PAR (see protease-activated receptor)
- parasite, 792
- Parkinson's disease, 692
- PAT [see perilipin/adipose differentiation-related protein (ADRP)/47 kDa tail-interacting protein (TIP47) protein; proton-assisted amino acid transporter]
- pathogenesis, 167, 819
- pathophysiology, 308
- patterning, 1233
- PCNA (see proliferating-cell nuclear antigen)
- PCR, 438
- PCR-based mutation detection, 427
- PDK1 (see phosphoinositide-dependent kinase 1)
- penta-EF-hand, 190
- peptide-based nanostructure, 653
- peri-infarct cortex, 1412
- perilipin/adipose differentiation-related protein (ADRP)/47 kDa tail-interacting protein (TIP47) protein (PAT protein), 991
- perirhinal cortex, 1359
- peroxisome, 1050
- personalized medication, 424
- phage-shock stress response, 762
- PHD (see prolyl hydroxylase domain-containing protein)
- phosphatase, 660, 976
- phosphatidylinositol, 1115
- phosphatidylinositol 4,5-bisphosphate, 1110
- phosphatidylinositol 3,4,5-trisphosphate, 1110
- phosphoinositide, 1099, 1139
- phosphoinositide-dependent kinase 1 (PDK1), 217
- phosphoinositide 3-kinase (PI3K), 173, 217, 265, 615
- phosphoinositide 3,4,5-trisphosphate, 615
- phospholipase, 1104
- phospholipase C γ 1 (PLC γ 1), 1189
- phosphoribosyl pyrophosphate synthetase (Prs), 1115
- phosphorylation, 561, 627, 723, 937
- photosynthesis, 400
- phylogenetic analysis, 772
- phylogenetics, 792
- PI3K (see phosphoinositide 3-kinase)
- PIP (see proliferating-cell nuclear antigen-interacting protein)
- PKB (see Akt/protein kinase B)
- placenta, 295
- plasmid, 92, 97
- plasmid DNA, 893
- PLC γ 1 (see phospholipase C γ 1)
- plus end tracking protein (+TIP), 997
- Polo kinase, 273
- polyadenylation, 83
- polymerase, 539
- polyplex, 713
- POR (see phytylchlorophyllide oxidoreductase)
- positive selection, 783
- post-stroke recovery, 1412
- pre-eclampsia, 1237
- prn1, 42
- proliferating-cell nuclear antigen (PCNA), 605
- proliferating-cell nuclear antigen-interacting protein (PIP), 79
- proline-rich domain, 190
- prolyl hydroxylase domain-containing protein (PHD), 291
- prostanoid, 1179
- protease-activated receptor (PAR), 1179
- protein 4.1, 796
- protein-coupled motion, 349
- protein domain, 751
- protein dynamics, 349, 354
- protein engineering, 717
- protein evolution, 723, 727, 751, 756, 783
- protein film voltammetry, 368, 707
- protein folding, 671, 682
- protein function, 745, 756
- protein interaction network, 768
- protein kinase, 213, 227, 627, 1369
- protein kinase B (see Akt/protein kinase B)
- protein kinase inhibitor, 627
- protein network, 723, 745
- protein-protein interaction, 768
- protein sequence, 1276
- protein sorting, 151, 204
- protein structure, 723, 727
- protein synthesis, 227, 1298
- protein tyrosine phosphatase 1B (PTP1B), 173
- proteolysis, 1193
- proteomics, 1, 868
- protylchlorophyllide oxidoreductase (POR), 354, 387
- proton-assisted amino acid transporter (PAT), 248
- proton transfer, 392
- PRPK (see p53-related protein kinase)
- Prs (see phosphoribosyl pyrophosphate synthetase)
- Pseudomonas aeruginosa*, 863
- psychopharmacology, 299
- PTP1B (see protein tyrosine phosphatase 1B)
- puberty, 1378
- purple bacterium, 400
- Pyrococcus furiosus*, 79
- Q**
- QM/MM (see quantum mechanics/molecular mechanics)
- qPCR (see quantitative PCR)
- quantification, 424
- quantitative PCR (qPCR), 450
