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A thermodynamically unfavorable reaction can be

ATP hydrolysis drives metabolism by shifting the

15.2 ATP Is the Universal Currency of Free

driven by a favorable reaction

Energy in Biological Systems

ATP hydrolysis is exergonic

equilibrium of coupled reactions

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Interconnecting Reactions

requiring reactions

Metabolism consists of energy-yielding and energy-

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	Toxicity can limit drug effectiveness	1040
36	5.2 Drug Candidates Can Be Discovered by	
	erendipity, Screening, or Design	1041
00	Serendipitous observations can drive drug	
	development	1041
	Natural products are a valuable source of drugs and drug leads	1043
	Screening libraries of synthetic compounds expands the opportunity for identification of drug leads	1044
	Drugs can be designed on the basis of three-dimensional structural information about their targets	1046
	.3 Analyses of Genomes Hold Great Promise	
for	Drug Discovery	1048
	Potential targets can be identified in the human proteome	1048
	Animal models can be developed to test the validity of potential drug targets	1049
	Potential targets can be identified in the genomes of pathogens	1050
	Genetic differences influence individual responses to drugs	1050
	36.4 The Clinical Development of Drugs Proceeds Through Several Phases	
	Clinical trials are time consuming and expensive	1052
The evolution of drug resistance can limit the uti of drugs for infectious agents and cancer	The evolution of drug resistance can limit the utility of drugs for infectious agents and cancer	1053
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