

Cellular dry weight, 158  
 Cellular macromolecules, 26  
 Cellular maintenance, 166  
 Cellular metabolism, 311  
 Cellulase, 94-95  
     and koji fermenter, 277  
 Cellulose, 38, 54  
 Central dogma of biology, 105-7  
 Centrifugal Podbielniak extractors, 345, 347  
 Centrifugation, 336-40  
 Centrifugation coefficient, 339  
 Centrosome, 387  
 Cer locus, 440  
 Chain, Ernst, 4  
 Chaperones, 115  
 Charged *t*-RNA, 115  
 Chelating agents, 51  
 Chemical environment, monitoring/control of, 309-10  
 Chemical oxygen demand (COD), 489  
 Chemical synthesis, 232  
 Chemical waste treatment, 489  
 Chemoautotrophs, 49, 152  
 Chemostat, 190-91  
     ideal, 191-98  
     as a tool, 198  
 Chemostat culture:  
     deviations from ideality, 198-99  
     mutations in, 198  
 Chemostat with recycle, 248-50  
 Chemotaxis, 127  
 Chirality, 93  
 Chloride (Cl<sup>-</sup>), 51  
 Chloroplasts, 22, 151  
 Cholesterol, 40  
 Chondrocyte culture for cartilage replacement, 465-66  
 Chromatography, 365-75  
     adsorption chromatography (ADC), 366-67  
     affinity chromatography (AFC), 366-67, 370-71  
     chromatography column, output from, 371-72  
     defined, 365  
     displacement chromatography, 366  
     elution chromatography, 365-66  
     gel-filtration (molecular sieving) chromatography, 366-67, 369-70  
     high-pressure liquid chromatography (HPLC), 366-67  
     hydrophobic chromatography (HC), 366-67  
     immobilized-metal-affinity chromatography (IMAC), 371  
     ion-exchange chromatography (IEC), 366-67  
     liquid-liquid partition chromatography (LLC), 366-67  
     scale-up, 273-74  
     single chromatographic separation process, 367  
 Cilia, 22, 25, 387  
 Ciliates, 22, 25  
 Cisternae, 386  
 Citric acid, 51  
 Citric acid cycle, 137  
 Citric acid production, 524-26  
 Classification of enzymes, 58  
 Clean-in-place (CIP) technology, 291  
 Clones, 232  
 CMRL 1066, 394  
 Coagulation, 340-41  
 Cobalt (Co), 51  
 Coccus, 12  
 Codons, 107, 113-14  
     nonsense, 113  
 Coenzymes/cofactors, 59-60  
 Collagen, 386  
 Colony-forming units (CFU), 156-57  
 Commensalism, 476, 478  
 Commercial tissue culture processes, 465-66  
 Competent cells, 227  
 Competition, 477  
 Complementary DNA, 232  
 Complex enzyme kinetic models:  
     allosteric enzymes, 67  
     inhibited enzyme kinetics, 67-75  
 Complex glycoforms, 119  
 Complex media, 52, 54  
 Complex pathway regulation, examples of, 129-31  
 Concentration polarization, 357  
 Concerted feedback inhibition, 124  
 Conditional mutants, 225, 241  
 Conidia, 22-23  
 Conjugation, 228-29, 241  
     defined, 225  
 Constitutive exocytosis pathway, 117  
 Constitutive gene products, 121  
 Contact inhibition, 389  
 Continuous cell lines, 389, 428  
 Continuous culture:  
     cell growth in, 189-99  
     chemostat, 190-91  
     ideal, 191-98