- quantitative trait, 1415
- quantum mechanical tunnelling, 349
- quantum mechanics/molecular mechanics (QM/MM), 333, 363
- quasi-species, 740
- quiescence, 931
- R**
- Rab6-effector complex, 1037
- Rab6-interacting protein 1 (Rab6IP1), 1037
- Rab6IP1 (see Rab6-interacting protein 1)
- Rab6 vesicle, 1066
- Rab7, 1027
- Rab11-family interacting protein (Rab11-FIP), 1032
- Rab11-FIP (see Rab11-family interacting protein)
- Rab25, 1032
- Rab-coupling protein (RCP), 1032
- Rab protein, 1027
- Rad1, 495
- Rad9, 897
- Rad51, 102
- RadA, 102
- RadB, 102
- radiation damage, 893
- radical pair, 358
- radical-pair mechanism, 382
- radiosensitivity, 569

- Rag (see Ras-related GTPase)
 rapid chemical quench, 336
 raptor (see regulatory associated protein of mTOR)
 Ras-related GTPase (Rag), 248, 289
 RCP (see Rab-coupling protein)
 RDL receptor, 1404
 reaction centre, 400
 reaction mechanism, 363
 read-ahead recognition, 65
 real-time data acquisition, 471
 real-time PCR, 427, 460
 RecA, 102
 receptor, 1317
 receptor-activated proteolysis, 242
 receptor tyrosine kinase (RTK), 717, 1193
 recombination, 74, 97, 589
 RecQ helicase, 553
 recycling endosome, 1032
 regeneration, 1218
 regulatory associated protein of mTOR (raptor), 223
 repair, 74
 3' repair exonuclease 1 (TREX1), 535
 replication, 42, 74
 replication fork, 605
 replication machinery, 108
 replisome, 108
 repressor element 1-silencing transcription factor (REST), 1270
 resolvase, 519
 REST (see repressor element 1-silencing transcription factor)
 retinal disorder, 1201
 retrovirus, 195
 reward, 313
 rewiring, 768
 Rheb, 217, 223, 289
 rheumatoid arthritis, 1207
 Rho GTPase, 1243
Rhodobacter, 400
 ribosome profiling, 1278
 risk gene, 308
 RNA, 1261
 RNA degradation, 83
 RNA editing, 1399
 RNA gain-of-function, 1281
 RNA polymerase, 12, 18
 RNomics, 133
 Robo4, 1214
 RTK (see receptor tyrosine kinase)
Saccharomyces cerevisiae, 242, 1115
- S**
 SALDI (see surface-assisted laser-desorption ionization)
 SAXS (see small-angle X-ray scattering)
 scanning-ion conductance microscopy (SICM), 702
 schizophrenia, 308, 1328
 secondary bacterial pneumonia, 811
 segregation, 971
 seizure, 1419
 self assembly, 713
 semaphorin, 1171, 1228
 senescence, 882
 sEng (see soluble endoglin)
 sensor, 643
 sequence conservation, 762
 sequence variant, 433
 sequencing, 427
 SERRS (see surface-enhanced resonance Raman scattering)
 sFlt-1 (see soluble Fms-like tyrosine kinase-1)
 Sgs1, 495
 short-patch repair, 577
 short tandem repeat (STR), 438
 shuttle vector, 42
 SICM (see scanning-ion conductance microscopy)
 signal transducer and activator of transcription 6 (STAT6), 877
 signal transduction, 873, 1167, 1254
 signalling, 1193, 1369
 silicon cell model, 58
 silk-inspired polymer, 677
 silkworm silk, 677
 single-crystal spectroscopy, 378
 single molecule, 702
 single-nucleotide polymorphism (SNP), 438, 454, 471, 527, 1415
 single-nucleotide primer extension (SNUPE), 454
 single-strand break repair, 577
 SIRV2 (see *Sulfolobus islandicus* rod-shaped virus 2)
 sister-chromatid exchange, 589
 SLC36A1 (see solute carrier 36A1)
 sliding, 343
 Slx, 495
 small-angle X-ray scattering (SAXS), 161
 small G-protein, 1061
 small-molecule kinase inhibitor, 265
 small non-coding RNA, 133
 SMIT (see sodium-*myo*-inositol transporter)
 smoking, 814
