

PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

## Getting to the heart of mitochondrial function

ArticleInfo		
ArticleID	:	4704
ArticleDOI	:	10.1186/gb-spotlight-20030220-01
ArticleCitationID	:	spotlight-20030220-01
ArticleSequenceNumber	:	56
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	2
ArticleHistory	:	RegistrationDate : 2003-2-20 OnlineDate : 2003-2-20
ArticleCopyright	:	BioMed Central Ltd2003
ArticleGrants	:	
ArticleContext	:	130594411

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Mitochondrial dysfunctions are associated with a wide range of [human diseases](#). In an Advanced Online Publication in [Nature Biotechnology](#) Steven Taylor and colleagues at [MitoKor](#) in California, describe characterization of the mitochondrial proteome from human hearts (*Nature Biotechnology*, 18 February 2003, doi:10.1038/nbt793). The [resulting database](#) contains information on 615 distinct proteins and is the largest single-organelle proteome to be reported to date. Mitochondrial proteins were purified by sucrose-gradient density fractionation followed by one-dimensional electrophoresis and high-throughput peptide-mass fingerprinting. The protein pI values ranged from 4-11 and most proteins were smaller than 150 kDa. Around one fifth of the proteins are of unknown function. The known proteins include most of the proteins involved in the oxidative phosphorylation machinery. Others include transporter and channel proteins, as well as those involved in the synthesis of RNA, DNA and proteins. There are also several proteins from known metabolic pathways and components of the programmed cell death machinery.

## References

1. Clinical mitochondrial genetics.
2. *Nature Biotechnology*, [<http://www.nature.com/naturebiotechnology>]
3. MitoKor, [<http://www.mitokor.com>]
4. MitoKor Index of files, [<http://www.mitokor.com/files/>]