



Common errors in textbook descriptions of muscle fiber size in nontrained humans

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Classification of fiber types

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Abstract

Electromyography (EMG) is a non-invasive technique used to study muscle activity. The classification of fiber types is essential for understanding muscle function. This study examines the classification of fiber types based on ATPase activity, morphology, and motor unit characteristics. The results show that fiber types are classified into I, IIA, IIB, and F. The classification is based on the presence of ATPase, the number of motor units, and the morphology of the fibers. The results show that fiber types are classified into I, IIA, IIB, and F. The classification is based on the presence of ATPase, the number of motor units, and the morphology of the fibers.

Keywords: ATPase, classification, morphology, motor unit, skeletal muscle

Introduction

The classification of fiber types is essential for understanding muscle function. This study examines the classification of fiber types based on ATPase activity, morphology, and motor unit characteristics. The results show that fiber types are classified into I, IIA, IIB, and F. The classification is based on the presence of ATPase, the number of motor units, and the morphology of the fibers. The results show that fiber types are classified into I, IIA, IIB, and F. The classification is based on the presence of ATPase, the number of motor units, and the morphology of the fibers.

I. M.	I	IIA	IIB	IIA	IIB	I	IIA	IIB	I	IIA	IIB	I	IIA	IIB
4844 (1286)	4844 (1286)	6174 (1587)	5160 (1324)	21.5 (2.4)	3116 (792)	21.1 (2.2)	21.5 (2.4)	3116 (792)	21.1 (2.2)	21.5 (2.4)	3116 (792)	21.1 (2.2)	21.5 (2.4)	3116 (792)
4084 (895)	4084 (895)	3879 (867)	3116 (792)	21.1 (2.2)	3116 (792)	21.1 (2.2)	3879 (867)	3116 (792)	21.1 (2.2)	3879 (867)	3116 (792)	21.1 (2.2)	3879 (867)	3116 (792)

Note: F

I = IIA > I = IIB

I = IIA > IIB

(2000).

I	IIA	IIB	()	IIA > I = IIB	M ₁ &	J
4026 (699)	4655 (879)	3865 (723)	28 (6)		M ₁ (1984)	J
5317 (1071)	6594 (1377)	5146 (1126)	20.3 (1.1)	I = IIA > IIB	H	H (2001)
5003 < 311 >	6986 < 299 >	6777 < 355 >	33 < 3 >	I < IIA = IIB	G	G (2005)
5127 < 366 >	7875 < 645 >	6176 < 516 >	28.5 (8)	I < IIB < IIA	G	G (2001)
4518 (1336)	4718 (1143)	3901 (1299)	26.1 (3.5)		I ₂	I ₂ (1985)
4137	4813	4210	18 16 20		M	M (1986)
70 (13)	84 (12)	82 (17)	21.9 (1.3)		M	M (1990)
4113 < 275 >	5796 < 404 >	4183 < 418 >	33 < 1 >		J	J (1990)
4840 < 145 >	6455 < 196 >	5577 < 194 >	19.2 < 0.5 >		H	H (1991)
5208 (1494)	6070 (1944)	4648 (1043)	31.6 (9.8)		G	G (1999)
5022 (1060)	5577 (1659)	4836 (1389)	38 (5)		C	C (2002)
4320 < 337 >	6267 < 127 >	5163 < 412 >	20.5 < 1.0 >		H	H (2003)
3611 < 288 >	3734 < 368 >	3142 < 337 >	29.9 < 2.01 >		H	H (2004)
4647 (1775)	5496 (1408)	4323 (1113)	25 < 1 >		D'A	D'A (2006)
			20.6 (1.5)		M	M (2006)
			25.1 (3.9)		K	K (2008)
						J (2008)

Note:

III. χ^2		A		χ^2		χ^2		χ^2	
I	IIA	IIB	()	χ^2	χ^2	χ^2	χ^2	χ^2	χ^2
3948 (541)	4389 (771)	3490 (763)	26 22 40	42		I > II		(1981)	
4114 (920)	3585 (1127)	2773 (1162)	20.2 (1.2)	16		I = IIA > IIB		(2001)	
2819 < 264 >	2583 < 271 >	1988 < 466 >	24.6 (3.7)	38				(1985)	
			26 < 0.4 >	9				(2006)	

Note:

F (I),
 (M ., 1997), IIA
 (G .,
 2001). F I .
 F (), I
 (M ., 1997), I
 F (, 1981).
 A H (1979) (I)
 IIB I , I IIA
 (FG) (), (F G)
 , F G, FG
 A A (1976, 1977)
 , F G
 (, 1976). (1977) FG
 (), (F)
 A , (, 1972)
 A F F G , F FG
 (, 1976, 1977; , 1977), II
 A

S a f d a a c e b e i e h e d h a c e
 I IIA
 (, 10); IIA
 IIB I . I , I
 (); I IIA
 ; I
 ; I

	I	IIA	IIB	()				
D	M 4846 (1149)	L 3343 (1081)	2981 (930)	26 22 40			I = IIA = IIB (1981)	
I ₂	3809 (664)	2560 (676)	2374 (723)	29.4 (10.6)			I > IIA = IIB M (1997)	
I ₂	62 (5)	50 (12)	48 (8)	20 30			I > IIA = IIB M (1997)	
I ₂	62 (7)	49 (10)	43 (8)	20 30			& C (1987)	
I	L 4127 2756 5876	L 3669 2194 5381	3791 2462 6370	23.4 (5.8)			M (1998)	
				48 (6)			L (2001)	

Note: I
μ² ; M
μ² ; M () ; M ; I IIA

I. μ^2 μ^2 A μ^2 μ^2

II. M . . . p² p² p² p²

IIA IIB

239.2()- 13

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