 SNAP-23 (see 23 kDa synaptosome-associated protein)
 SNARE (see soluble *N*-ethylmaleimide-sensitive fusion protein-attachment protein receptor)
 SNP (see single-nucleotide polymorphism)
 SNUPE (see single-nucleotide primer extension)
 sodium-*myo*-inositol transporter (SMIT), 1121, 1139
 solid-supported bilayer lipid membrane, 707
 soluble endoglin (sEng), 1237
 soluble Fms-like tyrosine kinase-1 (sFlt-1), 1237
 soluble *N*-ethylmaleimide-sensitive fusion protein-attachment protein receptor (SNARE), 981
 solute carrier 36A1 (SLC36A1), 248
 somatic hypermutation, 561
 spatial learning, 1323
 spectrin, 796
 speech, 1263
 spherulite, 682
 sphingolipid, 955
 spider silk, 677
 spindle, 971
 spine, 1389
 spinocerebellar ataxia, 577
 splicing, 756
 SPR (see surface plasmon resonance)
 sprouting, 1233
 SPS-sensing pathway, 242
 sputum, 868
 SREBP (see sterol-regulatory-element-binding protein)
 STAT6 (see signal transducer and activator of transcription 6)
 Staufen1, 1287
 STED (see stimulated emission depletion)
 steric stabilization, 713
 steroid, 824
 sterol-regulatory-element-binding protein (SREBP), 278
 stiffness, 660
 stimulated emission depletion (STED), 1042
 STIV (see *Sulfolobus* turreted icosahedral virus)
 STR (see short tandem repeat)
 stress, 284
 stress response, 123
 striatum, 313
 structure–function relationship, 745
 Stu2, 1002
 sub-Saharan Africa, 419
 subunit specificity, 1338
Sulfolobus, 36, 42, 97
Sulfolobus acidocaldarius, 88
Sulfolobus islandicus, 92
Sulfolobus islandicus rod-shaped virus 2 (SIRV2), 665
Sulfolobus solfataricus, 58, 114, 118, 123
Sulfolobus turreted icosahedral virus (STIV), 114
 SUMOylation, 937
 super-resolution analysis method, 1042
 supramolecular complex, 1056
 surface-assisted laser-desorption ionization (SALDI), 905
 surface capture, 471
 surface-enhanced resonance Raman scattering (SERRS), 441, 697
 surface plasmon resonance (SPR), 697
 surgery, 318
 switch, 643
 synapse inhibition, 1355
 synaptic plasticity, 1278, 1323, 1359, 1364, 1369, 1375
 23 kDa synaptosome-associated protein (SNAP-23), 981
 α -synuclein, 692
 syntaxin-5, 981
 systematic random sampling, 914
 systems biology, 58
- T**
 tandem repeat, 583
 target of rapamycin (TOR), 232, 237, 273
 tau protein, 1007
 Tel1, 495
 telomere, 583
 telomere capping, 589
 temperature variation, 58
 temporal lobe epilepsy, 1419
 tetrahedral intermediate, 363

- tetraspanin, 185
 TFE (see transcription factor E)
 TGF β (see transforming growth factor- β)
 theophylline, 824
 theoretical modelling, 373
 therapeutic agent, 213
 therapeutic angiogenesis, 1221
 thermosome, 46
Thermotoga maritima, 349
 thymosin β 4, 1218
 tight junction, 329
 time-resolved measurement, 358
 +TIP (see plus end tracking protein)
 tissue injury, 882
 tissue-specific splicing, 1311
 TLR (see Toll-like receptor)
 TMS (see transcranial magnetic stimulation)
 TNFR1 (see tumour necrosis factor α receptor 1)
 TOG (see tumour overexpressed gene)
 Toll-like receptor (TLR), 863
 tonic current, 1378
 topoisomerase, 69
 TOR (see target of rapamycin)
 toxin-antitoxin locus, 123
 trafficking, 1364
 transceptor, 237
 transcranial magnetic stimulation (TMS), 1080
 transcription, 12, 18, 52, 1198, 1375
 transcription factor, 1261, 1263
 transcription factor E (TFE), 18
 transforming growth factor- β (TGF β), 849, 882
 transition state, 363
