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Title : Science course unit 186
(Cells in action. Title on script)

Contributors : Michael Pentz
Stephen Rose
Christian de Duve

Producer: Nat Taylor

CU S100/16
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Seq.	Time	Footage	Sequence List	Sound Cue
	47"		M. Pentz introduces the programme.	
	1'56"		S. Rose introduces an experiment which studies rate limiting enzymes. Isocitric dehydrogenase will be used. Rose explains the experiment.	574.19258
1.	3'30"		S. Rose with spectrophotometer. He starts the enzyme reaction and places the flask into the spectrophotometer. This is coupled to a pen recorder. The slope of the graph indicates the rate of enzyme reaction.	621.381542
	3'59"		The same enzyme reaction is measured with the addition of:- 1. ATP 2. AMP These reactions are observed on the pen recorder graph.	
	7'57"		S. Rose compares the curves of the three reactions and discusses their significance.	the chemistry of life.
	8'44"		M. Pentz with large photograph of cells under magnification. Lysosomes can be seen.	Now in the rest .....
2.	9'39"		Shot of electron micrograph of several lysosomes Pentz gives a brief account of the history of knowledge about lysosomes as an introduction to S. Rose who will discuss their function.	574.8734

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Continuation

Seq.	Time	Footage	Sequence List	Sound Cue
	11'02		S. Rose explains that enzymes found in the cell could destroy it unless controlled. How are they controlled? Rose introduces Prof. Christian de Duve who will explain how the function of lysosomes was discovered.	
	12'44"		Christian de Duve briefly tells of the research which led to the discovery of the masking of enzyme activity in a new cell particle.	
2.	13'43"		S. Rose tells how de Duve performed his experiment using a homogeniser and a centrifuge. Shot of a row of test tubes containing the sub-cellular fractions obtained.	de Duve, Christian × Duve, Christian de
	15'00"		Only one of the fractions contained acid phosphatase (a digestive enzyme). Shot of the acid phosphatase fraction under the electron microscope. Lysosomes are seen in great quantity. Commentary by de Duve.	... here they are.
3.	18'56"		S. Rose with a large diagram of a cell in which the sub-cellular particles are shown. He explains why digestive enzymes don't digest the cell itself (lysosomes membrane). He discusses lysosome function of digesting worn out organelles and shows an electron micrograph of a mitochondria organelle being digested by a lysosome. Rose also discusses lysosome role of digesting unwanted tissue in the organism. He cites tadpole tail as an example. Several shots of tadpole developing into a frog.	That's all very 574.8761
	19'54"		S. Rose discusses lysosomes as part of the body's defense mechanism.	
	20'52"		Shot of a lysosome rich white blood cell under magnification. The cell is shown digesting a bacterium. Action of the lysosomes can be seen.	591.82
	21'12"		Rose explains the danger of lysosomes bursting in the cell.	

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Continuation

Seq.	Time	Footage	Sequence List	Sound Cue
3.	22'31"		Shot of lysosomes in lung cells ingesting dust particles. The dust particles cause the lysosome to burst. Shot of burst lysosome in cell.	
	23'12"		Rose sums up. Credits.	