 translation, 284, 1261
 translational activation, 931
 translation elongation, 1293
 translation fidelity, 52
 transmembrane region, 1399
 transplantation, 323
 transporter, 127
 transposable element, 778
 TREX1 (see 3' repair exonuclease 1)
 trisomy 21, 460
 tryptophan, 408
 tryptophan 2,3-dioxygenase, 408
 tryptophan radical, 382
 TSC (see tuberous sclerosis complex)
 Tsg101 (see tumour susceptibility gene 101)
 tuberculosis, 419
 tuberous sclerosis complex (TSC), 217, 223, 259
 tubulin sheet, 997
 tumour necrosis factor α receptor 1 (TNFR1), 200
 tumour overexpressed gene (TOG), 1002
 tumour suppression, 511
 tumour suppressor, 137
 tumour susceptibility gene 101 (Tsg101), 195, 204
 twin, 814
 two-colour experiment, 471
- U**
 ubiquinone, 707
 ubiquitin, 137, 161
 ubiquitination, 597, 937, 1189
 unlabelled biomolecule, 445
 unnatural amino acid, 1343
 uracil, 65
 uracil-DNA glycosylase, 79
 UV-cross-linking, 1278
 UV damage, 36
 UV spectrophotometry, 466
- V**
 vacuolar protein sorting (Vps), 204
 vacuolar protein sorting 4 (Vps4), 118, 143, 156, 195
 vacuolar protein sorting 34 (Vps34), 232
 valproic acid, 1077, 1099, 1104, 1115, 1126
 VAMP7 (see vesicle-associated membrane protein 7)
 vanishing white matter (VWM), 1298
 VAPA (see vesicle-associated membrane protein-associated protein A)
 vascular endothelial growth factor (VEGF), 805, 1161, 1167, 1171, 1184, 1193, 1198, 1221, 1228, 1237
 vascular endothelial growth factor-A (VEGF-A), 1201
 vascular endothelial growth factor E (VEGF-E), 1161
 vascular endothelial growth factor receptor (VEGFR), 1201, 1233
 vascular endothelial growth factor receptor 1 (VEGFR-1), 1161
 vascular endothelial growth factor receptor 2 (VEGFR-2), 1189
 vasculogenesis, 1207
 VDEPT (see virus-directed enzyme prodrug therapy)
 VEGF (see vascular endothelial growth factor)
 VEGF-A (see vascular endothelial growth factor A)
 VEGF-E (see vascular endothelial growth factor E)
 VEGFR (see vascular endothelial growth factor growth factor)
 VEGFR-1 (see vascular endothelial growth factor growth factor 1)
- W**
 wasted mouse, 1293
 water tracing, 713
 Wnt, 1133
- X**
 X-ray crystallography, 378
Xenopus microtubule-associated protein 215 (XMAP215), 1002
 xeroderma pigmentosum complementation group D (XPD), 547
 xeroderma pigmentosum complementation group F (XPF), 495
 xeroderma pigmentosum complementation group G (XPG), 519
 XMAP215 (see *Xenopus* microtubule-associated protein)
 XPD (see xeroderma pigmentosum complementation group D)
 XPF (see xeroderma pigmentosum complementation group F)
 XPG (see xeroderma pigmentosum complementation group G)
- Y**
 yeast, 273
- Z**
 zebrafish, 830
 zif268, 1375
- VEGFR-2 (see vascular endothelial growth factor growth factor 2)
 vesicle-associated membrane protein 7 (VAMP7), 1019
 vesicle-associated membrane protein-associated protein A (VAPA), 1090
 vesicle formation, 1022
 vesicle trafficking, 787, 1037, 1072
 VIBES (see Vulnerability to Bipolar Disorders Study)
 viral protein, 986
 virological synapse, 185
 virus, 195, 665
 virus assembly, 185, 986
 virus budding, 181
 virus-directed enzyme prodrug therapy (VDEPT), 413
 Vps (see vacuolar protein sorting)
 Vps4 (see vacuolar protein sorting 4)
 Vps34 (see vacuolar protein sorting 34)
 Vulnerability to Bipolar Disorders Study (VIBES), 1085
 VWM (see vanishing white matter)